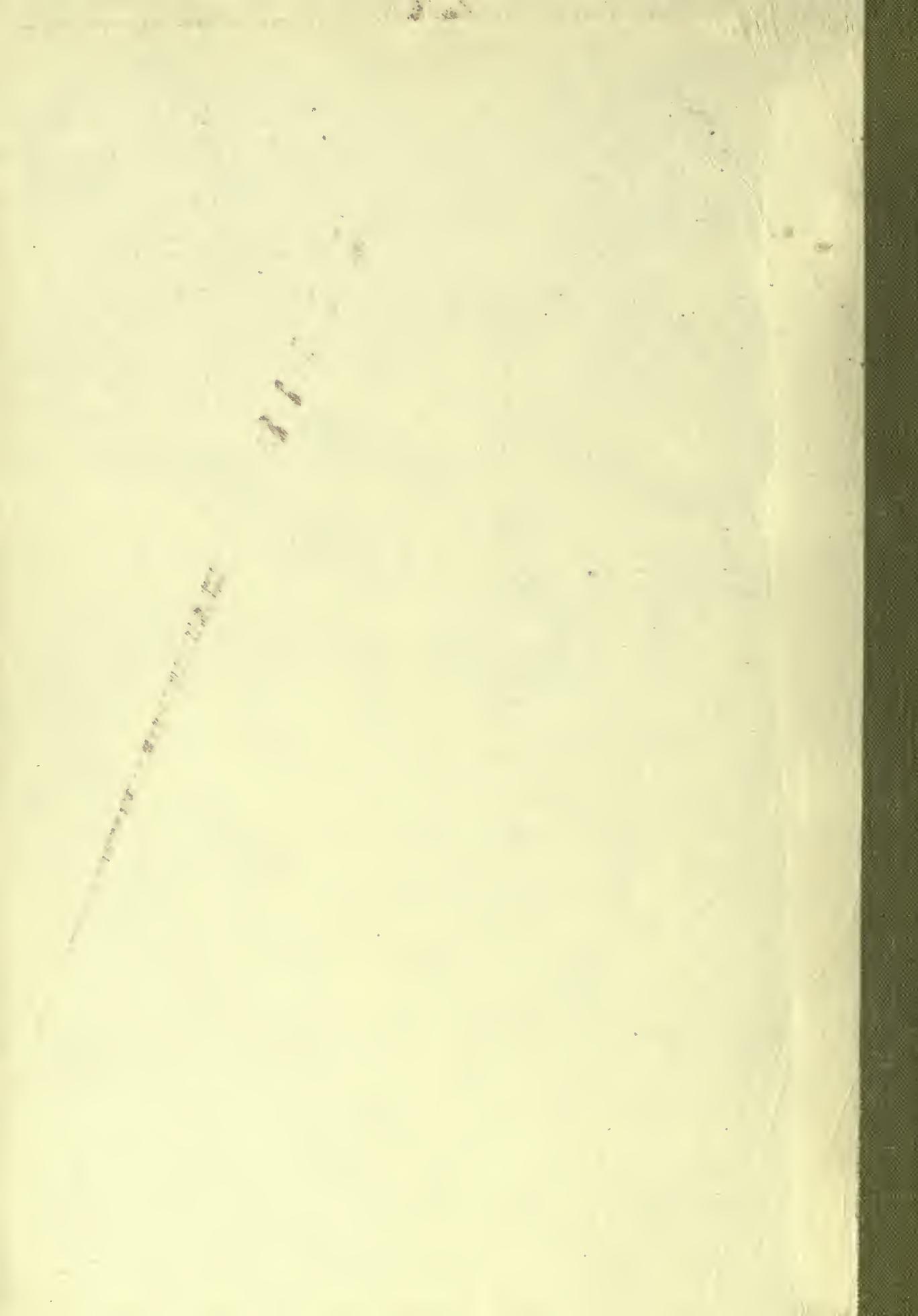


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VOLUME V
JANUARY-JUNE, 1903



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The rise in the typhoid mortality during the past year and continuing into the winter season, is unquestioned proof that water is the chief carrier of the contagium, and that our public water-supplies are contaminated. The existence of some 9,000 deaths a year in one city, 6,000 in another, and 4,000 in a third, is a biting commentary on the policies and the charities which devote so much attention and money to a hundred things of infinitely less importance than public hygiene and preventive medicine. Here is a truth no one disputes—the value of human life; and another as indisputable is that these hundreds of thousands of deaths are unnecessary. Medicine has shown the cause and the cure, and now all that remains is that the wasters of our public and private wealth shall make an end of the wellknown causes of the needless deaths. There are doubtless other means of the transfer of the typhoid germ except water—such as inhaled dust, flies, uncooked foods—but all together do not equal water as the agent. And we now know that it is perfectly possible to free our drinking water from typhoid germs; all that is needed is the public consciousness and conscience, the demand that water shall be pure. The present waste of life is shameful, a frank sacrifice to carelessness and consciencelessness.

The Drinking Water Furnished by the Railways,—who knows anything about it? What are the regulations of the different companies as to its purity, and the cleansing of the tanks and coolers in railway waiting-rooms, cars, steamboats, etc.? In the presence of the great fatality of typhoid fever and the recent increase of the disease all over the country the foregoing questions seem very apropos. Certainly the transportation companies do not generally furnish their patrons with boiled, filtered, or spring water, and just as certainly the water furnished by most of our cities, especially by Chicago and Philadelphia, is contaminated and dangerous. One constantly notices the engineer or fireman drinking from the tank of the tender, and the men who handle the freight trains, the station agents all along the road—is there any attempt, is there any company that makes any serious and thoroughgoing effort to supply these employes with pure water? Whose business is it to see that the railways do their duty in this respect? Can any of our readers tell us what laws have been passed or what regulations of city and State governments, and of

Boards of Health, exist concerning this important subject? Have we not here a source of frequent infection which has too much escaped the attention of sanitarians?

Native and Foreign Elements in the Population of the United States.—A writer in the *Nineteenth Century* for December shows what he calls “the weak spot in our republic,” consisting of the decrease in the rate of increase of the entire population, and the far greater relative decrease of the native in comparison with the foreign elements. The rate of increase is slowing up, the census of 1900 showing about 4,000,000 less than the previous rate of increase indicated. This is due to lessened immigration. In the typical New England State of Massachusetts the alien has increased four times as fast as the native, while in no New England State is the native American in a majority; and today the foreign birthrate is four to one of the American. Out of our 76,000,000 nearly 10,000,000 are Negroes, Indians, Chinese, etc.; more than 10,000,000 are foreigners; and 13,000,000 are born of foreign parents. Then comes the change of nationality of the immigrants. From 1820 to 1899 there were about 19,000,000 settlers from other countries—8,000,000 British, 5,000,000 German, and 1,250,000 Swedes and Norwegians. But since 1893 the bulk of immigrants has come not from western but from eastern Europe. The relatively small outflow to northwestern Canada has trebled in the last three years, while Canadian immigration has ceased. With sterile natives, prolific foreigners, lessened immigration and its changed character, it would seem as if a submerging of the original Anglosaxon stock and character is inevitable. If there is no way of avoiding this by legislation, the question must arise whether it may not be at least modified. France is the only country where attempts to increase prolificity have been consciously made. Failure there would seem to discourage any such a movement here. Our problem indeed is intimately bound up with our industrial and protective system. Will it be possible for the little leaven to leaven the whole lump? We have been accustomed to think the Anglosaxon character of our life its most precious element.

The Greatest Number of Nontaking Vaccinations.—In response to our request recently made for a record of the greatest number of nontaking vaccinations

occurring in the practices of any of our readers, Dr. D. N. Kinsman, of Columbus, Ohio, reports the following cases :

1. L. M. L., a professor in the Medical College of Ohio, told me he had vaccinated himself more than a score of times unsuccessfully. He attended smallpox cases during his whole professional life without infection.

2. M. Mc. was vaccinated 10 times unsuccessfully, the last by me while she was quarantined at home with her sister who had smallpox. She occupied the same bed as her sister, until the eruption was entering the vesicular stage. She did not take smallpox.

3. M. B., a medical student, I vaccinated the ninth time, unsuccessfully, while he was occupying the same room as his chum who had smallpox. He did not take variola.

4. B. was vaccinated by me during her first year. When she was five she was vaccinated 19 times in three months during a severe local epidemic of smallpox. From that time till now, more than 20 years, I have repeated the operation many times, so that the number of unsuccessful vaccinations amount to more than 40. The virus used was from the same lots successfully used on other cases.

Such cases, as Dr. Kinsman suggests, appear to show that in rare instances some persons are naturally immune to smallpox, unless the theory of Copeman is thought worthy of consideration, that, without producing any local manifestation, the repeated rubbing of the vaccine into the skin produces immunization. What number of unsuccessful vaccinations would Drs. Reynolds and Reilly, of the Chicago Department of Health, place as a safe limit? Would they go on revaccinating a pseudo-immune every day or week, or month of his life?

A Sainly Defender of Patent Medicines.—Some one sent us an editorial taken from a paper called the *New York Weekly Witness*, in which *American Medicine* was most severely criticised for attacking the widespread sale of alcohol under the guise of patent medicines. We had never heard of this "witness," but from the extremely patent stupidity and hypocrisy of the editorial we suspected it must be—well, just what it is! We ordered half a dozen numbers to be sure our suspicion was correct. The editorial says that no one knows anything about millions of dollars' worth of these alcoholic patent medicines being sold, and implies that it is not so; it ridicules the idea that they make drunkards; it says that the so-called "bitters" of the syndicates are not medicines, and so not classifiable with the patent medicines; it says that alcohol is harmless or harmful according to the other things mixed with it; it says that the doctors make more drunkards than the patent medicine men; it says that most of the medicines prescribed by physicians contain alcohol, etc. The language in which this is said is sometimes doubtful and always slimy with indirection and illogic, but we think this is what is meant and believed. The "fool of a doctor," in the opinion of this much-praying editor, is very common, in fact he says that a *good* doctor is "a priceless jewel,"—of which there are of course very few in the world,—perhaps not so many as of really religious editors. "Thousands of persons," he says, "have been greatly helped by patent medicines who have sought help from doctors in vain." "Some people are practically compelled to doctor themselves because they cannot find a doctor who will treat them intelligently." Turning to the actual pages of this defender of the faith

we find, as was to be expected, that a nauseating religiosity vies for space with patent medicine advertisements. The advertising and reading columns are mixed as badly as in a yellow newspaper or a ladies' journal. We find the reading notice, that dirty relic of barbarism which even irreligious magazines have spit upon. We find "Mrs. Pinkham," "Swamp Root," "Piles cured," "Actina," "Are your kidneys weak?"—with portraits of the testimonialists, and \$5,000 offers of rewards if the testimonials are not genuine. "Doctors and hospital physicians use it when all else have failed with their patients." Plainly, religion (of a certain kind) with advertisements (of a certain kind) pays. But what a way to make a living!

The Fourth Manifesto of Physicians as to Total Abstinence.—We gladly give place to the statement published in another column for the encouragement of the cause of total abstinence by physicians. We believe in total abstinence heartily and therefore endorse the preliminary part of the manifesto. But it seems a pity that some statements should not have been made less sweeping and more scientific. Had a wise conservatism guided the remonstrants the profession would have almost universally signed the document. We believe in total abstinence when it is founded upon a man's free and individual choice, and we believe as fully in keeping up all the agencies and arguments to convince every man that such a free and independent decision is both his duty and his self-interest. But we do not believe in compelling adults to be total abstainers by means of law and punishment. That is tyranny; it is false morality, and it increases the evils of alcoholism, etc., instead of diminishing them. It should have been made clear in the statement that total abstinence is aimed at by individual conviction and resolution, not by legislative enactments and punishments. The position taken in the first paragraph is, according to present science, not true. It is in many cases the reverse of true. The second paragraph is usually true, but not always so. The third paragraph is surely true. In the fourth the condition of health should have been noted. In some disease-conditions the majority of physicians believe that alcohol may be of service in improving bodily functions. The fifth paragraph is terribly true, and the conclusion is as indisputable. The manifesto should have contained the qualification that it excepts the use of alcohol under the advice of a qualified physician.

Money Prizes and the Encouragement of Scientific Discovery.—The award of the Nobel prizes, about \$40,000 each, has brought misgiving to thoughtful minds, so far at least as relates to stimulating scientific discovery. It would seem as if nothing is more needed than the instruction of the rich in the art of giving wisely, of doing what they desire, and of not utterly wasting their gifts. In his provisions Nobel made two or three fundamental mistakes, either of which alone in fact condemns his plan. He gave too much money to a single person; he gave it as a reward, not as an inciter of discovery; he mistook the essential nature of the great scientific worker. With \$40,000 he could have put 10

or 20 good scientific minds at work in genuine scientific research. For completed discovery the scientist finds all the reward he needs or really wishes. More than one great discovery will usually not be made by a single mind. What civilization needs is to provide the means for discoveries not yet made. There are thousands of men ready and willing to devote their lives to research if they could be assured the simplest necessities of material comfort. One of the first rules of the normal school for millionaire pupils would be, Give while you live! The second would be, Give your trustees the largest freedom as regards details. These two rules have enabled Mr. Carnegie in his Institute to avoid the great mistake made by Nobel.

Antialcohol Prizes by the W. C. T. U.—Four prizes (of \$12 and \$10) are offered by the superintendent of Nonalcoholic Medication for National W. C. T. U. for the best story, humorous article, poem, and oration. Prizes Nos. 1 and 3 are to show "the evils of the medical use of alcohol" exclusively. Prize No. 2 is to show "the evils and absurdities of the use of patent medicines containing alcohol, opium or cocain, or other dangerous drugs." Prize 4 is against both the professional and the patent medicine use of alcohol. We heartily commend the plan of Prize 2, but must protest against the lack of discrimination exhibited in the other offers of prizes. A common crusade against the use of the fluid extracts, tinctures, wines (of ergot, etc.), and spirits (some twenty-five in number) of our materia medica, and against patent medicines, is open to much criticism; it is mixing up two dissimilar things, the indiscriminate, unregulated self-doctoring of the patent medicine users with the scientific judicious treatment by the physician. It compares the extremely slight use of small amounts of an alcoholic by the physician with the wholesale guzzling of the patent-medicine and bitters drinkers. It presupposes that the medically untrained mind of the reformer has judgment superior to that of the great mass of physicians. It alienates the sympathies of physicians, who are usually and rightly believers in temperance, not seldom in total abstinence also, but who are well aware that their choice of therapeutic agents must not be limited by nonexpert advice, or by prejudice and dogmatism. The indiscrimination shown by the prize-offerers can only produce, as it is evidently designed to produce, the same feeling of popular antipathy and ridicule toward the physician who gives his patient a drop or two of tincture of aconite, as against the stomach-bitters maker who allows the self-drugger to take his 40% alcoholic concoction *ad libitum*. All reformers should conjugate the verb to *distinguish* in all its moods, tenses, persons, genders, and numbers, like a prayer, at least thrice daily.

Alcoholism in Children.—Dr. Max Kassowitz, professor of children's diseases in the University of Vienna, at the Eighth International Congress against Alcoholism pleaded that the use of alcoholic drinks, etc., by children produces a large number of serious diseases. The child organism, he showed, is particularly susceptible to injury from this cause. The truth of these statements cannot

be lessened by other contentions made by Dr. Kassowitz as to the food-value of alcohol, its antiseptic effect, uses in fever, etc., which may or may not be true, but which should not have been mixed up with the undeniable verity of the perniciousness of alcohol when used by children in drinks. In our country this is not seen so much as it is in Europe, but there is altogether too much of it even here, especially if one remembers the extensive use of nostrums in the families of the poor and ignorant. There is one method of bringing on alcoholism in children that is not alluded to by Dr. Kassowitz nor by the W. C. T. U. (which translates his article), and that is through the system of the nursing mother. The judgment of the individual physician in the exceptional case should, of course, rule, but in general alcohol must result in harm to mother and child.

Unscientific Science.—An excellent address before the School of Medicine of the University of Colorado by Professor Lee, of Columbia University, was marred by an unscientific materialism as to "vital force." A page was devoted to contempt of this term and of what it represents. Professor Lee's attitude is shown in these words:

"Through the latter part of the eighteenth and the early part of the nineteenth century the vital principle was still in control of the physiologists, but, as they learned more of the conservation and the transformation of energy in inanimate things, and more of the working of living bodies, the gulf between the inanimate and the animate gradually narrowed, and the supremacy of the laws of chemistry and physics in all things living became clearly recognized. It is true that at times in these latter days sporadic upshoots of a neovitalism raise their tiny heads, but these are to be ascribed to the innate aversion of the human mind to confess its ignorance of what it really does not know, and they do not receive serious attention from the more hopeful seekers after truth."

In our issue of April 19, 1902, pp. 624, 625, we showed that the dogmatism of the foregoing excerpt is absolutely untrue. Michael Foster, Professors Halliburton, Ewald, Gowers, Bunge, Lord Kelvin, John Haldane, Pflüger, G. N. Stewart, Wundt, Huxley, etc., would feel flattered when called "tiny heads" and "sporadic upshoots of neovitalism." And yet Professor Lee seems to assent to Virchow's "Omnis cellula e cellula." If all living cells are derived from living cells where is the "narrowing of the gulf between the animate and the inanimate?" The dogma of materialism is unscientific, and materialism never yields good science. Science in fact will not permit of dogmatism, materialistic or immaterialistic, and so long as spontaneous generation remains unproved so long should there be no bigotry as to the unity of life and matter.

Empiricism and Medical Science.—In this same address Professor Lee said that medicine had "from first to last been permeated by the pernicious influence of empiricism." He further says that from the earliest ages science and empiricism, like the good and bad principles of all natures and religions, have ever been contending. "Science," he says, "is sure to be victorious over empiricism." All of which seems to us an erroneous statement of the facts. It takes a false view, and from a dogmatic standpoint. Except in some branches of mathematics and physics, and these but sel-

dom, empiricism is the basis of all discoveries. In biologic investigations, and especially in medical matters, so-called empiricism almost always makes the discoveries which science afterward proves and generalizes. There is no more excellent demonstration of this than vaccination and serumtherapeutics. Our therapeutics are today nearly entirely empiric in origin, and "science," in the theoretic and laboratory sense, is only corrected and extended and rationalized empiricism. The faults of empiricism do not do away with the method. Do not let us throw the baby away with the bath. Moreover, science is not solely "good" and empiricism "bad"; the two methods of discovery and progress are not opposed; one will never have any "victory" over the other. It would be a sad day for civilization and for science itself if it should ever be "ultimately victorious." The mistakes of empiricism are indeed many and to be avoided, but they do not affect its value as a method of discovering truth. The truest scientist is the most careful and observant empiricist.

The Increase of Insanity Among Negroes.—In his report of the Alabama Insane Hospitals Dr. Searcy says that in 1870 there were 33 negroes in the State hospitals; in 1880 there were 71, in 1890, 241, and in 1900 there were 451. The inference is allowed that this represents an actual increase of the negro insane. But is there no fallacy in the figures? Was the increase in the number not due to the fact that the insane were previously cared for in the county almshouses, or in homes, and that there has in these years been an increase of hospital inmates only without a real, or so great, an increase of the insane in the State? Are there trustworthy data in reference to the increase of the negro insane in other States? If there is a genuine and general increase of insanity among the negroes of the South, as stated, the fact is profoundly serious, and presents a problem to the States concerned that will demand the study of legislators. The sudden transfer of the negro from conditions of slavery to those of freedom and competition certainly put a strain upon these ill-prepared and handicapped pupils of civilization which they can not bear; but is the mind giving way at the rate suggested by Dr. Searcy's figures?

EDITORIAL ECHOES

Cosmetics and Hair Restorers.—Most of the advertised cosmetics and hair restorers—to begin with the beauty medicines—have mercury, lead, bismuth, or zinc entering very largely into their composition. "Madam Ruppert's Face Bleach," and Mrs. Harriet Hubbard Ayer's "Recamier Balm" and "Recamier Moth and Freckle Lotion" contain corrosive sublimate. "Laird's Bloom of Youth," "Hagan's Magnolia Balm," and "Bradford's Enameline" contain oxid of zinc. Professor C. F. Chandler analyzed eight of the best known hair "restorers" and "renewers" and reported to the New York Board of Health that they all contained lead, some as much as seven grains to the ounce. To the person who knows the action of these mineral poisons, comment is unnecessary, and we submit that they should not be used by persons who do not know their action.—[Dr. Edward Bumgardner, Transac. Col. State Med. Soc.]

BOOK REVIEWS

The New International Encyclopedia, Volume IV.—This volume includes words from Canada to Colenso, and in medicine the principal subjects are cancerum oris, capsicum, carbolic acid, carbonic-acid gas, carbuncle, carotid artery, cartilage, castor oil, castration, catalepsy, cataract, cathartics, cattle plague, caul, cellulitis, chest, chigoe, chloral, chloroform, chlorosis, cholera, chorea, cinchona, circulation, circumcision, cirrhosis, clavicle, climate, club-foot, cocain, codliver-oil, colchicum.

We cannot forbear again expressing our admiration of the general excellence and the fullness of space allowed medical subjects in a popular cyclopaedia. For the first time, so far as we know, professional matters have obtained a proper recognition in such a work. We must note a few omissions which strike us, in order to keep the editors up to a high standard. One can never be certain that a subject apparently omitted has not been treated under another heading. In that case there should, of course, be a cross reference. We find no mention and no cross reference to caput succedaneum, chalazion, chancre, clonus, chloasma, chorion. Under Cheyne no mention is made of Cheyne-Stokes breathing, and Charcot's disease is not alluded to under Charcot. Under circumcision the medical and surgical significations should have been epitomized. The same may be said of charcoal. Caustic as a mathematic figure has a half column and as a medical term only one-eighth. The general public will agree, we think, that the proportion should have been reversed. The same overfondness for mathematics that disfigures some other cyclopedias is also illustrated by one-half column devoted to cassinian oval, while omitting chalazian, etc. The legal bias is illustrated in a column devoted to case as a legal term, with no mention of the equally important medical use of the word. We think it too much of a flattery of popular nomenclature to treat cantharides under blistering-beetle. Of the articles themselves, they are all that could be reasonably expected. The single column given to chest is altogether insufficient, and the space given to chorea ridiculously so. We have taken pains to test the accuracy of the cross-references given. Caustery is referred to bleeding, cantharides to blistering-beetle, and there they are found.

Materia Medica, Therapeutics, Medical Pharmacy, Prescription Writing, and Medical Latin.—A Manual for Students and Practitioners. By WILLIAM SCHLEIF, Ph.G., M.D. Series edited by BERN B. GALLAUDET, M.D. Second edition, revised and enlarged. Lea Brothers & Co., Philadelphia and New York.

This book is practically a syllabus of the lectures of Dr. H. C. Wood. It appears to be accurate. It is concise and clear, and should be of service to the student who desires a brief statement of the main facts covered by its title.

A Textbook of Pathology and Pathologic Anatomy.—By Dr. HANS SCHEMAUS. Translated from the sixth German edition by A. E. THAYER, M.D., with additions by JAMES EWING, M.D. Philadelphia and New York: Lea Brothers & Co., 1902.

The ideal textbook of pathology, if it is possible for any book to be such under the conditions of rapid progress which characterize this branch of medical science, should state clearly the present status of our knowledge, emphasize differences of interpretation when such exist, explain the reason for diverse views, and give well chosen references to original sources. The altered physiology resulting from changed anatomic conditions should be emphasized, and reference to the altered metabolism distinctly emphasized, especially when the change is one bearing on problems in clinical medicine. The illustrations should aid one in understanding the text; not the reverse. The book before us does not fulfill these requirements. It is the type of textbook that gives the student the idea that pathology is very simple, and he can get along without lectures and collateral reading. It is comprehensive in the sense that it covers many subjects, but many of these subjects are treated very inadequately. Much recent important work is not mentioned. Many descriptions are ridiculously brief; thus the histology of the intestine in typhoid fever is described in one sentence of 15 words. Although "its great popularity in

Germany" may have "brought it to a sixth edition," one gets the impression that not much care has been devoted to the revisions of these various editions, and regrets that the "editor has avoided, so far as possible, any changes in the subject-matter." Many of the illustrations are good, but many others are hardly intelligible, even with the aid of their legends. The publisher has done his work well.

Clinical Methods.—A Guide to the Practical Study of Medicine. By ROBERT HUTCHISON, M.D., and HARRY RAINY, M.A. Second revised edition. Chicago, 1902: W. T. Keener & Co.

The chief alterations in the second edition of this work are in the chapters relating to the blood, the nervous system, and to clinical bacteriology, although the entire book has been modernized. The chapter on clinical examination of the blood is valuable because of the minute instructions given for technic and for care of instruments. This attention to details characterizes the entire book and renders it useful to practising physicians. To this end another feature of the book is to be commended, viz., the omission of many recently proposed methods of clinical investigation. For this two reasons are given. First, some of these methods have not yet been sufficiently proved, and second, some of them, especially chemical analyses, are too complicated for clinical use when simpler, though less accurate, procedures will suffice. The binding of the book is entirely too flimsy.

The Treatment of Tabetic Ataxia by Means of Systematic Exercise.—By Dr. H. G. FRENKEL. Translated and edited by L. FREYBERGER, M.D. Philadelphia: P. Blakiston's Son & Co., 1902.

The editor of this edition states that it is not a translation of Dr. Frenkel's book but an adaptation of it to the requirements of physicians, whose chief need is the ability to treat the ataxia of their tabetic patients. Frenkel's method differs from that associated with v. Leyden and Goldscheider in that it lays greatest stress on practice instead of athletic strengthening of the muscles, and in requiring but little apparatus. The book under consideration is a very clear exponent of this method. Part I, 66 pages, consists of general considerations regarding the types, causation, and theory of tabetic ataxia, special attention being given to the handling of patients in the examination of sensibility and examination for ataxia. Part II deals with the mechanism of the movements of the human body and the classification of exercises for the improvement of ataxia. The illustrations of movements and the simple apparatus employed are highly explanatory. As a whole the book is very satisfactory.

Transactions of the Colorado State Medical Society.—Reed Publishing Company, Denver.

This volume of 452 pages contains the entire proceedings of the convention as well as the bylaws and list of members of the society. The scientific program includes 38 papers. The total active membership of the society is 340. The volume also contains the essay of Edward Bumgardner, M.D., that was awarded the prize by the committee on literature for the best essay on the subject, "Dangers of Self-Drugging with Proprietary Medicines."

A Handbook of Materia Medica, Pharmacy, and Therapeutics.—By SAMUEL O. L. POTTER, A.M., M.D., M.R.C.P. London. Ninth edition, revised and enlarged. P. Blakiston's Son & Co., Philadelphia, 1902.

The new edition of Potter is very welcome. It has all the merits of conciseness and lucidity which have characterized this work from the beginning, and have made it so valuable for ready reference; and the new developments in the fields of synthetic chemistry, serums, and organic extracts receive full but conservative treatment. The author's preface states that 40 new articles have been inserted in the section of materia medica, and 13 rewritten. In the section of therapeutics, new articles have been inserted on local anesthesia, beriberi, dhobie itch, tropical fevers, heatstroke, hemoglobinuric fever, lymphadenoma, millaria, bubonic plague, sprue, tinea imbricata, tinea versicolor, and toxemia. Many articles in this portion

of the book, especially those referring to tropical and epidemic diseases, have been rewritten, and many other articles have been expanded with items from current medical literature and from the author's personal experience. This experience has been enriched by a service of three years as army surgeon at the headquarters of the Department of the Pacific in the Philippine Islands, and Dr. Potter's known skill in diagnosis and therapeutics, with his proved accuracy in observation, should render its fruits especially valuable.

The Principles and Practice of Gynecology.—For Students and Practitioners. By E. C. DUDLEY, A.M., M.D., Professor of Gynecology, Northwestern University Medical School. Third edition, revised and enlarged, with 474 illustrations, of which 60 are in colors and 22 full-page plates in colors and monochrome. Lea Brothers & Co., Philadelphia and New York, 1902.

It is a pleasure to review this book, as it is one of the best in the English language. The writer has fulfilled his purpose in writing a practical treatise on gynecology. He has employed a rational division of subjects made from the pathologic and etiologic sequence, preserving so far as possible the unity of each pathologic process as it may affect consecutively the different pelvic organs. The illustrations are unusually good and numerous, adding much to the value of the book. In this third edition the author has made a thorough revision, which includes the recent advances in gynecology, and has rewritten, rearranged, and condensed many chapters. His characterization of the present status of electrolysis in the treatment of uterine myoma will undoubtedly meet the approval of practical gynecologists. He considers that the survival of the electric method in gynecology depends chiefly upon the patient's ignorance of its inadequacy and dangers, upon the worship of the mysterious, upon an unreasoning dread of operative measures, and upon a desire to grasp any other promising means of relief. The plates illustrating the operation of vaginal hysterectomy are exceptionally fine and give a better idea of the operation than pages of text. That the therapeutic value of the Röntgen ray is not mentioned as a palliative treatment for inoperable cancer is probably due only to the fact that this value has been so recently demonstrated. But undoubtedly in the future no textbook will be complete which does not state the value of the Röntgen ray as an agent in the treatment of inoperable or recurrent malignant disease.

The arrangement of the table of differential diagnosis in confusing conditions is of especial value to the student of gynecology. We are glad to note that Dudley advises the rational method of performing episiotomy recommended by Tarnier, which passes to one or the other side of the anus; and that he also avoids describing an unnecessary number of operations for perineorrhaphy. He considers immediate operation for puerperal laceration of the cervix is of questionable value, unless necessitated by profuse arterial hemorrhage, as the exact relations of the torn vaginal wall to the cervix are difficult to define and accurate adjustment of the torn surfaces often impossible. Only about one page is devoted to solid tumors of the ovary and no mention is made of the frequency with which they are complicated by ascites. Probably it would have been wise to devote more space to this subject. But the thoroughness with which the author has treated the important subjects of gynecology, the careful, conservative, and up-to-date treatment he has advised lead us unqualifiedly to recommend this book to students, practitioners, and specialists.

Manual of Childbed Nursing, with Notes on Infant Feeding.—By CHARLES JEWETT, A.M., M.D., Sc.D., Professor of Obstetrics and Diseases of Women in the Long Island College Hospital. Fifth edition, revised and enlarged. New York: E. B. Treat & Co., 1902.

In this little manual of 80 pages, originally prepared for the Training School for Nurses at the Long Island College Hospital, we have a valuable aid to the nurse in remembering the more important practical teaching of the hospital training. It does not presuppose too much knowledge on the part of the nurse, neither does it encourage her to rely too much upon her own responsibility, but indicates her duties during labor and the puerperal period, including the care of mother and child. We

are glad to see that the nurse is instructed to beware of alarming her patient with talk of her experiences in other cases. This is particularly a fault of the so-called monthly nurse, who delights to entertain her patient and friends with all the gruesome details of any horrible labor with unfortunate results which she may have chanced to witness. The nurse may do much to encourage and reassure her patient, and should never unnecessarily alarm her. The directions for the management of birth in the unavoidable absence of the physician are especially clear and safe for the nurse to follow. We can heartily recommend this little volume to nurses and teachers of training-schools, while medical students may read it with advantage to themselves.

Blakiston's Quiz-Compend, No. 4: Human Physiology.—By ALBERT P. BRUBAKER, A.M., M.D. Philadelphia: P. Blakiston's Son & Co., 1902. Price, 80 cents net.

We have always considered this number one of the best, if not the best, in this series of compends, and the latest edition serves to further confirm that view. Some revisions have been made and new paragraphs added. The book now contains 270 pages. We unhesitatingly recommend it to the medical student, and the busy practicing physician will find it an extremely handy and useful book of reference.

Lessons and Laboratory Exercises in Bacteriology.—An Outline of Technical Methods Introductory to the Systematic Study and Identification of Bacteria. Arranged for the use of students by ALLEN J. SMITH, M.D., Professor of Pathology in the University of Texas, Galveston. P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia, 1902. 298 pp. \$1.50 net.

This is a thoroughly practical book, having crystallized as it were from the daily experience of the author in conducting laboratory exercises during a period of several years. The entire series of exercises outlined may be carried out in eight or nine weeks of 10 hours' work each week. Sufficient explanatory matter precedes the exercises proper to render clear every step in the technic, and in Chapter IX the student is provided with a simple but comprehensive key to the classification and identification of bacteria. The book is interleaved with blank pages for conveniently recording special instructions or notes of the outcome of special experiments, and there is furnished a blank form to be followed in recording the data ascertained in connection with the study of the various forms of microorganisms. The book is an excellent one and cannot fail to facilitate the work of both teacher and student in its special field.

New Jersey State Board of Health: Twenty-fifth Annual Report, 1901.

This report is a volume of 459 pages giving the report of the secretary, the location of smallpox outbreaks, reports of local Boards of Health, facts concerning water-supplies, lists of physicians in New Jersey, etc.

BOOKS RECEIVED.

[Prompt acknowledgment of books received will be made in this column, and from time to time critical reviews will be made of those of interest to our readers.]

How to Succeed in the Practice of Medicine.—By JOSEPH McDOWELL MATTHEWS, M.D., LL.D., President of American Medical Association, 1898-99, ex-President Mississippi Valley Medical Association, Kentucky State Medical Society, American Proctologic Society, Louisville Surgical Society, etc. Louisville: John P. Morton & Co., 1902.

Alcohol. A Dangerous and Unnecessary Medicine; How and Why. What Medical Writers Say.—By MRS. MARTHA M. ALLEN, Superintendent of the Department of Non-Alcoholic Medication for the National Woman's Christian Temperance Union. Charles C. Haskell & Son, Norwalk, Conn. L. N. Fowler & Co., London, 1900.

The Mattison Method in Morphine. A Modern and Humane Treatment of the Morphin Disease.—By J. B. MATTISON, M.D., Medical Director Brooklyn Home for Narcotic Inebriates. E. B. Treat & Co., New York, 1902. Price, \$1.00.

A Textbook of Diseases of the Eye. A Handbook of Ophthalmic Practice for Students and Practitioners.—By G. E. DE SCHWEINITZ, A.M., M.D., Professor of Ophthalmology in the University of Pennsylvania, etc. Fourth edition, revised, enlarged and entirely reset. Octavo volume of 773 pages, with 280 text-illustrations and 6 chromo-lithographic plates. Cloth, \$5.00 net; Sheep or Half Morocco, \$6.00 net.

Physician's Visiting List, 1903. P. Blakiston's Son & Co., Philadelphia, 1902.

AMERICAN NEWS AND NOTES.

GENERAL.

Smallpox in the Barbados.—The epidemic is reported to be rapidly abating. From July 13, when the disease broke out, up to November 29 there were 1,368 cases, of which 1,063 patients were discharged cured and 110 died, leaving 190 still under treatment.

Removal of Corpses in Cuba.—A law which is operative in Cuba forbids the removal of corpses until two years after the date of the burial, and then special permission of the civil authorities and of the church is required, as well as two medical certificates to the effect that the public health will not be injured by such removal.

Cholera in the Philippines.—A fresh outbreak of the disease is reported to have occurred in Manila, with an average of 30 cases daily. Army surgeons who have arrived recently in the United States from the Philippines state that the death-rate in Iloilo is very heavy, and the authorities seem absolutely powerless to check the epidemic.

Bubonic Plague in Mexico.—A recent report says the disease which made its appearance almost simultaneously at Lapaz, Guaymas, Mnlje and Mazatlan, all situated on the Pacific coast of Mexico, has been pronounced by competent medical authority to be bubonic plague. At Mazatlan the death-rate from the disease is from six to ten persons daily. Every possible precaution has been ordered taken to prevent a spread of the disease.

Miscellaneous.—MCGILL UNIVERSITY, MONTREAL: Dr. P. G. Woolley has resigned the Governor's fellowship in pathology. Dr. H. Wolverstan Thomas has been appointed to a faculty fellowship in pathology, and Dr. A. H. Gordon was appointed demonstrator in physiology. PHILADELPHIA, PA.: Dr. Alfred Hand, Jr., has been appointed visiting physician to the Children's Hospital, in place of the late Dr. Frederick A. Packard.—Dr. Thomas L. Coley has been appointed visiting physician to the Methodist Episcopal Hospital, in the place of Dr. J. P. Crozer Griffith, resigned.

Pure-Food Bill Passed House.—The provision known as the Hepburn pure-food bill has passed the House as reported from the Committee on Interstate and Foreign Commerce. In its report the committee said: "The bill does not prohibit the manufacture or sale of any food product not deleterious, however it may be adulterated, nor does it lay its inhibition upon the sale of an adulterated drug; but it does provide that all adulterated food and drugs shall be placed on the market under their true names and in such a manner as to advise the purchaser of what he is getting. The measure is not drastic nor unreasonable. It simply enjoins upon manufacturers and dealers in products coming within the range of interstate commerce that they shall brand or tag or in some way so mark their goods as to show just what they are."

The Committee on Scientific Research of the American Medical Association (Alfred Stengel, chairman, 1811 Spruce street, Philadelphia; William Osler, Baltimore; Ludwig Hektoen, Chicago) is prepared to receive applications from gentlemen engaged in scientific research bearing upon practical medicine or surgery. Five grants of \$100 each will be given in support of such investigation. The results of the work in each case must be presented, either in abstract or complete, before one of the sections of the American Medical Association, preferably the Section on Pathology, at the next annual meeting, to be held in New Orleans, May, 1903. All applications should be accompanied by a full statement of the applicant's previous work and training and his present facilities, as well as by a sufficient indication of the proposed or partly completed work to enable the committee to decide upon the advisability of making a grant.

Hospital Benefactions.—NEW ORLEANS, LA.: The late A. C. Hutchinson, after enumerating and naming various beneficiaries in his will, has bequeathed the residue of his estate, said to amount to almost \$1,000,000, to the Tulane University, for the sole and exclusive benefit of its medical department. The object of this bequest is to create a fund to be used in increasing the efficiency of the medical department of the University as a medical school and to contribute to its usefulness in helping the sick and infirm. To further this purpose the fund thus created is to be used by the administrators of the Tulane University, under the direction and supervision of the medical faculty, for the purchase of ground and the erection of suitable buildings to be used in the establishment of a free clinic or dispensary and for a hospital which will include in its wards such a number of free beds as in the judgment of the faculty may be available within the limitation of the fund. It is also recommended that a part of the fund and interest shall be reserved for the purpose of maintaining a free clinic. Mr. Hutchinson requests that the structure be named after his late wife, Josephine. He has also bequeathed \$20,000 each to the Eye, Ear, Nose and Throat Hospital, St. Ann's Asylum, and the House

of Good Shepherd. **SOUTH BETHLEHEM, PA.:** The late Benjamin Barge, of Mauch Chunk, bequeathed \$5,000 to St. Luke's Hospital. **BOSTON, MASS.:** Under the will of the late Mrs. N. E. Rust the Children's Hospital receives \$5,000; the Massachusetts Eye and Ear Infirmary, Perkins Institute for the Blind, and New England Hospital for Women and Children each \$2,000; and the Addison Gilbert Hospital, Gloucester, Mass., \$10,000. About \$15,000 of the residuary estate is also left to this hospital. **CHICAGO, ILL.:** By the will of the late Rosa Buehler the German Hospital will receive \$1,000. **SOUTH BEND, IND.:** The relatives of the late Clem Studebaker have given \$50,000 to the Epworth Hospital, in accordance with the expressed desire of Mr. Studebaker. **NEW YORK CITY:** The late Anne Lawrence Coleman bequeathed \$5,000 to the babies' ward of the New York Post Graduate Hospital. **READING, PA.:** Col. G. S. Beck has given an entire new equipment, said to have cost several thousand dollars, to the surgical ward of the Reading Hospital.

EASTERN STATES.

The New Haven Medical Association will celebrate its one hundredth anniversary January 5 and 6, 1903. Dr. William Osler, of Baltimore, and Dr. Francis Bacon, of New Haven, will deliver commemorative addresses.

Tuberculosis Hospital.—It is proposed to build on Woodbridge Heights, Conn., a modern tuberculosis hospital, to be run on the fresh air system. The institution will consist of three cottages of eight rooms each, so arranged that the greatest circulation of air can be obtained. Physicians claim that the treatment of tuberculosis can be accomplished successfully in the dry altitudes of that State.

Eyes of School Children.—A systematic examination of the eyes of school children has been carried on in Boston during the past few years and statistics obtained of over 200,000 pairs of eyes. An analysis of these examinations shows that in the primary schools nearly all the children enter with normal eyes. In the higher grades 25% have become myopic, while in university life the percentage of myopia has increased from 60% to 70%, which shows that the number of nearsighted pupils increases from the lowest to the highest schools, and that the increase is in direct proportion to the length of time devoted to the strain of school life.

NEW YORK.

Genuine Bubonic Plague.—Dr. William H. Park, bacteriologist to the Department of Health, has made his report relative to the three sailors who were detained at Swinburne Island some days ago, suspected of having the plague. The report confirms the suspicion, and states that all are victims of true bubonic plague.

Treatment of Trachoma.—The Bellevue and allied hospitals have established a clinic for the treatment of trachoma. It appears that many children have been excluded from school on account of the disease, and the various hospitals having facilities for treating it are very much overcrowded. A ward is provided and patients kept over night and longer if necessary.

PHILADELPHIA, PENNSYLVANIA, ETC.

Muhlenberg Hospital.—The corner-stone of the new Muhlenberg Hospital, to be erected in Plainfield, N. J., was laid recently. The new buildings will cost \$125,000.

The University of Pennsylvania Hospital is to be enlarged and improved. It is proposed to spend \$300,000, and it is estimated that when the alterations are completed the capacity of the institution will be nearly doubled.

SOUTHERN STATES.

Baltimore Health Department Receives Medal.—A handsome bronze medal, the prize won by the Baltimore Health Department for having the best exhibition of health and mortality records shown at the Paris Exposition in 1900, has been received from Paris.

Removal of Marine Hospital Contemplated.—It is announced that a vigorous effort will be made to have Congress remove the marine hospital now located at Gallipolis, O., to Point Pleasant, W. Va. Advocates of the project contend that by placing the hospital at Point Pleasant, at the mouth of the Kanawha, it will be convenient to many more river men, and also that less expense and trouble will be entailed in reaching it.

To Stamp Out the Hook-worm Disease.—Dr. Charles Stiles, zoologist to the Department of Agriculture, has asked that literature bearing on the subject be freely circulated in the sand districts of the South, where the hook-worm disease prevails. He has shown that the disease, when properly diagnosed and treated, is very easily cured. A vigorous effort, with the cooperation of physicians in the districts, will be made to stamp out the disease.

WESTERN STATES.

Plague on the Gulf of California.—The Marine-Hospital and Public Health Service will send an expert to the Gulf of California, in Mexico, to investigate the reports regarding the appearance of plague among the Chinese immigrants there.

Hospital for Contagious Diseases.—At a conference of women's clubs in Chicago it was decided to erect a hospital for children suffering with contagious diseases. The project has been in contemplation for some time, and has been vigorously agitated during the past few weeks with the above results.

Nurses to Fight Tuberculosis.—The Visiting Nurses' Association, of Chicago, have organized a permanent tuberculosis crusade committee, consisting of medical and lay members. Literature will be disseminated and, so far as possible, hospital and sanatorium facilities extended and care provided for those suffering from the disease.

FOREIGN NEWS AND NOTES

GENERAL.

Miscellaneous.—**LONDON, ENG.:** Dr. A. E. Wright has been appointed pathologist and bacteriologist to St. Mary's Hospital, and has resigned his position as professor of pathology in the Army Medical School.—Sir Michael Foster will resign his seat in Parliament, in which he represents the University of London.

Mortality from Pulmonary Tuberculosis in Europe.—According to statistics recently published by the Imperial Health office in Berlin, the deathrate per million of population in the various countries is as follows: Russia has more than 4,000 deaths; Austria-Hungary and France more than 3,000; Sweden, Germany, Switzerland and Ireland, more than 2,000; Netherlands, Italy, Belgium, Norway, Scotland and England, more than 1,000 deaths.

Sleeping Sickness.—A report issued by the School of Tropical Medicine states that this disease, which is now devastating the Uganda, has already killed from 20,000 to 30,000 persons, and is spreading to new areas with increasing virulence. It is said that the only scheme thus far devised for the prevention and spread of the disease is the isolation of new cases. It is rumored that the Medical Commission sent to Uganda from London has discovered the germ and cause of the disease.

GREAT BRITAIN.

The London Hospital for Sick Children has received \$250,000 from Mr. William Waldorf Astor to build a new outpatient department, which is to be dedicated to the memory of his daughter, Gwendoline, who died recently.

Poor Hygiene.—A report from London relative to the period of greatest prevalence of diphtheria says that year by year the returns show a remarkable decrease in the number of cases during the vacation and of increase after the scholars reassemble. The report for 1899 indicates a fall in notified cases, between the ages of 3 and 13, of 34.7%, and upward of 13, 11.9%. On the other hand, in the four weeks after the holidays there was a rise of 44% and 14%, respectively, for these ages. It is remarkable that in children under school age the rise of disease is greatest during the holidays and less after the vacation. The medical officer of the County Council pointed out these facts in 1894, and the returns since then appear to confirm his contention. Defective ventilation and dust in public and utterly unsuitable, overcrowded rooms in private schools are quite sufficient to make them nurseries of diphtheria.

Eye Troubles in London Schools.—According to the *London Truth*, in April last the London School Board appointed eight ophthalmic surgeons to pay 200 visits each to schools under its control, with the object of testing the vision of the scholars. They have submitted an account of their work up to the beginning of the summer vacation, and their report shows 17,245 children have been examined, and serious visual defects have been discovered in 8% of the boys and 11% of the girls, the proportion being about equally maintained throughout school life, though the percentage varies enormously in different districts, being small in the better-class districts and greater in the poorer. The work done, however, does not end with the production of statistics. Children with subnormal vision have been supplied with a green advice card on which treatment is recommended, while those with bad sight are given red cards to take home, giving instructions as to treatment. Unfortunately, the appointment of eight oculists seems inadequate under such circumstances, for, at the present rates of progress, five years will have elapsed before all the children will have been examined.

CONTINENTAL EUROPE.

Apparatus for Taking Temperature of Fever Patients.—According to a recent report, a curious medical device is in use in the Paris hospitals. It is a little apparatus which is put under the arms of the fever patient, and is so constructed that when the temperature reaches a dangerous height a bell rings.

Teeth of School Children.—A dentist of Germany states that out of 5,300 school children examined, only 4.37% had sound teeth.

Women Physicians in Paris.—Of the 3,600 physicians now established in Paris, 57 are women. No woman physician has as yet been rewarded with the Cross of the Legion of Honor, but one midwife, Madame Gross, holds this coveted order. It was conferred upon her for gallant conduct during the Franco-German war.

Increase of the Opium Habit in France.—The prevalence of opium smoking and opium eating throughout France, and the rapid increase of the number of victims, which in some of the cities may be numbered by thousands, has led the government to propose placing on this drug an absolutely prohibitive import tariff. In Marseilles and Toulon the habit is said to be especially general, there being whole streets where opium dens are found in every house, with men, women, and children passing hours under the influence of the drug.

OBITUARIES.

Edward Strong, a retired physician of Newton, Mass., died December 28, aged 78. He practised in Boston, Springfield and Philadelphia. He was for many years in charge of the bureau of vital statistics in the office of the Secretary of State, and was a recognized authority on this subject.

James F. McCone, of San Francisco, Cal., December 7, aged 31. He was graduated from the University of California, San Francisco, in 1892, and was a member of the American Medical Association.

S. N. Landis, of Boston, Mass., December 25, aged 73. He was graduated from the American College of Medicine in Pennsylvania and the Eclectic Medical College of Philadelphia in 1854.

John B. Crombie, of Allegheny, Pa., December 22. He was graduated at the University of Maryland School of Medicine, Baltimore, in 1883, and was a Founder of *American Medicine*.

Thomas R. Veazy, of Milan, Ind., died in Pittsburg, Pa., December 10, aged 45. He was graduated from the Kentucky School of Medicine, Louisville, in 1885.

Dennis Nunan, in Guelph, Ont., December 12, aged 63. He was graduated from the University of Michigan in 1867, and Trinity Medical College, Toronto, in 1867.

Frank H. Green, in Homer, N. Y., December 7. He was graduated from the Syracuse (N. Y.) University in 1882, and was a coroner of Cortland county, N. Y.

William F. Penwarden, of Grand Rapids, Mich., December 27. He was graduated from the Bellevue Hospital Medical College in New York in 1883.

William W. Miller, of Pittsburg, Pa., December 14, aged 36. He was a graduate from the Western Pennsylvania Medical College, Pittsburg.

William B. Lindsay, of Strathroy, Ont., December 9. He was graduated from the University of the Victoria College, Cobourg, Ont., in 1869.

George M. Van Dyke, in West Newton, Pa., December 13, aged 44. He was graduated from the Jefferson Medical College, Philadelphia, in 1888.

Joseph Adolphus, in Atlanta, Ga., December 9, aged 88. He was graduated from the Pennsylvania Medical College, Philadelphia, in 1849.

Alfred J. French, in Lawrence, Mass., December 1, aged 79. He was graduated from the Vermont Medical College, Woodstock, in 1848.

John F. Hammond, in Berlin, Md., December 6, aged 72. He was graduated from the Jefferson Medical College, Philadelphia, in 1852.

D. B. Hall, of Ithaca, Mich., December 22, aged 75. He was a graduate of the medical department of the University of Michigan.

John McKinley, in New Wilmington, Pa., December 12, aged 67. He was a graduate of the Jefferson Medical College, Philadelphia.

Josiah W. Lash, of Chillicothe, Ohio, December 12, aged 50. He was graduated from the Columbus (Ohio) Medical College in 1878.

James Bartlett, at San Antonio, Tex., December 13. He was graduated from the University of Louisville (Kentucky) in 1878.

Edmond M. Landis, of Chicago, Ill., December 14, aged 56. He was graduated from the Rush Medical College, Chicago, in 1875.

Benjamin Benoit, in Lowell, Mass., December 7, aged 55. He was graduated from the New York University (New York) in 1877.

John W. Gaston, of Troup, Tex., December 4. He was graduated from the Kentucky College of Medicine, Louisville, in 1890.

William M. Fulkerson, in Ingleside, N. Y., December 7. He was graduated from the New York University (N. Y.) in 1881.

Edward D. Wright, in Nashville, Tenn., December 9, aged 55. He was graduated from the University of Tennessee in 1882.

George B. Beeler, of Baltimore, Md., December 23, aged 49. He was graduated from the University of Maryland in 1876.

E. B. Davis, of Kirby, Ohio, December 12. He was graduated from the Western Reserve University, Cleveland, in 1881.

C. E. Stevens, of Baldwinville, N. Y., December 26, aged 35.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

PHYSICIANS' TOTAL ABSTINENCE MANIFESTO.

To the Editor of American Medicine:—It will be new to many medical men to learn that three times during the last half century medical manifestos have been issued giving the opinion of physicians on alcohol. The first was issued in 1839, and was signed by 86 persons. The second in 1847, and was signed by 2,000 physicians, and the third appeared in 1871, with the signatures of over 4,000 physicians, including the names of many leading physicians in all parts of the world. A fourth declaration of opinions is now being circulated for signatures, and reads as follows:

The following statement has been agreed upon by the Council of the British Medical Temperance Association, the American Medical Temperance Association, the Society of Medical Abstiners in Germany, and leading physicians in England and on the Continent. The purpose of this is to have a general agreement of opinions of all prominent physicians in civilized countries concerning the dangers from alcohol, and in this way give support to the efforts made to check and prevent the evils from this source.

In view of the terrible evils which have resulted from the consumption of alcohol, evils which in many parts of the world are rapidly increasing, we, members of the medical profession, feel it to be our duty, as being in some sense the guardians of the public health, to speak plainly of the nature of alcohol, and of the injury to the individual and the danger to the community which arise from the prevalent use of intoxicating liquors as beverages.

We think it ought to be known by all that:

1. Experiments have demonstrated that even a small quantity of alcoholic liquor, either immediately or after a short time, prevents perfect mental action, and interferes with the functions of the cells and tissues of the body, impairing self-control by producing progressive paralysis of the judgment and of the will, and having other markedly injurious effects. Hence alcohol must be regarded as a poison, and ought not to be classed among foods.

2. Observation establishes the fact that a moderate use of alcoholic liquors, continued over a number of years, produces a gradual deterioration of the tissues of the body, and hastens the changes which old age brings, thus increasing the average liability to disease (especially to infectious disease), and shortening the duration of life.

3. Total abstainers, other conditions being similar, can perform more work, possess greater powers of endurance, have on the average less sickness, and recover more quickly than non-abstainers, especially from infectious diseases, while they altogether escape diseases specially caused by alcohol.

4. All the bodily functions of a man, as of every other animal, are best performed in the absence of alcohol, and any supposed experience to the contrary is founded on delusion, a result of the action of alcohol on the nerve centers.

5. Further, alcohol tends to produce in the offspring of drinkers an unstable nervous system, lowering them mentally, morally, and physically. Thus deterioration of the race threatens us, and this is likely to be greatly accelerated by the alarming increase of drinking among women, who have hitherto been little addicted to this vice. Since the mothers of the coming generation are thus involved the importance and danger of this increase cannot be exaggerated.

Seeing, then, that the common use of alcoholic beverages is always and everywhere followed, sooner or later, by moral, physical, and social results of a most serious and threatening character, and that it is the cause, direct or indirect, of a very large proportion of the poverty, suffering, vice, crime, lunacy, disease, and death, not only in the case of those who take such beverages, but in the case of others who are unavoidably associated with them, we feel warranted, nay, compelled to urge the general adoption of total abstinence from all intoxicating liquors as beverages as the surest, simplest, and quickest method of removing the evils which necessarily result from

their use. Such a course is not only universally safe, but is also natural.

We believe that such an era of health, happiness, and prosperity would be inaugurated thereby that many of the social problems of the present age would be solved.

This declaration has already received the signatures of over 1,000 physicians in all parts of the country. I have been appointed chairman to present this manifesto to American physicians for their endorsement. I should be very glad to receive the name, title and address of any physician who is willing to aid by his signature to correct public sentiment and assist in the prevention of one of the great evils of the age. This is purely a scientific effort for the purpose of having a general consensus of opinion of the leading physicians of the world, and it is assumed that American physicians are equally enthusiastic and prompt to lend their signatures to this statement as in the wine-drinking countries of Europe. A postal card with address and title is earnestly solicited from every medical man who would like to be represented in this great movement for a clearer comprehension of the subject. Address
T. D. CROTHERS, M.D.,
Hartford, Conn.

THORACENTESIS FOLLOWED BY ALBUMINOUS EXPECTORATION.¹

BY

WM. CLIFTON DREIN, M.D.,
of Philadelphia.

I am indebted to my late chief, D. D. Stewart, for permission, to report the following case, which occurred at the Episcopal Hospital during his service. It is reported at the request of David Riesman,² whose recent exhaustive article on the subject leaves but little for me to say, except to report the case for record. I believe it is the only fatal case of this rare condition thus far reported in America.

J. S., aged 54, a ship caulker, was admitted to the Episcopal Hospital 11 a.m., January 29, 1902, and died 1.10 a.m., January 30, 1902. Diagnosis: pleural effusion.

Family History.—Parents both died of senility at advanced ages. One sister died in infancy. Two sisters and one brother are living and well.

Personal History.—In childhood he had measles, chicken-pox, mumps, and scarlatina. He had malaria while in the South in 1877 and 1890. He had rheumatism, but never severe enough to keep him from his work. He had diarrhea off and on since last summer. He has never noticed any edema.

Present Illness.—About 12 days ago he noticed a slight soreness at the left apex, which he thought to be rheumatism due to exposure while at work. Eight days ago he first noticed that he was slightly short of breath, and this symptom has steadily increased. He was able to continue at his work until one hour before admission, when the dyspnea became so severe that he had to stop. He walked from the shipyard to the hospital, but had to sit down and rest frequently on the way.

Examination on Admission.—He is a stout, well-nourished man, appearing to be a few years younger than age given. He has no pain or soreness in any region, but complains of a feeling of great oppression in the chest. Bowels have been regular for the past week, and he says he has been passing a normal quantity of urine. Dyspnea is very marked, all the accessory muscles being brought into action; expression is anxious; lips cyanosed; tongue slightly coated and tremulous; slight cough; no expectoration; no edema present. Right chest is clear, except for accentuated breath sounds. Left chest anteriorly; resonance impaired to apex. Dulness begins at the lower border of the third rib and shades off to absolute flatness at the base. Posteriorly, there is flatness at the base, and dulness to the midscapular region. Dulness is slightly movable. Breath sounds and tactile fremitus are absent at the base. There are distant breath sounds at the upper limit of dulness and harsh breathing at the apex. The heart is displaced to the right, and the apex is not palpable. Sounds are best heard one inch to the left of the sternum. No murmurs could be elicited. Abdomen is negative. Temperature is 99°, pulse 100, respirations 40. After being put to bed the patient seemed more comfortable. He was seen by Dr. Stewart who, after confirming the diagnosis, ordered thoracentesis. At 4.45 p.m. thoracentesis was done with a Potain-aspirator. The needle was introduced in the seventh interspace in postaxillary line, and 1,620 cc. of clear straw-colored fluid withdrawn. The patient stood the operation well, and did not cough during the whole procedure, but

coughed some after the needle was withdrawn. The fluid had a specific gravity of 1,020, and coagulated into a solid mass on boiling. There was no blood in it. At 7.30 p.m. it was found the patient had been fairly comfortable, with the exception of a slight, dry cough, until 20 minutes before, when he had a severe paroxysm of coughing with intense dyspnea, followed by the expectoration of about half an ounce of frothy, straw-colored fluid, resembling that obtained from the pleural cavity. The cough rapidly became almost continuous, and the dyspnea so severe that he had to sit up in bed. He has expectorated about two ounces in the last 20 minutes. Large gurgling rales are heard all over the left chest. There are no signs of pneumothorax. Temperature is 100.6°. Pulse 120, and very weak. Dry cups followed by wet ones were applied without relief and free stimulation and morphin ordered. At 10 p.m. the dyspnea had increased, and edema had spread to the right lung. He fills a sputum cup with expectoration every few minutes. Sputum on boiling coagulates into a solid mass. Temperature is 100.6°. Pulse 130. At 12 p.m. he will not respond to stimulation. Extremities are cold, skin clammy, pulse hardly perceptible. Fluid is gushing from the mouth and nostrils in a steady stream. At 1.10 a.m. the patient died. The relatives refused to allow a postmortem examination.

The usual cause given for this condition is either a too rapid or excessive withdrawal of fluid which does not permit a correspondingly rapid expansion of the lungs, and the veins having lost their tone from compression are unable to keep up the balance between the general circulation and the active congestion that ensues, consequently a leakage into the air vesicles occurs. This condition has been very aptly called "congestion by recoil." In the present case the fluid was withdrawn slowly, the patient allowed frequent rest, and the amount, although large, does not seem to me excessive, when we consider that he had no alarming symptoms during the tapping, and did not cough until the needle was withdrawn. Rosenbach¹ states that edema of the lungs has been observed after simple puncture without aspiration. An interesting feature of the case is the length of time that elapsed before the onset of expectoration—about two hours. According to Riesman, this is very rare, expectoration usually coming on within the first half hour after thoracentesis, and rarely, as in his case, during it. Owing to an unfortunate mistake, the fluid was thrown away before any chemical analysis could be made, except the simple boiling test applied to it while the patient was still alive.

SOME OF THE SURGICAL USES OF CLOVE OIL.

BY

W. A. BRIGGS, M.D.,
of Sacramento, Cal.

My earlier impressions of the value of clove oil in surgery and obstetrics, communicated to the California Northern District Medical Society in October, 1900, have now been confirmed by an experience extending over a period of nearly two years and embracing a large number and variety of surgical conditions. I shall briefly report the method and results of the use of clove oil in the various conditions, surgical as well as obstetric, in which I have employed it:

1. Disinfection of hands of surgeon, obstetrician and nurse: (a) Minimize danger of infection by wearing rubber gloves in all septic cases; (b) should the hands be accidentally or unavoidably infected, cleanse and disinfect them at once; (c) keep the skin smooth and soft and free from cracks and abrasions; (d) immediately before an operation file the nails short, clean thoroughly the subungual spaces, cleanse the hands, forearms and arms well above the elbows with a soft brush, tincture of green soap, and the very free use of warm sterile water; dry the hands and arms with a sterile towel and apply clove oil freely and thoroughly with soft brush to the entire surface; fill the gloves with sterile water and "float" them on without removing the oil.

This method is simple, expeditious, efficient, and possesses the advantage, which in my opinion is very great, of maintaining a positively aseptic condition of the hands during the entire operation.

2. Disinfection of operative field: Cleanse the surface thoroughly with soap, water and a soft brush; dry with sterile

¹ Read before the Northern Medical Association of Philadelphia, December 12, 1902.

² American Journal of Medical Sciences, April, 1902.

¹ Nothnagel's Encyclopedia of Practical Medicine.

towel; rub in with soft sterile brush a mixture of equal parts of clove oil and lanolin; cover with sterile gauze; repeat this process with pure oil just before the operation; cleanse well with ether. If the operation must be done at once cleanse with soap, water and soft brush, dry with sterile towel, rub clove oil well in with a soft brush and wash it off with sterile gauze and ether.

3. The need of a positive, nonirritant and continuous antiseptic in the treatment of infected wounds, whether surgical or accidental, is felt by every surgeon. For this purpose I know of nothing better than clove oil, variously combined or diluted. I have now used it in some 20 accidental wounds, lacerated and contused. In all but three of these primary union took place throughout. These three cases are of exceptional interest, partly because as exceptions they prove the rule.

The first of the three was the case of B., a millhand, who thrust the palm of his left hand against a wide set circular saw. The saw teeth entered just above the carpus, severing both the radial and ulnar artery, tearing out the flexor tendons from their muscular origins and excavating the carpus and metacarpus. Both arteries were tied, the ulnar and the radial; the second finger, the second metacarpal bone, fragments of the carpal bones and of other lacerated tissues were removed and the extensor tendons of the index finger and thumb were sutured as well as possible to the lacerated muscles of the corresponding side of the forearm. The wound was thoroughly cleansed with 20% clove oil, of which an excess was left in the wound. The wound was closed with difficulty, on account of the loss of tissue, and sutured with considerable tension. Notwithstanding this, however, primary union was complete except at the site of the gauze drains at the upper and lower angles. Unfortunately, on account of the tension drainage was not perfect and an abscess developed and was drained through the palm. Aside from this nothing occurred to mar the recovery, and a very useful hand resulted.

The second case was that of a young man whose hand had been caught in the gearing of an elevator; the little finger was amputated at the metacarpophalangeal joint, and the skin of the ulnar aspect of the hand was badly lacerated by the cogs. The wound, after careful disinfection with 20% clove oil was dressed in the same oil, and healed by first intention, excepting three pieces of skin that were practically gouged out. Enough of these pieces retained their vitality to prevent the considerable scarring that would have resulted from their sacrifice.

The third case was that of a fleshy girl of 10, who fell from a fence, catching the thigh on the head of a projecting nail and making a wound $\frac{3}{4}$ inches in length, and from $\frac{1}{2}$ to 1 inch in depth. The edges were badly lacerated, but after disinfection were brought together without trimming. The stitches were removed on the third day, when union seemed to be perfect, except at two or three points where narrow strips of lacerated skin had necrosed. Two days later, in consequence of a fright, the patient made a sudden and severe muscular effort and separated the edges of the wound, which then healed by granulation.

Punctured wounds should be thoroughly packed with gauze or absorbent cotton, saturated with pure clove oil. I have treated two nail wounds of the feet without any inflammatory reaction whatever.

4. I often pack abscess cavities, particularly when badly infected after evacuation, with gauze saturated with pure or diluted clove oil, and have had excellent results.

In obstetrics, rapid and perfect disinfection of the hands is imperative. Clove oil meets these requirements better than any other antiseptic I have used. Besides, by maintaining a positive and continuous aseptic condition, it reduces to a minimum the possibility of infection from the hands of the accoucheur.

5. One of the most useful applications of clove oil is as a dressing for the umbilical cord. Put dry and sterilized tapes, absorbent cotton, and rubber finger cot in pure clove oil, and have on hand sterilized scissors and hemostats. Tie the cord securely with tape an inch from the abdomen and sever it a half inch beyond; through an opening in the distal end of the cot, pass the jaws of the hemostat and seize the cord within an eighth of an inch of the body (leaving just room enough for the ligature); tie the proximal end of the cot firmly about the cord at its very end, being careful, of course, not to include the skin; withdraw the hemostat and insert in the cot a piece of absorbent cotton as large as a hazelnut, saturated with clove oil, and close the distal end of the cot with a ligature. Dress the enveloped cord by carrying it through several thicknesses of sterile gauze, which should be saturated with 30% clove oil in olive

or other indifferent oil, and folded over as in the usual dressing. Each day the gauze should be saturated with the same solution.

The advantages of clove oil for these purposes are these: 1. It is practically nontoxic. In an extensive experience I have never observed the slightest constitutional disturbance attributable to its influence. 2. Locally it is distinctly analgesic and powerfully antiseptic. Properly diluted, it is nonirritant or, in its purity, to the bare tissues, superficially escharotic, as may be desired. 3. It affords a quick, simple, and ready means of disinfecting the hands and of keeping them in an aggressively antiseptic state during the progress of operation. The skin at first is somewhat sensitive, but it soon acquires immunity, and thereafter remains in the best possible condition for surgical work.

BROAD LIGAMENT CYST OF LARGE SIZE OCCURRING DURING THE COURSE OF PREGNANCY; ITS REMOVAL FIVE WEEKS AFTER DELIVERY.

BY

LEVI JAY HAMMOND, M.D.,

of Philadelphia.

On April 18, 1902, Mrs. R. M. M., aged 22, consulted me at my office. This was the first time I had seen her, and she was then at full term of pregnancy. She gave the following history:

When three months pregnant she detected for the first time in the right pelvic region a freely movable growth about the size and shape of a lemon. This gave her no concern, as she supposed it was the natural enlargement of the uterus, and her mother, whom she consulted, thought likewise. Its rapid growth, however, which, by the end of the sixth month had reached the height of the umbilicus, entirely filling the right abdomen, and extending well into the flank, made the patient apprehensive. Her alarm was further increased as the uterus could also be readily outlined by her; abdominal palpation in her particular case being readily accomplished because of the thin walls and entire absence of fat. She weighed only 97 pounds, her height being 5 feet 7 inches. She consulted a physician, who told her there was no reason for anxiety, as he believed her condition to be one of twin pregnancy. The tumor continued to grow rapidly, until by the eighth month it filled the entire right side of the abdomen and extended well to the left side, overlying a great part of the uterus.

She consulted another physician, who promptly recognized the presence of a growth, and advised her to be at once admitted to a lying-in hospital for treatment. This she did; but after remaining there a few days she decided she would prefer to be treated at home, and left the institution.

On the following day, accompanied by her mother, she called at my office. Examination disclosed the fact that she was then in labor, the cervix being dilatable to the extent that it would readily admit the index and middle fingers. Pelvic measurements taken at this time showed a normal pelvic outlet. The tumor was not difficult to outline separately from the uterus, palpation of it being rendered much easier by the fact that the uterus was then in a state of contraction. The growth, as before stated, filled the entire right side of the abdominal cavity, and fluctuation could be readily elicited. A diagnosis of ovarian or broad ligament cyst was not difficult to decide upon.

As the patient was already in labor and the tumor did not encroach upon the birth track, nor with the body of the uterus, it was decided that she should return home. Here, after the cervix was dilated, she was placed under ether and delivered by forceps of a perfectly healthy female child at full term. The uterus promptly retracted and remained so. There were no untoward symptoms following labor for about 48 hours, when I was hastily summoned. I found the pulse 140, and great pallor with marked blanching of the conjunctiva and lips. The uterus was still firmly contracted, there had been no post-partum hemorrhage, and the cyst was apparently not ruptured. After application of the usual restoratives, both hypodermically and locally, she began to rally, and continued to a perfectly normal convalescence.

Just what was the cause of this sudden shock was not apparent to me at the time, nor has it been since. A possible explanation for it, however, may have been a rupture of a small cyst, or a separation of the cyst wall from either adhesions to the intestines, or to the parietal peritoneum. There was no infection whatever. Temperature at no time during the entire lying-in period was above 99°.

Five weeks after delivery I opened the abdominal cavity and removed a broad ligament cyst (paroophoretic). There were considerable adhesions extending throughout and along the parietal peritoneum as high as a level with the umbilicus. It is possible that the presence of these adhesions may offer an explanation as to the cause of the profound systemic shock 48 hours after delivery. There was no twisting of the pedicle.

ORIGINAL ARTICLES

SOME CARDIORESPIRATORY PHENOMENA REVEALED BY THE RÖNTGEN RAYS.

BY
ALBERT ABRAMS, A.M., M.D.,
of San Francisco, Cal.

In this contribution I intend to discuss certain facts which have been elaborated as the result of personal observation. The rays have been epoch-making in exploding many statements in physiology which have heretofore been regarded as apodictic. The diaphragm does not flatten with each inspiration; on the contrary, its curve is always maintained unaltered, and in its excursions it plunges piston-wise up and down. The lines of the diaphragm on both sides are not on the same niveau, and the excursions of the diaphragm are slightly greater on the left than on the right side. The heart is not stationary during the phases of respiration, but with each inspiration there is a decided downward movement of the organ following the inclined plane of the central tendon of the diaphragm. Physiologists have taught that the central tendon is capable of only limited movement in respiration, hence the heart in its respiratory mobility is likewise restricted. Campbell¹ asserts that when the pulsating heart is felt in the epigastrium after deep inspiration, it is not due to an actual descent of the heart but to the lifting upward of the thoracic cage over the heart. The aphorism of Fowler, "The position of the apex beat is the key to the diagnosis of nearly all the affections of the heart and chest" is no longer infallible. The rays prove that the so-called apex beat may be palpated at a point remote from the anatomic apex, hence the impulse felt may be due to the impact of the ventricle against the chest wall. Finlayson² and others taught that the disappearance of the apex beat, when the breath is held after a deep inspiration, is caused by a dilated right ventricle pushing the left aside. My observations show that this maneuver causes no dilation of the right ventricle nor dislocation of the left. The real explanation of the phenomenon is that the triangular space in front of the heart widens and lengthens in deep inspiration and causes a slight recession of the apex beat from the chest wall. We must frankly concede that the rays have not fulfilled our expectations in cardiac diagnosis and, beyond demonstrating the fallibility of our methods of percussion, they have only rendered us a modicum of service.

THE POSITION OF THE HEART.

The site of the heart is normally influenced by attitude, respiration and the position of the diaphragm. Adhesions modify the amplitude and direction of physiologic dislocation.

Attitude.—In attitudinal dislocation my measurements show that in the left lateral posture the heart moves on an average 2.6 cm. to the left and 1.1 cm. upward; in the right lateral posture 1.5 cm. to the right and 0.5 cm. upward. In children suspended by the feet I found only slight heart dislocation which was toward the median line. As a rule attitudinal dislocation was less evident in children than in adults, and less marked in obese individuals than in lean ones. In the recumbent posture the triangular space behind the heart is still in evidence, a fact which would tend to disprove the theory of Kingscote³ that the predominance of asthmatic seizures at night was caused by this posture which enabled a dilated heart to impinge on the vagi.

Respiration.—The heart descends during inspiration and ascends during expiration. During inspiration the silhouette of the heart becomes more defined, its transverse diameter diminishes and the heart inclines slightly toward the right. I have observed that repeated deep

inspirations will eventually darken the luminous area of the lungs and concurrently cause obscuration of the heart. This is probably dependent on the fact that repeated inspirations excite the respiratory center to send out expiratory impulses, thus putting the lungs in the position of expiration. During inspiration the cardiac pulsations show less amplitude than in expiration, a fact which may be referred to the stretching of the pericardium during inspiration. There is no reason to believe that an x-ray study of the heart pulsations supersedes in value the conventional physical signs, unless it is in the differential diagnosis between an enlarged heart and a pericardial effusion. In the former the pulsations may be discerned, but not in pericardial effusion.

Aneurysm.—As the pericardium is reflected on to the greater vessels at the cardiac base, there is during forced inspiration considerable stretching of these vessels; hence the area of an aneurysmal shadow would be diminished in inspiration and increased in expiration. Cardiac position is maintained by pulmonary suction. If this suction is diminished on one side, the heart will be drawn to the opposite side by predominant suction. This physiologic fact refers in a measure to the great bloodvessels and may be employed in a skiascopic study of suspected aneurysm. Diagnosis is based on such a multitude of little things that anything, however insignificant, is worthy of regard. In my initial investigations with the rays I frequently committed the error of making a diagnosis of aneurysm when it did not exist. Such errors, in the main, emanated from a failure to recognize the occasional anomalous course of the aortic arch. Even now I would hesitate to diagnose aneurysm with no other aid than the rays. Sagittal chest illumina-

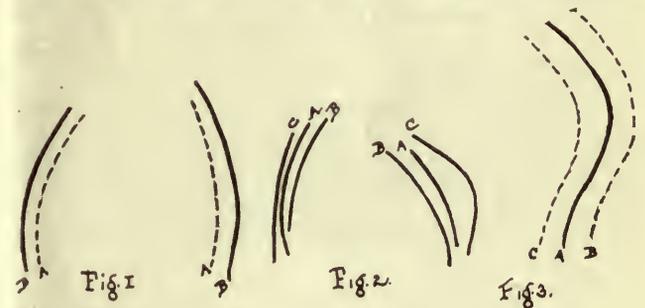


Fig. 1.—Shows effect on heart after the Valsalva experiment: A, heart area after, and B, heart area before the experiment.
Fig. 2.—Area of the heart as affected by respiration: A, area in quiet respiration; B, area after forced inspiration, and C, area after forced expiration.
Fig. 3.—Tracing from fluoroscope of an aneurysm: B, outline after Müller's, and C, outline after Valsalva's experiment.

tion shows a dense shadow caused by the sternum and spine; projecting from this shadow is a smaller round one, with a slight convexity outward, located in the second left interspace which belongs to the arch and descending aorta. Now, this small shadow may be brought into greater prominence either on the anterior or posterior chest surface by firm pressure sufficient to immobilize the right thorax. Such compression brings into play the unopposed suction of the left lung which tugs on the heart and bloodvessels, drawing them toward that side. I find that by oblique illumination of the chest, *i. e.*, by directing the rays from the posterior left side to the anterior right side of chest, the aortic arch may be brought out most distinctly. By this maneuver the heart silhouette appears suspended in space with a dark pulsating cord (ascending arch and descending aorta) rising from it. Two maneuvers in respiration are available in diagnosis, *viz.*, Valsalva's and Müller's experiments. The former consists in conducting forced expiration with closed mouth and nostrils, which so raises intrapulmonary pressure that the great bloodvessels and heart are firmly compressed. The effect of

such pressure on the heart may be seen in the accompanying fluoroscopic tracing. In Müller's experiment a vigorous inspiration is taken with mouth and nostrils completely closed. This maneuver diminishes the negative pressure on the heart and bloodvessels. If a shadow is a suspected thoracic aneurysm, the Valsalva experiment will diminish and the Müller experiment increase the area of the shadow.

POSITION OF THE DIAPHRAGM.

The area of cardiac dulness, as the rays show, is influenced by the position of the diaphragm; and per-

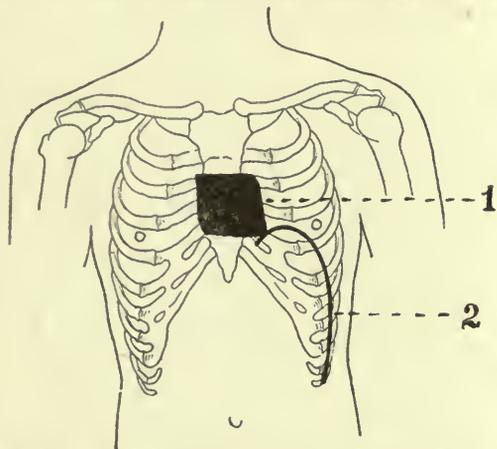


Fig. 4.*—Effect of stomach insufflation on the heart: 1, radioscopic appearance of the heart, and 2, outline of the fundus of the stomach

cussion, however skilful, often yields erroneous results. When the diaphragm is high, the long axis of the heart becomes more horizontal than when it is low, hence the transverse diameter of the heart is greater during expiration than inspiration.

Dislocation of Accommodation.—We have long recognized the almost intelligent function of muscles whether displayed in fixing a diseased joint or spine or in protecting an inflamed serous membrane. Now the midriff will become fixed in the deepest inspiration when if for any reason there is any encroachment on the respiratory area

length of the aorta. If we make firm compression of the upper thorax in a child we may note the immediate descent of the heart. Dislocation of accommodation is observed in thoracic aneurysm if unaccompanied by aortitis. Cardiac dislocation in thoracic aneurysm is usually regarded as a result of pressure, but the fact is, it occurs in early aneurysm before the heart is capable of mechanic dislocation. In health during deep inspiration there is usually a free space between the heart and diaphragm, and the heart does not rest on the latter but is supported by the bloodvessels. In aortitis and aneurysm associated with anginous signs, the diaphragm

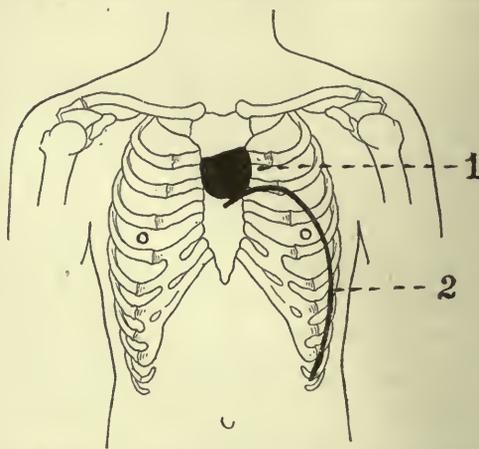


Fig. 5.*—1, radioscopic appearance of the heart after administration of a Seidlitz powder; 2, outline of the fundus of the stomach.

lies high, as if to support the heart and diminish traction on the bloodvessels. It is only a question as to whether pain or dyspnea predominates in disease of the heart and bloodvessels; if the former, the heart lies high, if the latter, it is low.

THE STOMACH AND COLON ON THE POSITION OF THE HEART.

I have referred elsewhere⁴ to the influence of a dilated stomach on the position of the heart. The accompanying illustrations show how easily the heart may be

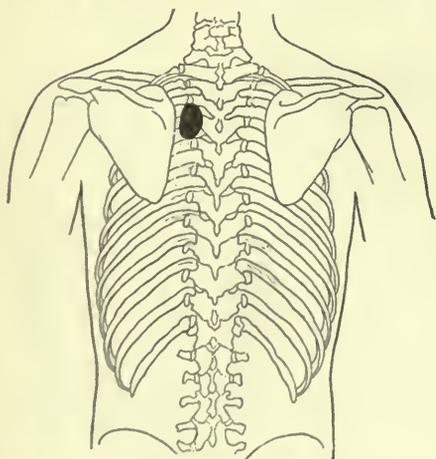


Fig. 6.*—Patch of dulness in dislocation of the heart upward. Patient in erect position.

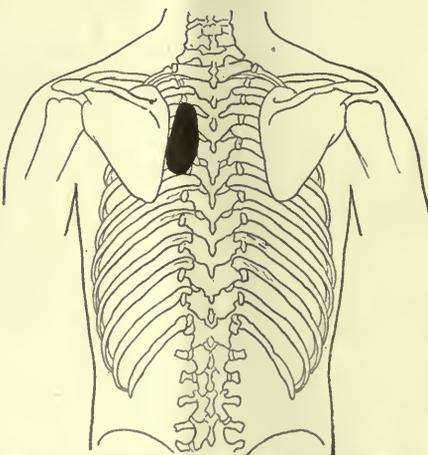


Fig. 7.*—Same case. Patient leaning backward.

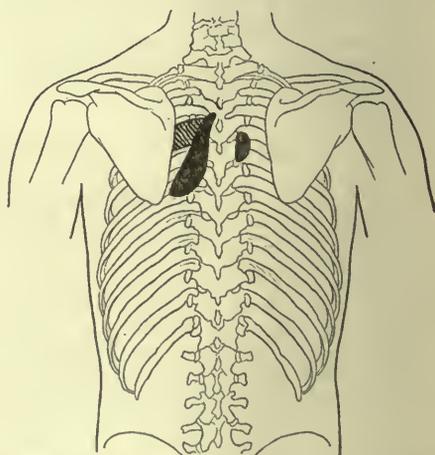


Fig. 8.*—Black areas, shadows cast by normal heart. Shaded area, shadow of dislocated heart.

in the upper thorax. With this descent of the diaphragm there is also a downward luxation of the heart, which I will refer to as the dislocation of accommodation. In old age this form of dislocation is present, and the low position of the diaphragm and heart is a mere accommodation phenomenon to compensate for the increased

dislocated by artificial distention of the stomach. It is unnecessary to descant on the practical value of this observation. Heart dislocation from stomach dilation is associated with a circumscribed area of dulness in the left interscapular region. Over this area bronchial respiration is heard. When the patient leans forward dulness and bronchial breathing disappear, to reappear when the erect attitude is resumed.

* Figs. 4, 5, 6, 7, 8, 11 and 12 are reproduced from blocks received through the courtesy of the New York Medical Record.

Leaning backward increases the area of dulness. The phenomena in question are produced by a dislocated heart compressing the lung, which fact is easily verified by the rays.

The foregoing syndrome may be reproduced synthetically by artificial distention of the stomach. An enormously distended heart may produce identical signs. Artificial insufflation of the colon is incapable of producing the same degree of cardiac luxation.

The Position of the Heart in Coughing and Laughter.—A cough, by alternately elevating and depressing the diaphragm slightly, does not materially influence the position of the heart, although in one patient the organ was forced upward nearly three inches. Laughter, on the contrary, by putting the diaphragm in the position of extreme expiration, causes a decided elevation of the heart. When laughter is paroxysmal the rays show the heart to bob up and down like a rubber ball, thus inducing a veritable heart massage. I can easily conceive the baneful effects of prolonged laughter in cardiac disease by inhibiting the return of the venous circulation and causing the disintegration of a thrombus in the heart chambers.

Amyl Nitrite.—The inhalation of this drug will intensify feeble cardiac murmurs, but ordinarily it is not serviceable in diagnosis, owing to the creation of cardio-muscular murmurs, which have no reality other than in the delirious state of the organ. To bring out aneurysmal pulsations while the rays traverse the chest, it is indispensable. During the inhalation of amyl nitrite, in a certain percentage of persons, the transverse diameter of the heart will become diminished. This drug is

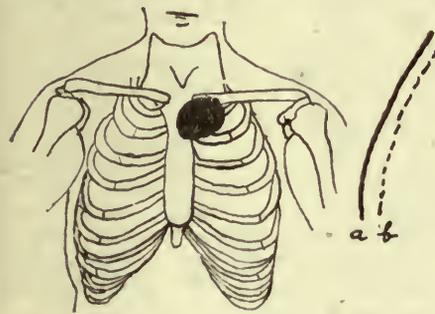


Fig. 9.



Fig. 10.

Fig. 9.—Dull area elicited after amyl nitrite inhalation. Fig. 10.—Action of amyl nitrite inhalation on the heart: A, area of heart before, and B, area after inhalation.

a specific in inhibiting the distress of angina pectoris, and if it reduces the cardiac area as the rays demonstrate, the theory of Heberden, that angina pectoris is a cramp of the heart muscle, must be wrong.

The theory of extreme tension of the ventricular walls in consequence of acute dilation seems to be corroborated by the action of the drug upon the heart. I have observed another phenomenon associated with the inhalation of amyl nitrite, and that is a limited patch of dulness which develops over the manubrium sterni, as seen in the illustration.

This patch of dulness may involve the entire manubrium and extend to the right as well as to the left side. The dulness in question is almost never reproduced after an immediate second inhalation of the drug. It is caused by a circumscribed collapse of lung. In some persons inhalation of the drug evokes dull areas in other chest regions, but the manubrium dulness is almost constant. The latter area of dulness may at once be dissipated by tapping the epigastrium, which provokes the counter lung reflex of dilation.

The Action of Rarefied and Compressed Air on the Heart.—I have sought to determine the modifying degrees of pressure of the external atmosphere on the heart by applying to the precordial region large cups

from which the air was exhausted. It could easily be observed while the rays were traversing the chest that the creation of a vacuum caused a decided dilation of the right cardiac auricle and ventricle, and that the cardiac area was restored to normal the moment such vacuum was removed. Similarly, increased pressure in the precordial region caused a recession of the cardiac area, likewise implicating the right chambers of the

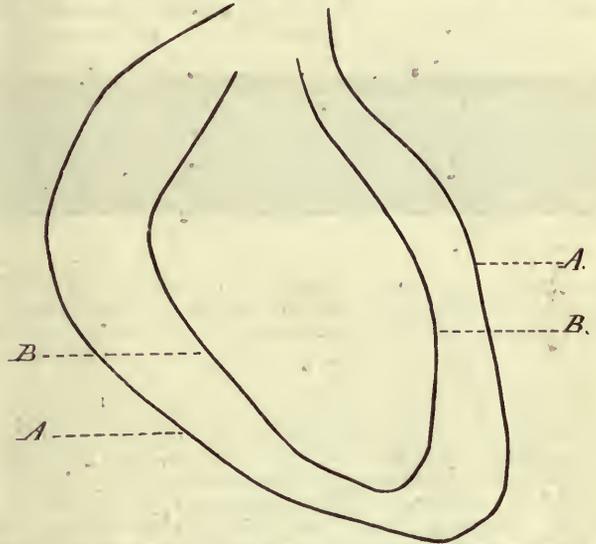


Fig. 11.*—Heart reflex in a boy aged 8. Duration of reflex, 2½ minutes.

heart, but the change in the cardiac area was not as great as in the previous experiment. These observations, elementary as they are, serve, nevertheless, as an index in determining the effects of altitude on the heart.

The Heart Reflex.—This phenomenon, first observed in 1896,⁵ consists essentially of myocardial contraction resulting from cutaneous irritation in proximity to the precardium. It can only be observed with the rays. The degree of myocardial recession varies. In some it is scarcely perceptible.

In a previous contribution⁶ I espoused the theory that the real factor involved in balneotherapeutics and mechanotherapeutics was not dependent on the baths and exercises as such, but to the cutaneous irritation provoked by these maneuvers and the resulting action

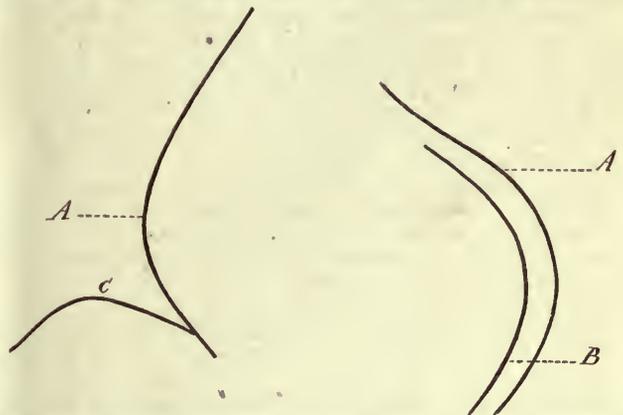


Fig. 12.*—Heart reflex in a boy aged 14. Duration of reflex, 55 seconds.

on the myocardium (heart reflex). Time has only strengthened me in this conviction. Since my original contributions on the heart reflex, I have studied it as an index to the condition of the myocardium, and find in brief that when the cardiac muscle is beyond restitution in myocarditis and valvular diseases the reflex cannot be elicited. Heretofore this reflex was only observed in the transverse cardiac diameter, but it may also be noted

in the sagittal diameter. The recognition of the heart reflex will often aid us in excluding the murmurs of a relative insufficiency. Here vigorous rubbing of the precardium will temporarily dispel the latter murmurs. One may elicit the heart reflex by irritation of more remote regions. I refer in particular to the nose. Some years ago⁷ I directed attention to the pulmonary neurosis of dilation which could be evoked in almost every healthy person by irritation of the nasal mucosa, and that such irritation was inoperative if the mucosa were

nance. The circumscribed dull area obtained by Cherchevsky corresponds precisely to that elicited by amyl nitrite inhalation. Dull areas may be obtained in other chest regions, especially in proximity to the sternum and spine if vigorous percussion is conducted. For this purpose, I use a large wooden mallet and a pleximeter of felt. The circumscribed dullness thus induced lasts but a few seconds but may be made to disappear at once by striking the epigastrium. Observed with the rays in a susceptible person, the phenomenon in



Fig. 13.

previously cocainized. Later⁸ I demonstrated that in persons suffering from asthma of presumable nasal origin, impaction of cotton in one or both nasal cavities would induce a typical asthmatic paroxysm. One may easily observe by aid of the rays that when ammonia is inhaled there is a decided recession of the cardiac ventricles (heart reflex), especially the left, and that this heart reflex may be more pronounced than when discharged through the skin of the precardium. Ether and chloroform produce a similar though less pronounced effect. With the nose closed, a similar though less pronounced effect of the vapors may be obtained, presumably by their action on the pharyngeal and laryngeal mucosa. In a few instances the vapors produced a veritable heart inhibition. I could observe no diminution in the intensity of the heart tones during the inhalation of the vapors, yet the accompanying sphygmogram shows a decided difference in the output of blood into the general circulation before and after the inhalation of ammonia. These observations suggest the wise expedient of cocainizing the nasal mucosa before using an anesthetic, and further suggest the cogent necessity of anesthetizing the pharyngeal and laryngeal mucosa.

In another communication⁹ I directed attention to inhibition of the heart as an aid in diagnosis. I then demonstrated the facility which certain persons possessed of inhibiting the action of the heart by voluntary contraction or stretching of the neck muscles.

During anesthesia, one may observe that this reflex act is accentuated, and there is no doubt, in my mind, that many a careless anesthetist has caused death by undue stretching of the neck during chloroform or ether anesthesia. The heart reflex may also be invoked by irritation of the gastric mucosa when the sponge of the gyromele is made to revolve against it. This fact may explain sudden death of gastric origin through reflex inhibition of the heart. The "vagus reflex" of May is practically the heart reflex. When the vagi are compressed and the heart observed by aid of the rays, there is an inhibition of the organ, retraction of the myocardium and lung distention.

The Lung Reflex of Contraction.—I wish finally to direct attention to the Cherchevsky¹⁰ sign of early arteriosclerosis. This author contends that in normal conditions the diameter of the aorta varies at different times. It becomes dilated if the region over the arch is struck with the percussion hammer, while it shrinks in size if the blows are struck in the epigastrium. In arteriosclerosis it is impossible to produce these variations in diameter. The author has misinterpreted the phenomena obtained by his maneuver. What he really elicits is a circumscribed lung contraction adjacent to the part struck on the chest by the hammer and the blow on the epigastrium merely causes the collapsed lung area to dilate, thus supplanting dullness by reso-

question is a most interesting study. After the blow is struck the adjacent lung area becomes gradually dark, showing that the air has been expelled from the lungs, whereas in a few seconds the lung area becomes bright again. This reflex cannot be obtained if the nasal mucosa has been previously cocainized nor if the skin is irritated over the lung area, for then the counter reflex of lung dilation is elicited. The phenomenon just described I have

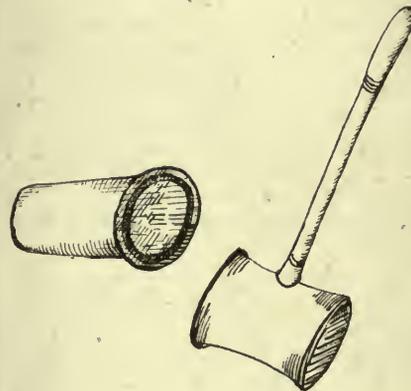


Fig. 14.—Mallet and pleximeter for eliciting the lung reflex of contraction.

called the lung reflex of contraction to distinguish it from a reflex described elsewhere¹¹ and which I will now specify as the lung reflex of dilation. The latter reflex is provoked by any cutaneous irritation, percussion of the epigastrium and the inhalation of irritating vapors. The lung reflex of contraction has the same value in diagnosis and therapeutics as the counter reflex, but I will reserve its consideration for a future contribution. Suffice it to say at this time that we must hypothesize two distinct functions of the vagus, one which will enable it to dilate and fibers which can contract the bronchioles. This is the only hypothesis which permits us to explain the lung reflexes. Aufrecht¹² has recently shown that the belief of only a circular layer constituting the musculature of the bronchi is wrong, and that by using the Biondi-Heidenhain stain a longitudinal muscular layer also exists. I contend, in

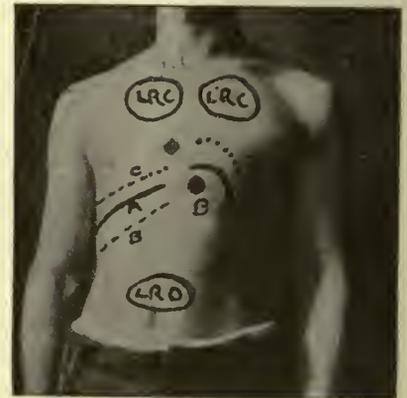


Fig. 15.—The lung reflexes of dilation and contraction: A, normal areas of heart and upper liver border respectively; LRD, region for eliciting lung reflex of dilation which, when struck, causes lung border to descend to B, and cover heart area almost to obliteration; LRC, regions for eliciting lung reflex of contraction which causes lung borders to recede to C.

view of this histologic fact, coupled with a knowledge of the lung reflexes and observations of asthmatics, that the theory of asthma must not alone be based on a spasm of the circular fibers of the bronchi but on an inability of the weaker longitudinal fibers to expel residual air imprisoned by the circular fibers. In support of this theory I recall my observations with amyl nitrite. The primary effect of inhalation of this drug is to augment lung volume and then to diminish it so that its efficiency in arresting paroxysms of asthma is actually dependent on contraction of the longitudinal no longer antagonized by the circular fibers. This action has its analog in the bladder musculature when, in consequence of a spasm of the sphincter vesicæ, the weak detrusor vesicæ cannot expel the urine, and ischuria spastica results.

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A CASE OF SUBACUTE COMBINED SCLEROSIS OF THE SPINAL CORD.

BY

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In 1887 Lichtheim¹ first described three cases of pernicious anemia, which, in addition to the usual symptoms of that disease, presented symptoms of affection of the spinal cord. From this time similar cases associated with pernicious anemia were described by others until in 1891 Putnam² described a number of cases presenting similar clinical nervous symptoms and pathologic changes which were not associated with pernicious anemia, but occurred in debilitated people past middle life, who, in most cases, had been subjected to some other form of toxemia, and in some of whom anemia occurred as a secondary symptom. Dana³ very shortly afterward reported a similar case.

A considerable number of like cases most frequently occurring in women have since been reported by various observers, which either occurred in connection with pernicious anemia or other toxic and cachectic conditions, notably the acute infectious diseases, prolonged diarrhea, lead-poisoning and possibly shock; prolonged worry and poor nutrition. In the latter group anemia as a secondary symptom is also usually but not always present. To this group of cases somewhat differing names have been given by different observers, *e. g.*, subacute combined sclerosis of the spinal cord; subacute combined degeneration of the spinal cord (Russell, Batten, and Collier⁴); and diffuse degeneration of the spinal cord (Putnam⁵). The first symptoms are usually marked paresthesia, especially of the lower limbs, slight weakness of the lower limbs and some ataxia. As the disease progresses the legs become more spastic and the deep reflexes increased, after a varying period the paralysis changes from a spastic to a flaccid one and the deep reflexes disappear; finally the arms become affected, wasting of the muscles with changes in the electric reactions develop, and more or less complete sensory paralysis appears. In the later stages also incontinence of the sphincters, edema of the lower limbs, bed-sores and subcutaneous hemorrhages and slight dementia have been noted. An eruption of herpes sometimes occurs as

an early symptom and remissions in the symptoms for a greater or less length of time are frequent. While the disease may be confounded with either neuritis or tabes dorsalis, it can be distinguished from the first by the absence of tenderness over the nerve trunks, and in the early stages the occurrence of a spastic condition of the legs, Babinski's reflex and the absence of muscular atrophy; from the second by the rapid onset, muscular weakness, presence of Babinski's reflex, absence of ocular symptoms and, if in the early stages, increased knee-jerks. The pathologic changes in the nervous system may be summarized as follows: A diffuse degeneration of the posterior and lateral tracts of the cord, chiefly in the dorsal and lower cervical regions, freedom from involvement of the gray matter and nerve roots, and varying, usually slight, degrees of degeneration of the spinal bloodvessels.

The prognosis is bad, death usually occurring in two or three years at the latest. The treatment is essentially tonic and supporting.

The following case, in which unfortunately an autopsy could not be obtained, is so typical clinically that it seems worthy of report:

Catherine K., aged 56, was admitted to the Philadelphia Hospital in June, 1901. She had previously been in the Woman's Hospital, and for her previous history here given I am indebted to Dr. F. P. Henry, under whose care she was. She was first admitted there in December, 1899. Nothing special is noted in her family or previous history until a year previous (December, 1898) to her admission to the hospital; at that time she had an attack of influenza. She apparently recovered from this but about a month afterward she began to experience a sensation of numbness and tingling in the hands. Two months later similar sensations appeared in the legs, which soon also "became stiff and she could not use them well." She remained in this state until her admission to the Woman's Hospital. It was then noted that she dragged one foot and raised the other unusually high. Her appetite was poor, vomiting occurred at times, and she was very weak.

Examination of the blood at this time showed red corpuscles, 1,239,000; white, not given; hemoglobin, 44%. About two weeks later it was as follows: Red, 1,257,584; white, 4,071; hemoglobin, 40%. After two months' treatment she was discharged improved, but returned in a week with a return of the symptoms. Examination of the blood then showed red corpuscles, 2,362,500; white corpuscles, 6,719; hemoglobin, 50%. She was again discharged in six weeks, her condition being much better, and she was not seen until the following October. Examination then showed her legs to be weaker, but she could walk alone; knee-jerks much increased; no ankle clonus; station good; sensation normal, and eyes normal. A systolic anemic murmur was heard at the apex. Her blood count was: Red, 1,464,000; white, 2,600; hemoglobin, 43%. It was also noted at this time that the "red cells were anemic, many being mere shells; five nucleated red cells were seen, and many large grayish cells with very pale-blue nuclei." On November 20 a herpetic eruption appeared upon the back and right side. On January 14, 1901, she was again discharged much improved, her blood count showing red cells, 2,000,000; white, 2,400; hemoglobin, 66%. It was also noted that the numbness of the feet was much lessened, but her gait was the same. The diagnosis made was pernicious anemia.

After leaving the Woman's Hospital she states that she got about fairly well, although her legs were "stiff," until April, when she fell while trying to walk; she then went to bed and there remained until her admission to the Philadelphia Hospital in June.

At this time the patient was pale, but appeared fairly well nourished. She complained of inability to walk, shooting pains in both legs in the course of the sciatic nerves, burning sensations in the feet, tingling sensations in the hands, and frontal headache.

Examination.—There was ability to slightly adduct the thighs and to flex and extend them upon the pelvis; there was also slight power of plantar flexion of the feet and of flexion and extension of the toes. As the patient lay in bed, both feet were markedly plantar flexed. All movements of the hands and arms could be performed, but they were much weaker than normal. The grip of the right hand measured 12, the left 19. All the muscles of the legs were atrophied, those of the right being more so. The muscles of the arms were flabby, and there was decided atrophy of the intrinsic muscles of the hands also more marked upon the right side. Owing to the electric appliances being out of order, electric examination of the muscles could not be made. There was no paralysis of any of the cranial nerves. The knee and Achilles jerks were absent. The plantar reflexes were very active, and a marked

Babinski phenomenon present upon both sides. All other reflexes, both superficial and deep, were absent. Fibrillary twitching of the muscles was not present.

The patient had incontinence of urine, due to retention. She said that she was conscious of a desire to urinate but was unable to perform the act. This trouble began a month before entering the hospital. The bowels were obstinately constipated.

Marked paresthesia of the limbs, as before mentioned, was complained of. There seemed to be slight hyperesthesia of the right thigh, and passive movements of the legs caused some pain. There was no tenderness of the nerve trunks. Hypesthesia was present in both legs below the knees; pain and temperature senses were lost in the same area. Over the thighs either heat or cold was felt as heat. Sensation upon the trunk and arms was normal. There was incoordination in the movements of the arms, the patient being unable to touch the end of the nose or bring the index fingers together either with the eyes closed or open. Passive movements of the fingers or toes were not recognized. She recognized a pencil held in the left hand, but could not recognize a coin or key held in either hand (astereognosis). The extremities were not cold or cyanosed. Over the first metatarsal-phalangeal joint of the left great toe there was an area of hyperemia about the size of a dime; on the heel was a similar area the size of a fifty-cent piece. On both legs were a number of small red spots which disappeared momentarily on pressure. Some edema was present about the ankle-joints. No disorder of any of the special senses was present. Her memory had failed markedly.

The urine was examined several times and with the exception of containing sugar was normal. Examination of the blood showed: Red, 2,275,000; white, 7,000. Hemoglobin was not estimated. Owing to circumstances beyond our control further examination of the blood was not made. Examination of other organs was negative. At the time of admission her temperature was 99° F., and pulse 80 to the minute.

The patient steadily grew worse. On July 17, 1901, it is noted that the feet were markedly edematous. Along the outer margin of the sole of the left foot there was a large area of hyperemia in about the center of which was a small patch of gangrenous skin. Similar areas were present over the left internal and the right external malleoli. On July 22 diarrhea and vomiting set in, which continued until her death on July 31. Three days before death her temperature, which had ranged from normal to 101°, rose to 103° and just before death was 106°. For several days previous to her death the patient lay upon her right side in a semistuporous condition with the thighs flexed upon the body and the legs flexed upon the thighs.

There would seem to be no question as to the proper diagnosis of this case. The paresthesia as an early symptom, slight ataxia, spastic paralysis, with increased reflexes and no sensory paralysis, becoming later transformed into a flaccid paralysis, and with the exception of the Babinski phenomenon, absent reflexes, ataxia, and sensory paralysis are very characteristic.

The question of etiology is of some interest. There has been some dispute as to whether these cases attendant upon pernicious anemia should be classified with those attendant upon other toxic and wasting conditions. Authorities in this country believe, what seems evidently to be the common sense view, that they should. It will be noticed that in the case just reported the woman was well until she had influenza, after which the symptoms of disordered nervous system very soon (one month) appeared. She was not seen at the Woman's Hospital, when the diagnosis of pernicious anemia was made, until one year afterward. That she had pernicious anemia at that time there can be no question, the diagnosis having been made by a distinguished hematologist. While we cannot be absolutely certain, it would seem probable from the history that the degeneration of the spinal cord was caused by the toxins of influenza, and that the pernicious anemia was caused also by the same poison. A somewhat similar case in a woman in whom pernicious anemia and the spinal symptoms appeared, after an attack of grip, is mentioned by Putnam,⁶ to show that in the cases which follow pernicious anemia it is probably the same agent that produces the blood changes that causes the degeneration of the spinal cord. Billings⁷ well sums up the whole matter when he says: "There is marked similarity of the contributing causes of pernicious anemia and of the conditions which are mentioned as causative in the production of the spinal cord lesions of other conditions. The consensus of opinion, as stated, is that pernicious anemia is due to a hemolytic toxin, and it is the universal

belief, too, that the different conditions are due to a toxin. It is suggestive, therefore, that possibly a toxin which has its origin, perhaps, in the way suggested by Adami* may be one which may have, in certain individuals, a predilection for hemolysis; in another for degeneration and sclerosis of tissue which, by election, affects the liver in one case, the kidney in another, and certain parts of the spinal cord in another."

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THE ETIOLOGY OF UTERINE AND PELVIC DISEASE.¹

BY

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With the progress of knowledge and the accumulation of facts relative to the etiology of disease, we are better able today than ever before to solve the intricate problems of pathology and bacteriology, advancing, as it were, more rational theories as to the cause of uterine and pelvic disease.

Any one who has had the opportunity of conducting a large charity clinic for the treatment of diseases peculiar to women must necessarily be impressed with the fact that pathologic conditions involving the uterus and adnexa are exceedingly common.

The quacks and nostrum mongers devote whole pages of the daily press to the exploitation of their wares for the treatment of uterine and ovarian diseases, and whether their remedies are efficacious or not, the ability of these various firms to meet their enormous advertising expenses proves the ready sale of the medicament.

The large attendance of suffering women at the gynecologic clinics of our free dispensaries, together with the vast number as already mentioned who seek relief for their ills at the hands of the vendor of patent medicines, enables us to form some adequate idea of the prevalence of diseases peculiar to women, involving the generative organs.

In the discussion of the etiology of uterine and pelvic disease, I shall draw my conclusions from observations made in private practice and at the charity clinics which I have had an opportunity of conducting.

The environment of the woman in America differs from that of her foreign sister in many countries of the old world. In Europe and other foreign countries women by thousands labor in the fields; in the various seaports of the Orient, ocean liners of enormous tonnage are coaled by women, and in the various tribes of Indians the female performs the drudgery incident to their mode of living. In the circus tent the woman, high aloft on the flying trapeze, twice daily performs acts requiring great physical strength, and her powers of endurance seem almost equal to the male. So we may reason that the female, if kept beyond influences physically depreciating in character may compete physically with the male of her race.

Is not the woman of modern society exposed to depreciating influences, particularly the woman of high social environment? Our ways and customs of civilized life have unquestionably depreciated her power of

*In the intestines.

¹Read at the thirty-second annual convention of the Colorado State Medical Society.

resisting disease, and, in fact, have created a predisposition to the development of disease most frequently referred to the generative organs. It would be absurd to endeavor to substantiate a theory that such conditions as prolapse of the uterus or bladder, cystocele, rectocele, malignant and benign tumors were unknown to the savage or to those not exposed to the environment of modern civilization. Yet these conditions are said by competent observers to be comparatively rare among savage tribes, or when present, excluding malignant disease, do not give rise to profound constitutional disturbance. I venture to say that hundreds of poor women in the city of Denver are today performing the drudgery incident to their lives of hard labor, with the uterus and bladder in a state of complete prolapse, yet this same condition in the woman of high social environment would completely incapacitate her physically.

As a remedy for all this I do not advise a return to savagery to increase woman's physiologic resistance to disease, nor do I advocate coal heaving, or wish that women might perform the labor that our decorum as gentlemen forbids and our true sense of gallantry as civilized men prevents, but I do advocate a radical change in various methods, at present seemingly inevitable to our civilization, and the consideration of other methods which will tend to improve the physical condition of the young girl approaching puberty.

Today there exists a disproportion between the development of the nervous and muscular systems. Young girls are sent away to boarding-school imbued with the idea that much of their future depends upon their high literary attainments; they apply their minds closely to their work at college, they master difficult studies and in many instances overtax their intellects—a loss of balance soon results between the nervous and muscular systems. The product is a refined girl, cultivated in the arts and sciences; but much of this has been derived at the expense of her physical wellbeing, and a predisposition to disease has been created.

Dr. Kelley Sabine points out that menstrual irregularities are present in 75% of the women in finishing-schools and colleges, these defects being dated back to the time when menstruation first takes place and the so-called habit neuroses are easily formed.

Dr. Byford's adage, although uttered many years ago, applies with as much force today. He said "six hours' study and two hours' play should be reversed; it should rather be eight hours' unrestrained exercise and two hours' study."

In a recent editorial in the *Journal of the American Medical Association* it was stated that labor laws regulating the time of work for minors had been passed in many States. Some observer has pointed out that the hours spent in study in and out of school by many of the pupils in high schools is in excess of that allowed by law for the labor of minors; then, again, the mental labor of the schoolgirl is more fatiguing than the manual labor of her working sister.

But the evil, we trust, is being remedied as parents observe that great mental attainments and culture purchased at the expense of the woman's physical wellbeing are not factors tending to fit their girls for the duties of wife and mother.

Out of door life and physical development have not, until comparatively recent years, been factors in the development of the young girl. Women are naturally more inclined to a sedentary life than men, and the out of door sports have not been encouraged sufficiently. Sanctioning such, it might be feared that the young woman would be robbed of a lady-like decorum, and her refined tastes and sensibilities become blunted. Fortunately, however, the physicians throughout the country have in a measure waged a successful campaign against this delusion and the fallacy of it all is being proved rapidly. The golf girl, the tennis girl, the oarswoman, are becoming familiar figures on the campus of many

educational institutions devoted to the teaching of women.

It is not the bodily influence alone of exercise, but the mental relaxation as well, from the close application incident to hard study that accomplishes good. The shackled prisoner eight hours a day on the rock pile may be violently exercising, but the benefits derived from such exercise are not to be compared to the benefits derived by the athlete, in the field one-fourth of the time. Exercise out of doors, as many observers have stated, increases the peripheral circulation; this increases cutaneous exhalation and equalizes the circulation. So in uterine and ovarian disease, when engorgement is a marked feature, the value of exercise out of doors, supplemented by Turkish baths, sea bathing, and massage must be evident to all.

In the consideration of this subject it seems quite proper to allude to the dress worn by the women of today, and especially those deluded victims of the fads or fashion. Tight-fitting clothing, especially at the waist line, seems to be the predominating style; the smaller the waist the supposedly more attractive the figure, until finally such fads of fashion result in malformation of the thorax and pelvis with an accompanying displacement of the abdominal viscera. A woman confined for 15 hours under such conditions must necessarily suffer. That most important respiratory muscle, the diaphragm, is practically thrown out of action, its lateral expansion fettered, and a downward pressure on the intestines, estimated at about ten pounds, exerted. Not alone a tendency to, but in fact a displacement of the uterus results, and its mobility is seriously influenced.

I have repeatedly demonstrated in my clinic at the Denver College of Medicine this effect of tight clothing on the uterus, and the marked deviations in its position and increased mobility upon releasing these mechanical constrictions about the waist line. Passive congestion of the uterus, flexions and versions with all their sequels may not infrequently be traced to improprieties of dress, and the paresis following constriction of the muscles of the thorax with its evil effects on respiration is too well known to need elucidation here. Mechanical devices, such as pessaries for the retention of the displaced uterus, will prove of little avail until the evil effects of heavy and tight clothing have been combated. The wasp-like figure following a distorted waist is sadly at variance with the Venus of Milo, the sculptured model of the perfect female form. As Dr. Anderson has said, if this beautiful Greek goddess came to life by her own breath, as did Pygmalion's Galatea, and donned the dress of the woman of this century, what would her less fair sisters say?

Indiscretions at the menstrual period must be recognized as a prolific source of uterine disease in young girls who have reached puberty. The so-called congestive dysmenorrhea or even endometritis has its origin in needless exposure to the varying changes of temperature, especially at a time when thin clothing is worn. The lining membrane of the uterine canal is usually first attacked, resulting in an endometritis tending to run a chronic course; finally the parenchyma of the organ becomes involved and sterility in a fair percentage of cases results, and it may be added that these sufferers are rarely free from pelvic pain.

Imprudence While the Uterus is in Process of Involution.—Lusk says that the puerperal state occupies the borderland between health and disease; though in a strict sense physiologic, it offers a variety of conditions which at other times and under other circumstances would be regarded as pathologic. The acute degeneration of the uterus presents a phenomenon which if it occurred in any other organ of the body would prove speedily fatal. The thrombus formation in the open placental vessels possesses no corresponding physiologic analogue. Again the torn vessels may lead to hemorrhage, while the traumas which even in normal labor

result from parturition, and the ease with which deleterious materials are absorbed by the wide lymphatic interspaces, the serous infiltration of the pelvic tissues, the exaggerated size of the lymphatics and veins, create a predisposition to innumerable forms of disease. The nicety of the balance between normal and morbid conditions renders it peculiarly necessary for the practitioner to make himself familiar with the physiologic limits of the phenomena of childbed.

Rest and absolute rest during the process of involution would seem indicated; women who rise too early when the lochial discharge is still present assume the risk of seriously interfering with involution and regenerative changes in the cavity of the uterus. Immediately after birth the uterus weighs upward of two pounds. The possibility of displacement of such an organ at this time should be seriously considered should the woman rise too early. Many of the followers of the christian science faith rise on the second and third days following delivery. Their conduct is not a criterion, however, and would lead us to believe that there is much truth in the old adage, "A fool for luck."

Binding the abdominal walls after delivery is a procedure popular with us all. A moderately tight-fitting bandage is unquestionably a source of comfort; but as Thomas states, "Uterine contractions should be secured by vital not mechanical means and no amount of compression by a bandage will cause the over-distended abdominal muscles, skin, fascia and areolar tissue to return to their original condition. In the application of a bandage to the abdominal wall care must be exercised not to force the uterus down into the pelvis and there retain it, usually in a position of retroflexion when involution is complete."

Tears of the Perineum and Their Neglect.—During the year 1901, 685 treatments were administered to women at the free dispensary of the Denver College of Medicine. In fully 40% of the cases coming under my observation injuries due to parturition were etiologic factors in the pathologic conditions treated. Tears of the perineum occur in the hands of the most experienced obstetricians; they may extend from the fourchet to the anus, but this does not imply ignorance or neglect on the part of the obstetrician. It is the nonrecognition, however, of such accidents, and failure to repair the same, that stands as a monument to his ignorance and neglect.

The lacerated areas about the perineal body are richly supplied with lymphatics and bloodvessels which may carry infective material from such a focus just as readily as from other abraded areas in the body. Here we have a focus of infection bathed for approximately 14 days in a fluid containing cervical and vaginal epithelium, blood and mucous corpuscles, bits of decidua, and sometimes shreds of membranes and of the placenta. In the vaginal lochia may be found a variety of microorganisms, such as the diplococci and streptococci, rod bacteria, the trichomonas vaginalis, and sometimes gonococci. It is evident that the possibility of infection from these sources cannot be eliminated, to say nothing of the failure of involution of these parts and the inevitable rectocele following destruction of the perineal body and the predisposition of the uterus and bladder to prolapse.

Gonorrhoeal Infections.—Donald Kennedy recently informed me that in 90% of the cases of gonorrhoea in the male there was a failure to effect a cure. This presumably is due to the fact that many patients treat themselves with some favorite prescription, or when the discharge ceases believe themselves cured and pass from under the observation of their medical adviser. Dr. Noggerath has undertaken to show that with very few exceptions the wife of every husband who at any time of his life before marriage had contracted gonorrhoea is affected with latent gonorrhoea, which sooner or later brings its existence into view through some one of the forms of disease. Noggerath further asserted that of

every 100 women marrying men who have previously had gonorrhoea scarcely 10 remain healthy. To sustain his assertions he gave the statistics in 81 cases, of which 31 patients only became pregnant; of the 31 only 23 went to full term, 3 were prematurely delivered, and 5 aborted. Of the 23 that went to full term, 12 had 1 child each during married life; 7 had 2 children each; 3 had 3; 1 had 4, and among the 23 women there were 5 abortions. Such statistical evidence may possibly exaggerate the true condition of affairs, but if authentic a healthy woman would be almost an exception. Dr. Noggerath's paper was published in 1873. Neisser did not discover the diplococcus of gonorrhoea until 1879. The possibility of an error in diagnosis made on clinical signs alone must be considered, especially in females.

We know, however, that gonorrhoea is one of the most widespread affections, and its sequels in the female so terrible that it merits our earnest consideration. The cases usually come under our observation late, after the development of an endometritis and beginning tubal involvement, when nothing but prompt surgical intervention may save the sufferer from the pitfall of chronic invalidism.

The crimes of the abortionist stand prominently before us as a prolific source of uterine and pelvic disease. The shrewdness by which these professional degenerates elude detection leads me to believe that the intelligence which they possess is sadly misdirected. The application of their professional attainments along more legitimate lines might prove them valuable citizens to a community, instead of criminals whose abode should be the State penitentiary rather than a fashionable office building in the down-town district. To their bungling methods we may attribute many inflammations of the genital mucous membrane, endometritis and salpingitis, inflammation of the uterine parenchyma and of the subserous and pelvic cellular tissue. Inflammation of the peritoneum covering the uterus and its appendages, pelvic peritonitis and diffused peritonitis, uterine phlebitis, with formation of thrombi, embolism and pyemia, and finally septicemia to close the scene.

It behooves us, as members of the medical profession and the confidential advisers of families in matters pertaining to their health, to educate our patients to the dangers following their indiscretions, to point out the pitfalls that menace their daily life, to do this at the right time, in a conscientious spirit and with the courage of our convictions. We have then done our duty and perchance may save many a sister from a life of invalidism, for I do not believe that woman was born to suffer as the sparks to fly heavenward.

TRANSVERSE POSITION OF THE CHILD WITH PROLAPSE OF THE ARM AND IMPACTION.¹

BY

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of Philadelphia.

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This condition is invariably due to neglect; the child lying in transverse position with the advent of labor and rupture of the membranes will become impacted unless there is spontaneous version or evolution, which rarely happens when the child is of average size. When impaction occurs the child may lie in one of four positions, but clinically only two are of importance. First, when the child's back is anterior; it makes little difference whether the child's head is to the right or left side, and second, when the back is behind. When a careful examination is made the uterus will be found in tetanic contractions, the head with neck elongated and breech will be found

¹ Read before the Philadelphia Obstetrical Society, May 1, 1902.

about on the same level and with the upper arm between. This forms the base of the wedge, the prolapsed arm forming the point of the wedge. When the back is behind it is impacted under the promontory of the sacrum, which makes the position much more difficult to treat, for any manipulations at version require the entire child to be shoved up, which is often impossible without rupture of the uterus. When the back is anterior it can be shoved up and anterior without moving very much the head and breech and then a foot can easily be brought down. The danger of rupturing the uterus is very great and should always be borne in mind in attempting version. After delivery there is the danger of sepsis even when the greatest antisepsis has been observed and the uterus thoroughly emptied, as in cases in which there has been prolonged labor with rupture of the membranes for some days before there is often pressure necrosis of the uterine wall with the entrance of pathogenic bacteria before delivery, and this is greater in those cases in which attempts at delivery have been made. In treating these patients place them deeply under chloroform anesthesia, and while this is being done empty the bladder and rectum, and thoroughly scrub the external genitals and adjacent parts with soap and water, then plain water, then mercuric chlorid, then give a 2% lysol douche, washing out the vagina as well as possible, having the patient placed on a high table. The best method of delivery, especially when the back is posterior and the prolapsed arm gangrenous, is by decapitation, using Braun's hook; or, if the elongated neck can be reached by the fingers, decapitate with long blunt-pointed scissors. This should be done at once and no attempts at version made. As soon as the head is severed, by making traction on the arm, the body is easily delivered and the head can then be delivered by forceps. If the head is so far up that decapitation cannot be safely done, then the prolapsed arm should be amputated and the other arm brought down, which lessens the wedge at its base. It can also be amputated, and this will allow the head to move upward and inward and the foot can be brought down and delivery accomplished. When the back is anterior and impaction not very great the back can be shoved up in a rotary motion, sweeping along the anterior wall of the uterus, and then it is an easy matter to bring down the anterior foot or both feet.

After the child has been delivered the placenta and membranes should be removed and the uterus doused with 1% lysol solution and then packed with iodoform gauze, which will lessen the dangers of hemorrhage and drain the uterus. This will also lessen the dangers of sepsis. The gauze should be removed in 36 hours and another douche of 1% lysol given, but this is not necessary and may be omitted. Should there be a rise of temperature, and foul lochia, great care must be used if the uterus is washed out, for a curet or uterine douche tube will readily pass through the uterine wall if there is a slough, which is often present, being due to the prolonged pressure. The entire thickness of the wall may slough, leaving only the peritoneum separating the uterine and abdominal cavities.

CASE I.—Mrs. A. B., a Slavonian, aged 24, first menstruated between 14 and 15. It was always painful, keeping her in bed for two or three days. Last menstruation was in January, 1896. She has been pregnant once before, when she had in spontaneous labor a girl who is now 5 years old. She was attended by a midwife and remained in bed for four weeks, as she was feverish and weak. She has been well during the present pregnancy, except for constipation. Active labor pains began Monday, October 26, 1896, in the early afternoon, and soon afterward there was a copious discharge of amniotic fluid. The pains continued strong and frequent. She was seen by Dr. Wells late Tuesday evening and sent by ambulance to the Jefferson Maternity, where she arrived at 12.45 Wednesday morning. She was above the average size with flabby tissue. She was very weak and exhausted, the uterus in tetanic contractions, the bladder greatly distended. Strychnin and whisky were given at once and chloroform started. The bladder was emptied and the bowel irrigated. On palpation the child's

head was found in the right iliac fossa and back behind. After cleansing the external genitals and washing out the vagina with creolin, an examination showed the right arm prolapsed and gangrenous, the cord prolapsed, but not outside the vulva. The right arm was amputated with long scissors and an attempt made to shove up the head, but this was not successful, owing to the danger of rupturing the uterus. The left arm was between the head and hip. This was brought down and amputated. The head was then pushed up a little and the left foot caught and brought down, and the rest of the delivery was easily accomplished with the back of the child anterior. The placenta was delivered manually in five minutes. It was attached to the right anterior wall of the uterus high up. The uterus contracted well. Normal, not saline, solution was freely injected into the bowel, and by hypodermoclysis into the right lateral aspect of the chest and thigh. She was again stimulated with strychnin, whisky, and ergot. The patient reacted slowly and did well until the fifth day, when there was a sudden rise of temperature. The uterus was gently cureted and irrigated with a large amount of 1% creolin solution. The temperature soon fell to about normal, and the subsequent recovery was uneventful. The child, a boy, weighed 8 pounds 8 ounces, and was 56 cm. long. The other measurements were correspondingly large.

CASE II.—A. G., white, a stenographer, aged 24; had had diphtheria and measles during childhood. She menstruated first at 12; the flow was always regular, lasting four or five days. She was last seen on January 10, 1897, and she had continued well during her first pregnancy. She was brought to Jefferson Maternity in the ambulance at 6 p.m. on October 2, 1897. After being prepared she was chloroformed, and on examination the left arm was found prolapsed with a loop of cord. The head was in the left iliac fossa and back behind. The left arm was amputated and the head pushed up a little, the right foot caught and brought down, and delivery easily completed. The placenta was delivered manually and the uterus irrigated with creolin and packed with iodoform gauze. The patient was stimulated with strychnin and ergot. On October 4 the gauze was removed and a creolin douche given. The patient was in good condition and continued so throughout the rest of her convalescence.

CASE III.—L. H., colored, aged 28, was pregnant for the second time. The first pregnancy was normal. She had a contracted pelvis; all of the measurements were small; the external conjugate was only 17.5 cm. Dr. Royer was called to the patient when labor began, at 8 p.m. May 8, 1898, and while giving an enema the waters ruptured and the arm prolapsed. An attempt was made to do version, but it was not successful. Dr. Wells was sent for and another unsuccessful attempt at version made. I saw the patient at 5 a.m., and found the right arm and cord prolapsed, the child's head in the right iliac fossa and the back behind. The uterus was contracting strong and continuous; I could not get the fetal heart sounds or pulsations in the cord. The patient was placed under deep chloroform anesthesia, and by continuous pressure I was able to shove the child's head up a little and brought down the left foot, and then turned the case over to Dr. Royer, who completed the delivery and treatment. The patient made an excellent recovery. The child was stillborn.

CASE IV.—Mrs. S. B., a Russian Jewess, aged 28, has had two normal labors; after the first she had a breast abscess. She had active labor pains three hours before being seen, but the membranes had been ruptured only a short time. On examination the right arm was found prolapsed, the head in the left iliac fossa and back anterior. The fetal heart sounds were good and strong. The patient was placed under deep chloroform anesthesia and the head shoved up and the right foot brought down, but it turned posterior, and the left foot had to be brought down. The arms were extended, but easily brought down. The head could not be delivered manually, so forceps were applied and delivery accomplished. The child was asphyxiated, and was with difficulty resuscitated. The mother did well until the third day, when her temperature rose to 102° F. and there was considerable pain in the breast. When milk was well established the temperature dropped, pain left, and she was able to nurse her child from both breasts.

CASE V.—M. T., colored, aged 28, has a family history of insanity, her mother and sister both died insane. She menstruated first at 14, the flow has been regular and painless, lasting three days. The flow was last seen in April. She has had two pregnancies, both of which were normal. She has been well during the present pregnancy. The first stage of labor was very severe, lasting 24 hours. The second stage had lasted two days when first seen on January 16, 1897, at 3 p.m. The right arm was prolapsed and hyperemic, the head was in the left iliac fossa and back interior. I could not get the fetal heart sounds. She was placed under deep chloroform anesthesia, the back of the child shoved up, the right foot brought down and delivery easily accomplished. The child had apparently been dead for some hours. She was greatly exhausted after delivery and had to be freely stimulated, but did not respond very well, and on the twentieth day well-marked symptoms of puerperal sepsis appeared. She was sent to the Philadelphia Hospital, where she died of profound sepsis. The patient said she had been attended for two days by a physician who assured her she was doing well.

CASE VI.—A young white girl, a primipara, was seen with

the resident physician. She had been in labor for three days, being attended by a student. When seen the right arm was prolapsed and gangrenous, back anterior and the head in the left iliac fossa. She was advised to go to the maternity, but declined. She was placed under chloroform and the back shoved up and the right foot brought down and delivery easily accomplished; the child was slightly macerated. She was greatly exhausted, but reacted very well, but on the third day had a subnormal temperature and a weak and rapid pulse with evidences of profound sepsis. She was sent to the Philadelphia Hospital, where she died.

Another patient, seen with the resident physician last August while the Jefferson Maternity was closed, was so weak and exhausted and the surroundings so dirty that she was sent to the Philadelphia Hospital, where she died before delivery could be accomplished. She had been attended by two physicians for three days.

TWO EXAMPLES OF PARASITIC HEMATURIA.

BY

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The first case, the report of which follows, is doubtless one of extreme rarity, and its occurrence in connection with bloody urine appeared unique at the time of its discovery in the urine of an inmate of the Philadelphia Hospital, August, 1899.

The patient, a male of 61 years, presented nothing abnormal for one of his age, and gave no history of having ever before voided bloody urine. On rising in the morning he noticed that his urine resembled blood and it remained unchanged during the day. He suffered no discomfort and during the day did not void urine oftener than usual. A specimen taken from that passed



Fig. 1.

on retiring and during the night following was also bloody and contained a few parasites. The following morning the urine was normal in appearance; did not contain the parasite; and the centrifugated sediment showed but few blood discs. The urine, on standing, displayed a heavy sediment, a microscopic study of which showed it to be composed, for the most part, of blood discs, clots, few epithelial cells, and many blood casts. No crystals were present, but everywhere the sediment was found to contain many small worms, which are best described by the accompanying plate (Fig. 1). A drop of this sediment, when studied under a 2-3 lens, often presented from two to six of these parasites in a single field of the microscope. Their movements consisted in coiling and uncoiling, apparently reaching forward with the tapering extremity, the movements being repeated in such rapid succession that they were enabled to travel across the field of the microscope in a few seconds. The serpentine movement, as shown by the embryos of the filaria, was not observed. No attempt was made to photograph the parasite during its movements. They remained alive for 24 hours in a specimen of urine that had been placed in an incubator, at a temperature of 37° C. When kept at room temperature they were found to be motionless after a few hours. There appeared to be a great variation in the size of these worms, as is shown by the following measurements: Total length, 0.036 to 0.053 inch; diameter at greatest part, 0.003 to

0.0035 inch; diameter at the junction of the greater $\frac{1}{2}$ with the remaining $\frac{1}{2}$ of the body, 0.002 to 0.0025 inch.

It was extremely difficult for one to distinguish beyond question of doubt a capsule enveloping the parasite, and while the artist has made this very clear in the accompanying sketch, I regard its production, in a measure, as being dependent upon the change of focus. Several of the parasites were handed to Dr. Charles Wardell Stiles, of the Bureau of Animal Industry,

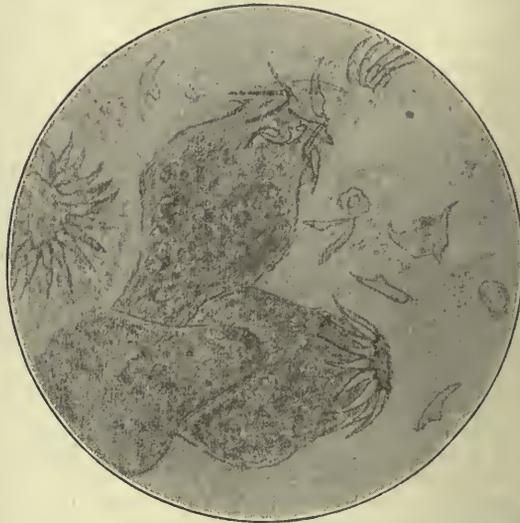


Fig. 2.—Scolex and hooklets, *Tenia echinococcus*, from urinary sediment. Obj.: Queeu 1/c, eye piece iv.

Washington, D. C., who, after having studied them, writes me in part as follows: "I regret to say that I am still unable to make a specific or even a generic determination. The size of the worm appears to disagree very radically with the embryos of *Filaria bancrofti* (*Filaria sanguinis hominis*). I also found one trichocephalus egg in one of the specimens."

During my term of service at the Pennsylvania Hospital, 1901, I studied a specimen of bloody urine, voided

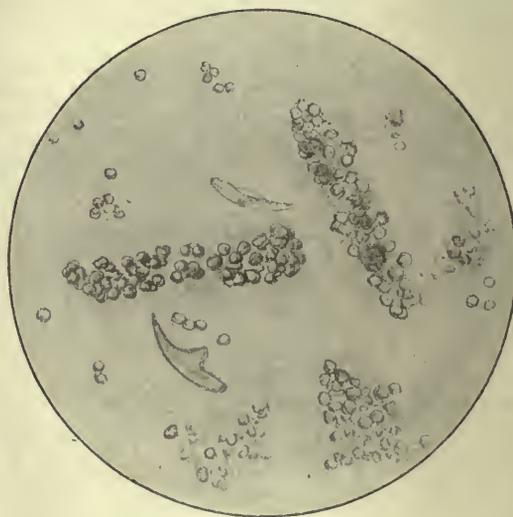


Fig. 3.

by a male patient, in which many parasites apparently identical with those observed in connection with the previous case were found. Specimens of the parasites from this second patient were also handed to Dr. Stiles. Ova of *Trichocephalus dispar* were present in the urine of both patients. My second observation of the parasite was through the courtesy of Drs. H. W. Cattell and A. Scott, the latter of whom tells me the case was one

of special pathologic interest, and will doubtless be reported. An abnormal communication between the enteric and urinary tracts was not discernible in my patient, and for a period of several months, while he remained in the hospital, repeated examinations of the urine failed to detect anything abnormal.

The second case is one of hematuria resulting from the development of an echinococic cyst, whose products were eliminated through the urine. A bottle containing about four ounces of bloody urine was found among

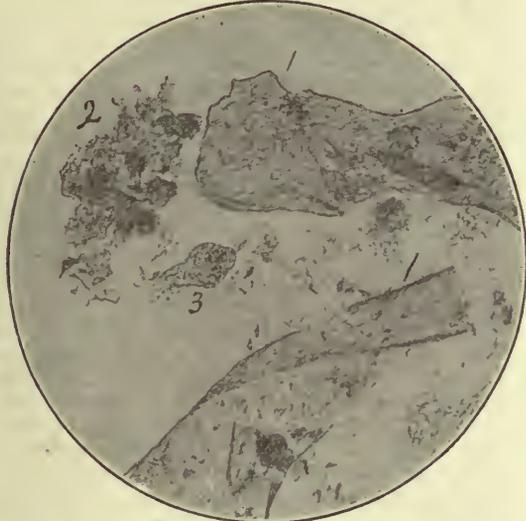


Fig. 4.—1, shreds of membrane; 2, clusters of scolices; 3, scolex, *Tenia echinococcus*. Obj.: Queen $\frac{3}{8}$, eye piece iv.

a number of specimens in the clinical laboratory of the Philadelphia Hospital; it bore no label and all efforts to determine the specimen's origin were of no avail. The urine was bloodstained, and displayed a heavy sediment composed, for the most part, of shreds of flocculent membrane.

Microscopic study showed it to contain shreds of a yellowish membrane, hooklets (Fig. 4), and scolices of the *Tenia echinococcus* (Fig. 2). Many blood casts were also present (Fig. 3).

EXOPHTHALMIC GOITER: REPORT OF CASE.¹

BY

K. S. HOWLETT, M.D.,

of Franklin, Tenn.

On June 21, 1901, G. H., white, male, unmarried, aged 34, applied to me for relief from "indigestion and torpid liver."

History.—He had run a wheat-thresher engine for a number of years and later an engine at a flouring mill; at both places the labor was heavy, the heat excessive and the hours long. His habits had always been good, and he had always boasted of his capacity to endure an almost unlimited amount of labor without fatigue or ill consequence, and from early life had been an excessively hard worker, allowing himself little rest and no recreation whatever. Four years ago he first noticed his strength and endurance were beginning to fail, and after a day of hard work he would feel considerable physical and mental depression, accompanied by pronounced muscular weakness and tremulousness. The following day he would feel indisposed or unable to resume his work. He also acknowledged some shortness of breath and spells of palpitation of the heart, which had increased in frequency and severity. During this period, however, he had not been confined to his bed for as much as an entire day, but had called on two or three physicians at various times for treatment and had been invariably told that he was suffering from biliousness and given calomel to correct it. His tongue, he stated, was usually dirty, and he had a bad taste and poor appetite with constant dull headache, somewhat throbbing in character. His digestion had not been good for a long time, his stomach feeling full and uncomfortable after meals, and he had several spells of acute indigestion or colic (which he con-

tinued to have during the remainder of his illness). Constipation was the rule, though it had not been very obstinate and was occasionally alternated with diarrhea. These disturbances seemed to me to be part of, and not the cause of the patient's general condition, and could be readily accounted for by the mental worry, change of habits, lack of exercise, etc., and at the time I saw him they certainly were not the most prominent symptoms. Sometimes for days, or even weeks, he would feel fairly comfortable and be able to keep at his work almost constantly, still he had been growing steadily worse and was now compelled to abandon work entirely.

Examination.—The patient's general appearance was that of languor and fatigue, his countenance indicative of discouragement as well as distress. The skin of the face was dark, almost bronzed, the coloration being much more marked immediately around the eyes. The complexion was sallow and the mucous membrane of the lips, mouth and fauces was a pale, bluish color, suggestive of leukemia. I noticed the thyroid was enlarged, but the patient had not mentioned it, and in fact seemed rather irritated and disgusted that I should give it so much attention. He stated that he had first detected it when he was about 20 years of age (14 years ago) and that it had never been sore nor given him any pain or discomfort. The enlargement was on the right side, was flat and not very prominent and upon mere inspection did not appear to be larger than a turkey's egg. Upon palpation, however, it proved to be much larger, extending downward toward and behind the clavicle and backward toward the vertebrae, and evidently exerting considerable pressure upon the trachea, bloodvessels, and nerves beneath. Breathing was labored, wheezing, and asthmatic in character, the respirations being 26. He had frequent, violent paroxysms of coughing, with scant expectoration of a thin, frothy, serous fluid. The pulse was 115 but increased to 130 after walking a few steps. It was quick, full, strong, forcible and regular. The cardiac impulse extended over a larger area than usual and was more perceptible; the epigastric pulsations were very distinct. The heart sounds were louder than normal but I could detect no murmur and the area of cardiac dulness was little, if at all, increased. I made no examination of the lungs at this time, and in view of subsequent developments this was unfortunate.

The patient seemed to be of fairly good weight, but stated that he had lost flesh decidedly during the preceding year. The muscles were large, apparently well developed like those of a laboring man, but were soft and flabby to the touch. Upon holding out the hand a fine tremor was very marked and presented an interesting and typical exhibition of the special symptom, said to be a constant and characteristic symptom of exophthalmic goiter.

The enlarged thyroid, tachycardia, and fine tremor, together with muscular weakness and general nervousness, induced me to make a diagnosis of exophthalmic goiter, notwithstanding the absence of exophthalmos, which if present at all was too slight to be of positive diagnostic value, and certainly would never have been noticed but for the other symptoms calling attention to it. Nor were there any other ocular symptoms at this time, although later Graefe's symptom (a tardy or defective descent of the upper lid when the eyeballs are directed downward) could occasionally be brought out. This, however, was not invariably present, and never well marked, although it did become more patent before his death.

I saw the patient on the street after this, and he said his cough had become more annoying, and he had some pain in his right side. On June 29, eight days after I had first seen him, and two days after meeting him on the street, I was called to see him at his home. He was complaining of a severe pain in the right side of the chest, which had been constant for three or four days, but had grown rapidly worse during the preceding night. It was acute, lancinating in character, and caused the patient to cry out in coughing. Examination showed a completely hepatized right lung, there being scarcely any expansion of that side, no vesicular murmur over any portion of the lung, no rales, and only slight crepitus at the lower portion, evidently pleuritic. The temperature was 103°, pulse 120, full and bounding. The cough was paroxysmal and violent in spite of every effort upon the part of the patient to suppress it. The expectoration was thin, watery and frothy, and neither at this time nor subsequently was there anything resembling the characteristic sputum of acute pneumonia.

Dr. D. B. Cliffe, Jr., of Franklin, Tenn., saw the patient with me in the afternoon of this day, and we were both impressed with the absence of so many of the general symptoms which would be expected from a severe pneumonic infection. There was no delirium, no general prostration more than had appeared on his visit to my office, and the condition of appetite and tongue were also about the same. There was an absence of the distressing dyspnea and cyanosis which would be expected when an entire lung had become hepatized. Physical examination of the heart and left lung rather indicated that the condition of the right lung must have existed long enough for nature to compensate to some extent for the loss of breathing space by increased power of the left lung. In fact, but for the temperature of 105°, the pain in the side and physical evidences of a solidified lung, there was no symptom present that could not be readily accounted for by my previous diagnosis. The pneumonia, if indeed it was a specific pneumonia as we at first thought, certainly did not run a typical

¹ Read before the Middle Tennessee Medical Society at Lewisburg, May 16, 1902.

course. The temperature was normal the next morning, and afterward ran an irregular course, usually going above normal at some time during the day, but at no time reaching 100° until the last two weeks of his illness, when it reached 101° and 102° a few times.

The lung never cleared up, although the patient lived two months longer. There was never during life any evidence of breaking down of lung tissue, nor of septic absorption. The autopsy showed a completely solidified lung, swollen, edematous, and filled with a whitish, semisolid exudate with pleuritic adhesions over the greater part of its area, but no abscess and no pus could be found.

In the beginning there was a moderate amount of pleuritic effusion, which disappeared within three or four weeks. The pain in the side disappeared in a day or two, and never returned.

From this time the patient's decline in general health, while slow and irregular, was sure. The thyroid did not perceptibly increase in size but the breathing remained much obstructed and grew more rapid. The expectoration became more profuse but retained its thin serous character. The pulse grew more and more rapid, reaching 180 or even more, sometimes becoming difficult to count, but it maintained its full, forcible beat even to the last. At times a heart-murmur could be distinctly heard at the apex, this was probably systolic but was not constant and we could not satisfactorily classify it. Rather distressing palpitation would nearly always occur when the patient attempted to assume the upright position and at such times he would complain of dizziness. The heart's action was regular until about 12 or 14 hours before death, when his condition grew suddenly worse.

The tremor remained about the same throughout; emaciation was rapid, and the muscular weakness became constantly more pronounced, the patient soon becoming unable to stand or walk; he received several falls in attempting to get up to stool. When lying down, however, he could move the limbs readily and freely and there were no evidences of paralysis. He complained considerably of bodily heat although the skin did not feel hot to the touch, being always moist and presenting a greasy appearance. Although the sweat glands were quite active all the time there were never any exhaustive colliquative sweats. At times there was considerable edema of the hands, face and trunk, but never of the lower limbs. In the earlier stages this would disappear under a little saline purging, but toward the last it became a more permanent feature.

The urine was amply sufficient in quantity, specific gravity 1,010 to 1,020, and sometimes contained traces of albumin. While the patient never grew hungry, yet he did take plenty of nourishment throughout his illness, and the digestive process was, as a rule, good. A little indiscretion in eating, however, would cause his stomach to distend with gas, and he would have acute indigestion and colic. He usually had to take medicine or an enema to get a movement from the bowels, though two or three times he had rather an alarming diarrhea, dysenteric in character.

The change in the patient's disposition was so decided as to amount almost to mental aberration. Before his illness he was said to have been a quiet, agreeable, even-tempered man of rather stolid, impassive temperament. He was now morose, irritable, impatient of contradiction, angry upon the slightest provocation, and suspicious. He would seem to be aware of this himself, and would apologize for it and make heroic efforts at better self-control. He frequently had a peculiar form of delirium, or more properly, mental delusion. He would imagine that he was at some other place than his home, that his mother was some other person, and he would maintain this idea with considerable warmth and stubbornness. Later he would seem to realize that he had been deluded, would speak of his mental confusion and seem much worried and depressed. He was sometimes hysterical, and toward the last showed symptoms almost maniacal in their manifestations. These mental disturbances were always transient and temporary, the patient being most always entirely rational.

Death seemed due to general weakness and heart failure. Twelve or 14 hours before this occurred, the pulse became very irregular, losing one or more beats at frequent intervals. The heart, however, still maintained its forcible, tumultuous action, as if laboring under undue stimulation.

Autopsy.—This was held a few hours after death. The thyroid was found much larger than had been suspected during life, the greater part of the enlargement being backward. It was larger at its upper portion than a man's closed fist, sending a projection downward behind the clavicle into the chest cavity. The pressure upon the trachea had been such that the rings were all softened, and it appeared as a collapsed tube throughout its entire length. The gland was very firm, hard, and appeared to contain (we did not use a microscope) an excess of fibrous tissue. Its cut surface was paler in color, and there was less exudation of colloid material than in health, and macroscopically there appeared to be an increased vascularity of the gland. No other pathologic condition except that of the right lung already mentioned was evident. The left lung was emphysematous and increased in size, but we could find nothing else wrong with it. The heart was probably slightly enlarged, dilated, but showed no valvular lesions. The liver, kidneys and spleen were of proper size and normal in appearance.

The tumor differed from that generally found in exophthalmic goiter, which is considered to be largely a vascular enlargement due to increased vascularity as well as to a general increase in the amount of secreting gland tissue, and is therefore softer than the gland of ordinary goiter, the change being aptly compared to that which takes place in the mammary gland during lactation. Just what was the true cause and the real pathology of the condition found in the right lung, what part the diseased lung played in the symptoms presented by the patient during life, and how much it hastened or contributed toward his death, what would have been the course and duration had this complication been absent, were puzzling questions throughout the patient's illness, and still remained unsolved problems after the autopsy. It was unfortunate that an examination of the lungs was not made upon his first visit to my office. No information as to this feature could be obtained from the physicians who had seen him before, as they stated that they had made no examination of the patient other than merely to look at his tongue. However, I think there is little doubt but that the lung complications developed between the time that I saw him at my office and when I was first called to see him at his home, although the well-known general symptoms always expected in the presence of a recently and completely hepatized lung were absent. I hardly think it was a genuine pneumonia due to an infection from the pneumococcus, for although the symptoms present on the first day of his confinement to bed were such as to induce us to make a diagnosis of acute pneumonia, yet the subsequent course of the case was certainly not typical of that disease. The condition of the lung and pleura at autopsy, together with the character of the exudate with which the air-vesicles and tubes were filled, clearly indicated that there had been congestion and inflammation, and yet it was most likely a passive congestion due possibly to some mechanical obstruction to the return flow of blood to the heart or to some other cause which could not be clearly demonstrated.

On the other hand, the case in its history, course, and duration did present a typical picture of exophthalmic goiter except for the absence of exophthalmos. We are told, however, that while this is the most conspicuous characteristic of this disease, yet it is the one most frequently absent. At the same time, barring the local evidences of a solidified lung, there was no symptom presented by this case throughout its course that could not readily be accounted for upon the theory of thyroid intoxication alone.

Site Selected for Philadelphia Almshouse and Insane Hospital.—The Philadelphia councils have been asked to pass an ordinance permitting the Department of Charities and Correction to use part of the House of Correction property in Holmesburg as a site on which to locate the City Almshouse and the Department for the Insane. The selection of this site was based on the favorable decision reached by the party of physicians, representing a number of hospitals and three colleges, after they had made a thorough inspection of the location. Councils are urged to provide for the immediate construction of the necessary buildings. By a recent provision there is \$250,000 available for the buildings and for a Municipal Hospital, and in addition there is a loan item of \$200,000 which can also be used. It is proposed to spend \$200,000 for the Insane Department and \$100,000 for the Almshouse. The site selected consists of 150 acres of healthy, high, and accessible ground, which is already owned by the city. Part of the tract consists of 40 acres of woodland, which will be used as a recreation park. The Pennsylvania Railroad runs through the northern section of the land, and patients from all parts of the city can readily be transported over this railroad and transferred to the institution without the slightest inconvenience. It is estimated that the buildings when completed will accommodate 4,000 persons. Mayor Ashbridge, in a message to councils, recommends that the new buildings be designated as the Philadelphia Hospital for the Insane and Philadelphia Hospital for Indigent, and the whole institution to be known as the Philadelphia General Hospital. The county hospital will be retained on the present site at Thirty-fourth and South streets, where all the buildings are now located.

SPECIAL ARTICLES

THE GYNECOLOGIC EXAMINATION.¹

BY

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of New York.

Adjunct Professor of Gynecology at the New York Polyclinic.

General Observations.—When a woman submits to a gynecologic examination, it must be remembered that she does so, in a majority of instances, with a full realization of what it implies, and with the hope that treatment will cure or relieve her condition. While the examination should be thorough in every sense, a conscientious effort should be made by the physician to respect her natural sense of modesty, and to spare her undue exposure. When possible, a specially trained nurse or other female attendant should prepare the patient, and should be present during the examination. Whether one is in attendance or not, the patient should always be allowed to arrange her clothing, before and after the examination, behind a screen, which preferably should be placed about or immediately adjoining the examining table.

The use of a sheet should never be omitted, and it should be scrupulously clean. All instruments to be used during the examination should be kept out of sight, and all unnecessary noise in handling them carefully avoided. Subsequent to the examination the instruments, towels, soiled cotton, and the like should be removed from sight before the patient is allowed to rise from the table. While it undoubtedly is a wise precaution to disinfect all instruments carefully, preferably by boiling, both before and after an examination, few gynecologists, in their routine office practice, attach to this procedure the importance it warrants. In every case they should be scrubbed clean with hot water and soap, and thoroughly dried before again being used or put away.

If the physician has the slightest reason to suspect the presence of recent venereal infection in the case of the patient to be examined, a thin, seamless rubber glove should always be used on the hand which examines the vagina, and the glove and all towels, instruments, etc., should be submitted to rigorous disinfection before being put aside. Rubber finger-cots under these conditions do not afford sufficient protection. In the case of malignant disease of the vagina or uterus, similar precautions are necessary.

The instruments used should be kept in warm water until required. Cold instruments should never be introduced into the vagina. If the instruments have just been boiled, the water in the basin need not be medicated, but otherwise it is best to add one of the mild antiseptics, such as creolin or lysol in the proportion of a dram to the pint. Mercuric chlorid will corrode the instruments and should never be used. Iodin, silver nitrate, or strong acids used in the course of local treatment ruin all fabrics with which they come in contact, and therefore all excess of these agents should be removed from the genitalia or from instruments with moistened absorbent cotton, rather than with a towel.

The time of election for the gynecologic examination is about midway between two menstrual periods. When possible, the patient should always have had a free bowel movement an hour or two previous to the examination, and to this end a saline cathartic should be taken the night before. Her bladder should be empty, or as near so as possible. If the examination is to take place under general anesthesia, she should have abstained from taking food for at least six hours previously. If apprehension is shown by a patient during the progress of the examination, a few words by the physician will often serve to distract her thoughts and render it less of a bugbear. Above all things the physician should never in any way express surprise, anxiety or consternation as a result of his findings. If the patient's condition is serious, it is probable that she will possess some understanding of its gravity, or of its consequences, and her mental state should not be made worse by any

remark or facial expression of the physician. Finally, it is to be remembered that levity or joking conversation on the part of the examiner at such a time is distinctly out of place.

The Vaginal Examination.—The routine practice which I have adopted in vaginal and combined vaginoabdominal examinations differs somewhat in detail from that of many gynecologists, and therefore I shall describe it with considerable minuteness.

Whether the digital examination of the pelvic contents is made with one or two fingers, or with the fingers of the right or left hand, is a matter entirely of preference or custom with the examiner. Every gynecologist should be able to examine equally well with each hand, but while the right side of the pelvis may be most readily explored with the right hand and the left side with the left hand, long experience usually enables one to obtain all necessary information with the fingers of that hand which he is most accustomed to use. Personally I use the index and second fingers of the left hand, the remaining two fingers being doubled into the palm, the thumb being fully extended. The right hand is thus left free for the handling of instruments.

The patient having loosened her corset and all waistbands, she is made to stand on a small stool at the foot of the examining table, facing the examiner. The latter, or the nurse, then holds a sheet folded in half before her at a level with her hips, and protected by the sheet she is told to raise her skirts behind to the level of the table and then to seat herself on the edge of the latter. The sheet is then laid over her lap and she is assisted to lie down, a hard pillow of moderate height being placed under her head. Still protected by the sheet, the examiner then adjusts her feet in the stirrups and she is directed to separate her knees widely. If she has slipped back on the table, she is drawn forward so that her buttocks extend slightly over the edge. The lower part of the sheet is then folded under the edge of her skirts, and after being pushed upward some distance the nurse folds skirts and sheet inward toward the abdomen, holding them in this position during the examination. By this method the patient is least exposed. If preferred by the examiner, however, or if a nurse is not in attendance, the skirts and sheet may be raised to the level of the knees or the skirts may be pushed above the knees, care being taken that the sheet covers the latter at all times. If for any reason the course of the examination is temporarily interrupted, the end of the sheet should at once be dropped, concealing the genitals from view. When the patient is in proper position she is directed to rest her arms quietly at her sides and to breathe regularly and deeply, preferably with the mouth open, in order to relax the abdominal muscles as much as possible. She should not be allowed to raise her head from the pillow until the examination is concluded.

The physician then proceeds to inspect the external genitals, standing somewhat to the left of the patient and separating the labia with the thumb and forefinger of the right hand, or while seated before her, in this case using both forefingers for the purpose of exposing the canal. A careful visual examination should never be omitted under any circumstances; it requires but a moment, and much valuable information may be gained. A textbook on gynecology of comparatively recent date states in this connection: "Inspection of the external genitals should not be made a routine practice. As a general rule it should only be made when there is local tenderness, when syphilis or gonorrhoea is suspected, or when it is said by the patient that something comes down at the vaginal orifice." Such teaching cannot be condemned too strongly. The physician owes it to his patient that the examination be as thorough and complete as lies in his power, and neglect of any advantage that may be gained by such a step will handicap him in his diagnosis and treatment. During the visual examination the physician should note the following:

1. The height and angle of the pubic arch, and the condition of the mons veneris. Scratch-marks on and in the neighborhood of the mons frequently are indicative of pruritus, or of the presence of pediculi. An extraordinary growth of hair in this region has been noted as sometimes occurring in connection with tumors of the pelvic organs.
2. The position and condition of the clitoris. Pronounced.

¹ Lecture delivered at the New York Polyclinic Medical School and Hospital, November 26, 1902.

hypertrophy or congestion and sensitiveness of the clitoris, especially in a neurotic subject, should give rise to a suspicion of masturbation. An adherent prepuce may be a causative factor in many hysteroneurotic conditions.

3. The urethral orifice. Redness and sensitiveness is most frequently due to the presence of caruncle, to urethritis, or to prolapsed walls. Pus at the orifice may be due to general urethritis, or to inflammation of Skene's ducts.

4. Position and condition of the vulva. A virgin vulvar orifice is usually small, and its labia are firm; a multiparous orifice is more or less enlarged, and the labia are less firm, or flabby. A ruptured or absent hymen is not necessarily an evidence of unchastity. Every gynecologist of experience has seen cases in which the membrane has been torn or destroyed as a result of a fall, or by the use of an unyielding nozzle while taking a vaginal douche.

5. The condition of the vulvovaginal glands.

6. The vaginal opening for presence of chancre, mucous patches, or condylomas; for prolapse (rectocele and cystocele); for laceration; for gonorrhoeal or leukorrhoeal discharge.

7. The anus for hemorrhoids, fissure, or fistula.

A curious fact which has very frequently been brought to my attention is the facility with which students at my clinics and in my operative classes diagnose the existence of a cystocele when none is present. This happens in the course of the visual examination, and in some instances, perhaps, is pardonable. The female urethra measures about $1\frac{1}{2}$ inches in length, and is supported by the anterior wall and pubovesical ligament. The bladder, normally, then, is the distance mentioned from the vaginal orifice. Directly beneath the urethra, and especially at its junction with the bladder, the anterior vaginal wall is made up largely of erectile tissue. In women who lead an active sexual life this tissue is apt to become more or less hypertrophied, and I have frequently seen it enlarged to the size of a hickorynut. Under such conditions this so-called tubercle of the vagina is sometimes mistaken for a true cystocele, the examiner for a moment having become confused as to the anatomy of the parts.

The visual examination having been completed, the physician lightly anoints the finger or fingers with which he is to make the vaginal examination, and then with a towel wipes off the thumb by which the lubricant has been distributed, in order not to soil the patient's clothing. A very small amount of the lubricant will be necessary. The examiner's hands should be warm, scrupulously clean, and the nails should be cut short and rounded. A ring should not be worn on any of the fingers of the examining hand. The details of the digital examination demand close attention. The ability of the examiner to explore the pelvis without causing the patient unnecessary pain frequently determines whether he will be retained as her medical attendant. Aside from consideration for a woman's natural sense of modesty, no one feature appeals more strongly to her susceptibilities than absence of physical discomfort when undergoing an examination of this character. Three cardinal points should be borne in mind when introducing the examining fingers into the vagina: (1) Always pass the fingers into the canal from below—that is, over the perineal body—never from above; (2) always avoid touching the clitoris; (3) always avoid compressing the soft tissues under the pubic arch by making firm, steady pressure on the perineal body and rectovaginal septum. If the physician has been accustomed to examine with two fingers, and is confronted with the task of examining a nulliparous vagina of small caliber, it frequently is surprising how readily it may be accomplished without causing pain to the patient if these precautions are observed. On making firm downward pressure on the perineal body and avoiding as much as possible coming in contact with the pubic arch, I lay particular stress. At the introitus the vaginal canal is distensible to a very slight extent upward, due to its anchorage under the pubic arch, but to a marked degree downward, on account of the elasticity of the muscular walls and of the perineal body.

If the vaginal walls are relaxed, or the canal moderately capacious, firm pressure downward will not be so necessary, and the examining fingers may be introduced with a boring or worming motion; but if the orifice is small and the canal nar-

row much discomfort to the patient may be avoided if the fingers creep in, one after the other. The palmar surfaces of the fingers are always toward the perineum until the digits are well into the canal, when the hand is turned and the examination completed with it in that position. The manner in which it is turned is important. If the fingers are kept side by side and rotated together, if the orifice is small or the pubic arch narrow the index finger will impinge on the soft parts under the arch throughout the entire arc of the circle in spite of firm pressure downward being made at the same time, and considerable discomfort will result from the contact. A simple maneuver on the part of the examiner will almost completely obviate this difficulty. If the index finger is placed on top of the second finger before the rotation is made and kept in that position until the rotation is completed only a small portion of the soft parts under the arch will be compressed at any time.

The physician should invariably stand while conducting the digital examination. The labia are separated widely by the thumb and forefinger of one hand and are kept in this position until the examining fingers have been rotated. The tip of the second finger is introduced into the canal and firm, even pressure made on the perineal body. The end of the index finger follows, and likewise presses downward. Then the pressure made by the longer finger is relaxed and its tip is made to pass that of the index finger, and so on, pressure by each finger being made alternately until their second joints pass just beyond the introitus. Then the hand is rotated slowly, the two fingers being in the position described above, and the hand which has been separating the labia is placed on the abdomen in readiness for the bimanual examination.

As the fingers are passed along the vaginal canal toward the cervix the following points should be noted: The size and length of the canal; the presence or absence of rugæ; the amount of secretion present; the temperature (if raised); the sensitiveness; the state of the perineal body and vaginal floor—whether torn or relaxed; the presence or absence of fecal matter in the rectum. Small rectovaginal or vesicovaginal fistulas can usually be detected only on careful visual exploration of the canal, although if the induration surrounding such an opening is extensive it can ordinarily be detected by the fingers.

Examination of the Cervix: Position.—It has been very generally taught that the position the cervix occupies in relation to the long axis of the vagina is indicative of the position of the uterine fundus. This is distinctly incorrect. Normally, the long axes of the cervix and vagina form an angle slightly less than a right angle, the fundus uteri being forward. Three malpositions are possible in which the accepted teaching, as has just been said, can be shown to be incorrect: (1) The cervix uteri may be in its normal position, while the body may be bent forward, causing an acute flexion at the level of the internal os; (2) the body of the uterus may be in its normal position and the cervix be bent forward; (3) both cervix and body may be bent forward. In retrodeviation of the uterus, whether the case is one of flexion or version, the cervix is usually found more or less parallel with the vaginal canal. In lateral deviation the cervix may be drawn to one side by inflammatory contractions in the vagina or pelvic cavity, or pushed to one side by a pelvic tumor.

Size and Consistency.—A smooth, firm round cervix with circular ostium is usually indicative of nulliparity; a long, conical cervix with pinhole ostium generally denotes congenital sterility; a gaping ostium with more or less roughened or fissured edges denotes pluriparity. In pregnancy the cervix is enlarged and soft, due to congestion, but the same condition frequently prevails in acute metritis and acute cervicitis. In the latter case, it is accompanied by a more or less glairy discharge, often containing blood. A contracted, cartilaginous-like cervix may be indicative of a chronic or subacute inflammation which has progressed to the hyperplastic stage, or of the first stage of scirrhus degeneration. A cervix that is very much increased in size, that is of moderate hardness and more or less nodular, the enlargement extending to the body of the uterus, is nearly always cancerous, the disease being of the parenchymatous variety, while a cervix that is more or less immovable, and has a crater-like cavity with irregular edges, accompanied by a

foul-smelling, shreddy discharge, is in the ulcerative stage of the same disease. An epithelioma of the cervix is cauliflower-like in appearance, the organ is enlarged and soft, and it bleeds readily when touched.

Ulcers of the cervix are of rare occurrence, except when of syphilitic or tuberculous origin. The former are accompanied by pain, and yield readily to antisiphilitic treatment; the latter may easily be mistaken for the specific variety, or for carcinoma. Unless of considerable size, a specular examination is ordinarily necessary for their detection. Erosions of the cervix, on the other hand, are very common. The organ is enlarged, nodular, and usually soft, and when laceration is present, the lips are everted. When the inflammation is very marked, the condition may be mistaken for epithelioma. Small, nodular irregularities on the surface of the cervix are usually due to occlusion of the ducts of the muciparous glands, the so-called *ovula nabothi*.

Lacerations of the cervix, whether unilateral or bilateral, if of small extent, and especially if old, frequently are not recognizable to the sense of touch. A foreign body projecting from the cervical canal, or from one of the lips of the cervix, may be a mucous polyp or a pedunculated submucous fibroid or fibromyoma. The first are common, the second rare.

Conjoined or Bimanual Examination.—The examining fingers of the left hand having been brought in apposition with the cervix, the right hand should be laid flat on the abdomen, the roots of the fingers being just above the symphysis pubis. Firm pressure should be made with the fingers straight and close together and along their entire length, and the skin covering the abdomen should be pushed toward the navel. Then the fingers should be arched and their tips made to sink as deeply into the pelvis as possible, the pressure being firm and steady downward and toward the fingers in the vagina. Many gynecologists advocate arching the hand directly above the pubis and making the necessary pressure from that location. For many reasons this plan is not good, one being that frequently the bladder is not empty at the time of the examination, and pressure at this point, instead of facilitating the palpation of the uterus and adnexa, defeats the object by the bladder forcing the organs deeper in the pelvis. Pushing the loose skin upward with the flat of the hand before making deep pressure puts it less on the stretch when the fingers sink into the pelvis, and therefore gives less discomfort to the patient. To facilitate the examination of the pelvic organs, Winter¹ says:

It is very necessary to know what portions of the bony pelvis can be felt through the vagina. The posterior wall of the symphysis, the horizontal and descending ramus of the pubic bone, and the upper part of the ascending ramus of the ischium can be felt, whereas the tuberosity of the ischium can rarely be recognized, on account of the soft parts covering it. Of the descending ramus, the tuberosities can easily be made out, and are important in estimating the height of the *portio vaginalis*. The *linea ileo-pectinea* is easily recognizable in patients with relaxed vaginal walls, and under ether narcosis, as is the lower border of the sacrosacral notch. The promontory and upper portion of the sacrum can be reached if the pelvis is not too wide, but the posterior and most excavated portions can seldom be felt. At times separate muscles can be felt in the pelvis, especially if in a state of contraction. On the anterior surface of the sacrum the pyriform muscle appears to the touch as a faint welt; on the anterior pelvic wall, on the obturator foramen, the expanded internal obturator muscle can be made out. The broad belly of the iliopsoas can be felt high in the canal from within upward and from below outward.

In palpating the contents of the pelvis one very important precaution should be borne in mind: to endeavor to transmit all impressions to be gained by the examination from the hand on the abdomen to the fingers in the vagina, and not *vice versa*. The reasons are obvious. The vaginal fingers are necessarily closer to the organs to be palpated and the intervening tissues are thinner and more sensitive than the abdominal wall. To accomplish this end, the fingers in the vagina should be held firmly and steadily against the area to be examined, and the pressure transmitted from the abdominal surface. To press downward from above and make a series of jabs with the fingers in the vagina, as I have frequently seen done, is not permissible under any circumstances. Aside from adding greatly to the discomfort of the patient, the results from traumatism might

easily be serious, especially in the case of a thin-walled cyst or pyosalpinx.

The position of the hand on the abdomen, of course, will be changed as the examination progresses nearer the pubis and to each inguinal region, but the skin should always be pushed upward before deep pressure is made in each locality. A variety of movements by the hand will tend to facilitate the examination; thus, in addition to deep pressure, the muscles of the abdomen may be rolled under the fingers, or the abdominal surface sharply tapped, or successively pressed and released. At times a bimanual examination of the pelvis yields unsatisfactory results, owing to the rigidity of the abdominal walls, due either to the fact that pressure causes pain, or to nervousness on the part of the patient. If undue pain results from such an examination, the only recourse is complete anesthesia, but when nervousness and fear of being hurt is the cause of the rigidity, it frequently may be overcome by diverting the patient's attention to something not connected with the matter in hand. During the entire course of the examination she should be requested to breathe evenly and deeply, preferably with the mouth open.

Position of the Uterus.—Great diversity of opinion exists as to the normal position of the uterus. This is not surprising when it is remembered that the uterus is a movable organ, suspended in the pelvis by certain ligaments, and that it is susceptible of considerable variation within perfectly normal limits. The condition of the rectum, sigmoid and bladder, whether full or empty, one or all, naturally influences its position. For all practical purposes, the bladder being empty, it may be considered as being normally placed when, the woman being in the upright position, the plane of its long axis is slightly above that of the horizon, in other words, when it closely approaches the horizontal. Therefore, the patient being recumbent during the bimanual examination, the fundus, under these circumstances, will usually be found some two inches, more or less, back of the symphysis pubis.

The tips of the fingers in the vagina are placed directly under the cervix and steady pressure made by the hand on the abdomen. If the uterus is in its so-called normal position, and if the abdominal muscles are sufficiently relaxed, the organ can usually be brought between the fingers. If the uterus is not found in this position, the fingers in the vagina should be brought into the anterior fornix. If the organ is anterodisplaced, it will easily be outlined by the vaginal fingers through the walls of the bladder; if retrodisplaced, pressure should be made on the anterior portion of the cervix with the hope of raising the fundus so that it may be grasped. If this cannot be done, which is usually the case, the fingers in the vagina will recognize the condition when palpating the posterior culdesac.

Examination Through the Posterior Fornix.—The posterior vaginal fornix, normally, is about one inch in depth, and is concave in shape. It is separated from the Douglas culdesac by the reflection of the posterior vaginal wall covered by mucous membrane, by loose cellular tissue, and by peritonium. The examining fingers, palmar side upward, are passed to the end of the fornix and firm pressure made by the hand on the abdomen. The culdesac ordinarily is empty. Abnormally it may contain one of the following: (1) Fundus of the uterus, the organ being retroflexed or retroverted; (2) a prolapsed ovary; (3) a uterine fibroid; (4) a prolapsed coil of intestine; (5) fecal impaction or a tumor in the rectum; (6) an hematocoele, due to rupture of an extrauterine pregnancy; (7) ascitic fluid; (8) cellulitic or peritonitic exudate; (9) tumor of the sacrum.

The differential diagnosis in some cases is exceedingly difficult. The history of the case, with subjective symptoms, will frequently be of great assistance in determining the character of the tumor. In general the following characteristics will apply to the several conditions: A retrodisplaced uterus is of oblong shape, is soft, as a rule, elastic, and may be tender. The direct continuity of the cervix and uterine body may be traced. A fibroid growth is hard, and may be nodular. Unless bound down by adhesions, it is movable with the uterus. A prolapsed ovary is small, almond-shaped, and causes characteristic pain when compressed. An ovarian cyst is soft, presents a spherical outline, and is apt to be only slightly tender to the

¹ Gynäkologische Diagnostik, Leipsic, 1897.

touch. Prolapsed intestines, unless inflamed, are not sensitive, are compressible, and if not adherent may be made to leave the pouch by placing the patient in the knee-chest, and, at times, in the lateroabdominal or Sims position. Fecal impaction yields a doughy sensation, and cannot well be mistaken for anything else. A growth in the rectum will easily be diagnosed by rectal examination. An hemothecoele, the result of ruptured ectopic gestation, is soft, compressible, fills the entire pouch, and is painless to the touch. The history of possible pregnancy with sudden inguinal pain and collapse, along with other symptoms referable to the condition, makes the diagnosis comparatively easy. Ascitic fluid in the pouch is nonencapsulated, and its location will change with the patient's position. Cellulitic deposits may be found on one or both sides of Douglas' pouch, or through the lateral vaginal fornices, the result of inflammation in the laterouterine connective tissue between the folds of the broad ligament. In case this has gone on to suppuration, a smooth, convex tumor will be felt. If not of recent origin, it is apt to be hard, shrunken, and not tender; if recent, it usually will be soft, more or less boggy, and very sensitive. Enlarged lymphatic glands, presenting irregular flat surfaces, and which are tender to the touch, are frequently found in these localities.

Examination Through the Anterior Fornix.—The fingers in the vagina are now brought above the cervix, and steady pressure from the abdominal surface made with the other hand. The range of the examination here necessarily is limited. Abnormally, one of the following may be felt through the fornix: (1) An anteverted or anteverted uterus; (2) a fibroid growth springing from the anterior uterine wall or fundus; (3) a pedunculated fibroid (rare); (4) a prolapsed coil of intestine (rare); (5) a prolapsed ovary (rare); (6) anteuterine hemothecoele (rare); (7) cellulitic exudate. A stone of large size in the bladder has been mistaken for the fundus of the uterus.

Palpation of the Tubes and Ovaries.—The fallopian tubes are given off from each side of the uterine fundus, are contained within the upper free border of the broad ligaments, and vary from four to six inches in length. In other words, they are soft, easily compressible, soft-walled tubes of small diameter extending sinuously from the uterus to the ovaries. They cannot be palpated through the vagina when normal except, perhaps, at their junction with the uterus; first, because it is practically impossible to differentiate them from the surrounding tissues; and second, because the narrowness of the vaginal canal limits the area that can be palpated. Normally the tubes are not sensitive to the touch. The ovarian ligaments are frequently mistaken for them when felt through the vagina.

The ovaries are almond-shaped bodies measuring about $1\frac{1}{2}$ inches in length, $\frac{3}{4}$ of an inch in width, and are about $\frac{1}{2}$ of an inch thick. Their size varies, depending on the ripening of the follicles and the development of the corpora lutea. They lie on the upper or posterior surface of the broad ligaments about $1\frac{1}{2}$ inches from the uterus and beneath the tubes. Each ovary is attached at its lower end to the uterus by a ligament, the ovarian, measuring about $1\frac{1}{2}$ inches in length, which is attached to the uterine fundus directly beneath the origin of the fallopian tube. According to Winter (*loc. cit.*), "the ovaries lie near the lateral walls of the true pelvis directly under the ileopectineal line. Their upper borders do not quite reach the iliac bloodvessels nor their lower borders the pelvic floor. Each is so suspended that its largest diameter is parallel with the long axis of the body, the hilus is directed forward, and the free convex border posteriorly, the flattened surface lying against the pelvic wall."

Palpation of normal ovaries should not be difficult in a majority of cases. If the vagina is small, or if the abdominal walls are rigid or contain much fat, skill and long practice, however, may prove unavailing in an effort to palpate them. The first requisite of success is an appreciation of the anatomy of the parts. My experience has shown me that almost invariably students and general practitioners search for them with the examining fingers placed *under* the cervix in the posterior vaginal fornix. No account is taken of their normal position, or of the resistance offered to the fingers by the laterouterine tissue or the uterosacral ligaments. Under these circumstances, of course, the effort will be fruitless, no matter what degree of

pressure is exerted by the hand on the abdomen to force the organs deeper into the pelvis and so within reach of the fingers in the vagina. The ovaries, when normally situated, cannot be palpated through the posterior vaginal fornix. It must be remembered that the uterosacral ligaments pass from the posterior surface of the uterus, at the junction of the body and cervix, outward and backward to the second sacral vertebra. They thus form part of the upper lateral boundary of Douglas' culdesac, and upward or lateral mobility of the fingers in the posterior vaginal fornix necessarily is limited by their presence. An ovary prolapsed into Douglas' pouch may easily be felt, the intervening tissues being only the vaginal wall covered by mucous membrane, some loose cellular tissue, and the peritoneum.

If the ovaries are not prolapsed the examining fingers should be brought from the posterior fornix to the side of the cervix, and the examination continued through the lateral fornices. Here steady pressure should be made in succession, laterally, upward, and perhaps more or less downward, the hand on the abdomen pressing the pelvic contents toward the fingers. An ovary from this position cannot be so readily felt, for the reason that in addition to the vaginal wall a portion of the bladder and the broad ligament will be between it and the fingers in the vagina, but nearly always it will be recognized as a moderately hard body, uneven in outline, which causes marked pain on pressure. Frequently the ovaries may be more easily felt by combined rectoabdominal examination, a fact that should not be lost sight of in difficult cases.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

December 27, 1902. [Vol. xxxix, No. 26.]

1. Obstetrics and the General Practitioner. M. H. FUSSELL.
2. Three Cases of Involuntary Movements in Locomotor Ataxia. J. H. W. RHEIN.
3. Sanitary Measures for the Prevention of Tuberculosis in New York City and Their Results. HERMANN M. BIGGS.
4. A Peculiar Case of Recurrent Bullous Eruption. WILLIAM S. GOTTHEIL.

1.—Obstetrics and the General Practitioner.—Fussell emphasizes the obligation of the general practitioner who handles the vast majority of obstetric cases to follow hospital methods so as to make private work without avoidable mortality. Failure to periodically examine the urine is criminal neglect. Among other duties which he discusses are regulation of daily life, attention to the breasts, abdominal examination, measuring of the pelvis in the primipara, instructions to the woman as to preparation for the lying-in period. [H.M.]

2.—See *American Medicine*, Vol. III, No. 25, p. 1056.

3.—See *American Medicine*, Vol. III, No. 25, p. 1047.

4.—Recurrent Bullous Eruption.—Gottheil reports a case in which without either general or local prodromal symptoms there would appear minute vesicles, increasing to walnut size in two or three days if not ruptured. After rupture the epidermis could be removed at once, as epithelial repair had taken place under it. It recurred in the fall of four successive years. Benign pemphigus is the name that suits it best, but Gottheil hesitates to use this on account of its periodicity and the absence of inflammatory areola. [H.M.]

Boston Medical and Surgical Journal.

December 25, 1902. [Vol. cXLVII, No. 26.]

1. On the Teaching of Physical Diagnosis. WILLIAM SYDNEY THAYER.
2. Two Cases of So-called Landry's Paralysis: Autopsies. E. W. TAYLOR and G. A. WATERMAN.
3. Obstetric Antisepsis. WARREN R. GILMAN.
4. Errors in the Estimation of Urea by the Hypobromite Method. ELLIOTT P. JOSLIN.

1.—The Teaching of Physical Diagnosis.—Thayer holds that the essential points in the teaching of physical diagnosis consist in the demonstration of these points in regional anatomy, an accurate knowledge of which is necessary to the diagnostician. Such demonstrations should first be had on the normal individual. It is desirable that the student should learn by actual observation and practice the physical causes for the

signs noted on inspection, palpation, auscultation, and percussion. A proper groundwork should first be had in pathologic anatomy, and frequent demonstrations should be had in the necropsy-room of the lesions in physical examination on the living. The student should be allowed no textbook on the subject until he has learned to detect on the living individual the important physical manifestations of disease. Proper instruction requires that a subdivision of the class into smaller sections be had. In learning the fundamental essentials of physical diagnosis nothing is more important to the student than experience in an outpatient clinic, or its equivalent under the direction of an instructor. No one is fitted to begin the actual practice of medicine who has not had actual bedside experience in the observation of the more important diseases which he is to meet in general practice. This is best had by service in a hospital under some capacity. After all, the method of instruction is perhaps the smallest part. Success depends to a much greater degree upon the instructor himself. [A. B. C.]

2.—Landry's Paralysis: Report of Two Cases, with Autopsy.—Waterman reports two cases of so-called Landry's paralysis. Detailed reports of the two cases, together with the findings at necropsy, are given at length. The author concludes that in view of the large number of articles previously published on the subject of Landry's paralysis and allied conditions detailed records of the pathologic anatomy is unnecessary. Nothing definite is added by the report of the two cases beyond a further demonstration of the general fact that a fatal disease of the nervous system is not uncommon, which is explained by the findings at necropsy. Speculation concerning the cause of death in such cases appears to be unavailing in the present state of our knowledge of the question of toxemia. Much preliminary work yet remains to be done before an adequate scientific explanation is had. In the meanwhile, accurate and exact reports of clinical and anatomic findings are highly desirable in this undefined class of cases. [A. B. C.]

3.—Obstetric Antisepsis.—Gilman appears to be of the belief that the principles of asepsis and antisepsis are much more vigorously preached than practised by the average obstetrician. The ones in charge of the case, especially if untrained, should be given explicit directions in writing as to the proper preparation of patient and paraphernalia. The patient herself should be given a few simple, concise orders in reference to the proper preparation of herself, clothing, bed linen, etc. The doctor engaged in general practice should take every precaution before assuming charge of the labor case that the hand and instruments are thoroughly disinfected. Rubber gloves are especially commended by the author, not only for the protection of the patient herself, but to the doctor and patients whom he must visit subsequently. The importance of providing sheets, towels, and napkins should be thoroughly impressed upon the patient about to be confined. [A. B. C.]

4.—Errors in the Estimation of Urea by the Hypobromite Method.—Joslin holds that this method is unreliable under certain circumstances. Urea is almost $\frac{1}{2}$ ($\frac{2}{3}$) nitrogen, and consequently the urea in 24 hours can never much exceed twice the quantity of nitrogen. In a case of diabetic coma he noticed on a given date that in round numbers the nitrogen was 24 grams, and the urea by Braunstein's instrument was 44 grams, and by Squibb's instrument 80 grams. On the succeeding day the figures were respectively 19 grams, 30 grams, and 48 grams. This great discrepancy led to an investigation, and the author found that in diabetic coma and allied conditions not much ammonia, acetone, etc., are present. The hypobromite method is wholly unreliable. Other bodies like creatin, uric acid, and urates also interfered with the test. Since acetone, oxybutyric acid, and ammonia are chiefly found in diabetic patients it is best not to use the hypobromite method in these cases. The simplest procedure to enable us to determine their presence is the ferric chlorid test for diacetic acid. When this is positive the above named substances are always present and an excess of ammonia is probable. [A. B. C.]

Medical Record.

December 27, 1902. [Vol. 62, No. 26.]

1. On Some of My Principles in Orthopedic Surgery. PROF. ADOLPH LORENZ.

2. What Can Be Done to Prevent the Spread of Syphilis. E. HARRISON GRIFFIN.
3. X-light in Therapeutics. CLARENCE EDWARD SKINNER.
4. Typhoid Gangrene. CHARLES E. NAMMACK.
5. The Etiology of Relapse in Enteric Fever. H. N. RAFFERTY.
6. Pasteurized and Sterilized Milk as a Cause of Rickets and Scurvy. E. M. SILL.

1.—Principles in Orthopedic Surgery.—Lorenz says so long as the bones are elastic enough he prefers osteoclasts to osteotomy, the latter being reserved for adolescents and adults. In cases of hip deformity he uses the chisel only in cases of complete ankylosis. Knee-contraction is corrected by intra-articular modeling redressment so long as the slightest mobility is found. In all deformities of the foot, both paralytic and congenital, he relies exclusively on modeling redressment of the foot; wedge-shaped excision of the bones of the foot is nothing short of a deplorable mutilation. On general principles he prefers bloodless operation so long as there is a possibility of securing the desired result. He opposes extirpation but commends subcutaneous myomectomy of the sternomastoid in persistent wry-neck. Caput obstipum is cured by modeling redressment of the cervical scoliosis combined with subcutaneous myomectomy of the sternomastoid muscle; and the congenital form may be thus cured without myomectomy but with myorrhexia of the sternomastoid. Another principle followed is that all deformities should be reduced after the so-called "central correction" method, which means that every deformity should be corrected in the vertex of its angle. Genuvalgum is usually treated by supracondyloid osteotomy; epiphysiolysis of the lower end of the femur is better, but is restricted to those between 5 and 16 years. Another principle is to save all the bone possible at the expense of the soft tissues, hence cuneiform osteotomies and resections *en bloc* should be avoided and linear osteotomy used; this is available even in bow-legs with anterior curvature. He has never resected a joint for tuberculous disease in a child. In tuberculous disease of the hip-joint he uses extension only so long as there is pain, and uses massage to prevent muscular wasting so soon as freedom from pain will permit it. His final aim is to secure solid, bony ankylosis of the joint together with good position, which is slight abduction of the leg. In cases of scoliosis he is wholly opposed to mechanical supports, especially those worn night and day. [A. B. C.]

2.—Prevent the Spread of Syphilis.—Griffin says in an active practice for many years as a nose and throat specialist, his records show that every thirteenth patient had syphilis in some form. He is fully convinced that it is caught and dispersed by the mucous patch more than by the primary chancre. The author cites many means, such as public drinking cups, cigarmaker's saliva, fruit vender's saliva, kissing, toys manipulated by the mouth, etc., by which syphilis is communicated extravenereal. The gist of this interesting and instructive article is that the public should be thoroughly informed as to the contagiousness and general character of syphilis, and that means should be adopted to prevent or greatly limit its extravenereal dissemination. Every dispensary patient should be supplied with a card on which is printed in the patient's language the general nature of the disease, and rules to govern his conduct. Cases of syphilis should be reported to the Board of Health the same as other infectious diseases. [A. B. C.]

3.—Röntgen Light in Therapeutics.—Skinner says the Röntgen rays have been found of value in the treatment of acne, psoriasis, eczema, rheumatism, some forms of neuralgia, neuritis, anthrax, lupus, and cancer. Its great interest naturally has to do with treatment of cancer, and in this affection it is used in both superficial and deep malignant growths. The length of time it has been used is too short for statistics to be of value, but so far only about 5% of superficial malignant growths "cured" by Röntgen rays have recurred, and about 80% of all the superficial cases subjected to treatment are cured or arrested. In the deep-seated growths prognosis is much less hopeful but not without some encouragement. In September, 1902, the author reported the condition of 33 patients with deep-seated malignant growths, which he had had under treatment for nine months. His further report on these is as follows: Out of 33 cases, we have up to the present time 3 apparent cures; 13 that have been permanently benefited and are still improving, with good prospects of ultimate cure; 12 that were

temporarily benefited; 2 that experienced no benefit; and in 3 the treatment was discontinued by the patient before enough applications had been made to indicate whether or not any results would have been produced. [A.B.C.]

4.—Typhoid Gangrene.—Nammack reports a case in which almost the whole of each lower extremity was involved. He believes the commonest time of occurrence is in the second and third weeks, though it may begin as late as the seventh week. It is possible in mild as well as severe cases. The onset is determined by a weak heart, sluggish circulation, general enfeeblement, obstruction of the bloodvessels from arteritis or autochthonous thrombosis, and the diffusion of bacilli and their products throughout the tissues. The latter probably set up a specific typhoid arteritis, which occurs more readily in those with arteriosclerosis, amyloid degeneration, syphilis, mechanical or chemic injury or an inflammatory process which injures the intima. With gradual arterial obliteration the gangrene is dry; when the vein is obstructed moist gangrene develops. [H.M.]

5.—Etiology of Relapse in Typhoid Fever.—Rafferty believes reinfection may occur by inoculation of healthy intestinal glands with sloughs from those first infected; by a deposit of bacilli in the gallbladder with or without cholecystitis, and later expulsion of the colony with bile into the duodenum, and by a colonization of bacilli in the spleen. Sequels apparently due to the specific organism have followed many years after the attack and living germs have been found in bodies three months after death. [H.M.]

6.—Pasteurized and Sterilized Milk as a Cause of Rickets and Scurvy.—Out of 179 infants fed for 9 months of the year on pasteurized and 3 months on sterilized milk Sill reports the occurrence of 97% of cases of scurvy and rickets. He states that a temperature much above blood heat disorganizes the albuminoids and mineral constituents. Pure milk should be secured by inspection of cows and utensils. [H.M.]

New York Medical Journal.

December 20, 1902. [VOL. LXXVI, No. 25.]

1. Endometritis. H. J. BOLDT.
2. Laryngectomy for Malignant Disease. FRANK HARTLEY.
3. Gynecologic Massage. BERNARD S. TALMEY.
4. Alexander's Operation. LE ROY BROUN.

1.—See *American Medicine*, Vol. IV, No. 22, p. 847.

2.—Laryngectomy for Malignant Disease.—Hartley reviews the various steps in the development of the present status of the operation, and narrates his personal experience with 5 patients. The first case was a man of 49; well 4 years after operation. The second case was a man of 60, who after 4½ years was free from recurrence. In the third case there was no recurrence at the end of 5 years. In the fourth case there was recurrence in the deep cervical glands 14 months after operation, it was then considered inoperable, and death occurred 3 months later. The fifth case was a woman of 41; no recurrence 10 months after operation. The author believes that statistics are much more favorable now than formerly, and calls attention to the remarkable development of a voice in some patients after a total excision of the larynx has been done. He lays special stress on the necessity of the most careful after-treatment in these cases. [C.A.O.]

3.—Gynecologic Massage.—Talmey believes that massage is a helping therapeutic agent in many gynecologic cases, and that it deserves more attention. The indications given are: Chronic perimetritis and parametritis, chronic metritis and endometritis, subinvolution and hyperemia of the uterus, uterine hemorrhages, and retroflexion and prolapsus. Massage should not be administered in acute inflammations. The general rules followed by the author are those laid down by Kellogg, and are as follows: (1) The treatment should not be employed until two hours after eating; (2) the bladder must be emptied; (3) the fecal accumulations must be removed; (4) the patient has to breathe deeply and regularly; (5) too much pain should not be caused; (6) all deep kneading movements should be slow; (7) the patient must be warned that she may feel some pains after the first sitting, and told that cold compresses will alleviate them. She must also be told that at the

second sitting the abdomen may be more sensitive than the first time. He believes that by applying massage in these cases the performance of a number of hysterectomies, dilations, curetments and oophorectomies will become unnecessary. [C.A.O.]

4.—Alexander's Operation.—Broun states that in suitable cases no operation can in his hands yield the same uniform clinical result. The danger is almost *nil*, and the operation is of far less gravity than other surgical means in use for the relief of the same symptoms. The anatomic result obtained is all that can be desired, and is effected without the establishment of new pathologic adhesions, the intentional formation of which form the basis of all vaginal fixations or ventral suspensions. He believes that the danger of inguinal hernia following this operation is greatly exaggerated, provided the operation is properly done, without laceration of the surrounding tissues in a long continued search for the ligament. If such laceration has taken place, hernia is impossible, if the operator continues his incision to the internal ring and does a Bassini operation, which does not prevent his shortening the ligaments at the same time. Patients having adherent retroverted uteri cannot be benefited by this operation unless the adhesions have been previously broken up. In such cases he prefers to open the abdomen, and after breaking up the adhesions to do either a ventral suspension or Bissell's operation, which consists in taking out a section of both round and broad ligaments sufficient to hold the uterus in a forward position. [C.A.O.]

Medical News.

December 27, 1902. [Vol. 81, No. 26.]

1. Recent Advances in Electrotherapeutics. WILLIAM J. MORTON.
2. Imitation, Suggestion, and Social Excitements. JOHN BESSNER HUBER.
3. Cutaneous Angiomas and Their Significance in the Diagnosis of Malignant Disease: A Statistical Study Based Upon the Observation of Nearly 400 Cases. DOUGLAS SYMMERS.
4. The Rapid Microscopical Diagnosis of Fresh Tissue: With Special Reference to Staining. F. T. BILLINGS.
5. Indications for the Performance of the Mastoid Operation. WILLIAM C. BRAISLIN.

1.—Recent Advances in Electrotherapeutics.—According to Morton the elevation of the electromotive force and its oscillations or alterations make possible the electrification of the whole body at once, increasing oxidation and tissue metamorphosis. This is especially useful in diseases of perverted nutrition like rheumatism, obesity, etc. He briefly discusses the applications of the static induced current, the wave current, the Tesla and the D'Arsonval transformers, and the Oudin resonator, the brush discharge, the Geissler tube, and the Bequerel and Röntgen rays. The apathy of the profession toward this branch of therapeutics is incredible. [H.M.]

2.—Imitation, Suggestion, and Social Excitements.—In discussing this subject Huber states that the normal individual is governed by the higher brain centers, while in the savage conduct is unreasoning, passionate, impulsive, imitative and instinctive. The changes produced in an intelligent person by hypnotism illustrate these differences. According as the hypnotizer wills he gives expression to the basal emotions, fear, hate, blind reverence for unworthy objects, etc. Other factors produce the same results, mainly imitation, suggestion, and the force of social excitement, through which the power of calm observation and logical thought is lost. Huber illustrates the influence of these factors in Christian Science, the anti-Semitic mania, race riots, etc. The crowd is an entity not analogous in its psychism to that of the individuals composing it. All progress has been achieved mainly through the efforts of individuals who can withstand the hypnosis that has seized their fellows, and can influence them along moral, altruistic and religious lines. [H.M.]

3.—Cutaneous Angioma and Malignant Disease.—Symmers in examining nearly 400 patients found cutaneous angiomas as frequent among those without as with malignant disease. It was observed that their occurrences increase rapidly with each successive decade of life and the inference is that arteriosclerosis bears an important causal relationship. His conclusions are: That skin angiomas bear no relationship to malignant disease and that their existence, even in large num-

bers, is not to be viewed with any degree of alarm so far as cancer is concerned. That they form a frequent, practically an invariable, concomitant of the decay of advanced years, and in both young and old are probably significant of some form of well-marked arterial degeneration. [A.B.C.]

4.—Rapid Microscopic Diagnosis of Fresh Tissue.—Billings says that as a staining material hamalaun, a preparation of hematein, an oxidation of hematoxylin, is much superior to the latter. He sums up the different steps of hardening and staining sections of fresh tissue for microscopic examination: (1) Fresh specimen set upon freezing stage, frozen and cut; (2) sections are wiped off knife and placed in water; (3) alcohol, 50%, two minutes; (4) alcohol, 95%, three minutes; (5) hamalaun, three minutes; (6) wash in water; (7) alcoholic solution of eosin, 30 seconds; (8) alcohol, 80%, three minutes; (9) alcohol, 95%, three minutes; 10 carbo-xylol, two or three minutes; (11) mount in Canada balsam. The whole process, cutting included, should not take more than 25 minutes. The result as a rule is entirely satisfactory. At times the sections appear cloudy, but this is generally due to faulty technic and can be avoided. The rapid method is of great value in general surgical and gynecologic practice. [A.B.C.]

5.—Indications for the Mastoid Operation.—Braislin says the symptoms of greatest significance in leading one to undertake immediate operation are pain, continuous and severe, radiating upward along the side of the head to the vertex, backward to the occiput, or more rarely forward to the frontal region; the temperature even in children does not often keep at a high point after the first days of acute illness, but is often markedly irregular; a falling of the posterior superior wall of the external auditory canal, caused by edema of the periosteum and tissues over the mastoid cells, or it may be due to the actual burrowing of pus. It is possible to mistake this condition for furuncle of the canal. Tenderness over the mastoid is the rule in cases calling for operation, but there are exceptions. Other severe symptoms may be present pointing to perforation of the tegmen tympani. Some operators believe an exploratory mastoidectomy is justifiable at any stage of mastoiditis. But operations are thus often done in acute cases which would recover without operation. It is proper in his judgment to operate on cases in the quiescent states of chronic mastoid suppuration; both because the inflammation and irritating character of the discharge from the ear are producing destruction of the middle ear adnexas, with consequent progressive loss of hearing, and also because sooner or later the disease is almost sure to require operation. [A.B.C.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

REVIEW OF LITERATURE

The Influence of Soil, Fabrics, and Flies in Disseminating Typhoid Infection.—Firth and Horrocks,¹ in consequence of experimental investigations, draw the following conclusions, which are equally applicable to typhoid bacilli recently isolated from stools as to old cultures that have been in the laboratory for many months: 1. There is no evidence to show that the typhoid bacillus when placed in soil displays any disposition or ability to either increase in numbers or grow upward, downward, or laterally. 2. The typhoid bacillus can be washed through at least 18 inches of soil by means of water, even when the soil is closely packed down and no fissures or cracks allowed to exist. 3. The typhoid bacillus is able to assume a vegetative existence in ordinary and sewage polluted soil and survive therein for varying periods amounting in some cases to 74 days. 4. The presence or absence of organic nutritive material in the soil appears to be a largely negligible factor, since the typhoid bacillus can survive in a soil indifferently well whether it be an organically polluted soil or a virgin soil, and whether it receive dilute sewage or merely rain-water. 5. An excess or great deficiency of moisture in soils appears to be the dominant factor affecting the chances of survival of the

typhoid bacillus in, or at least the possibility of recovering it from, soil. 6. From fine sand allowed to become dry the typhoid bacillus can be recovered on the twenty-fifth day after inoculation. 7. From fine sand kept moist with either rain or dilute sewage the typhoid bacillus cannot be recovered later than the twelfth day after fouling; this inability to recover the organism is due probably not so much to its death as to its being washed down into the deeper sand layers by liquids added. 8. In peat the typhoid bacillus appears to die out rapidly, as it cannot be recovered from it after the thirteenth day. 9. From ordinary soil kept damp by occasional additions of rain-water the typhoid bacillus can be recovered up to and on the sixty-seventh day. 10. From a similar soil kept damp by addition of dilute sewage the typhoid bacillus is recoverable up to the fifty-third day. 11. From a similar soil kept damp by occasional additions of dilute sterile sewage the typhoid bacillus is recoverable up to the seventy-fourth day. 12. In a similar soil after a heavy rainfall the typhoid bacillus disappears at once from the surface layers. 13. From a similar soil allowed after inoculation to become so dry as readily to be blown about as dust the typhoid bacillus can be recovered up to and on the twenty-fifth day, and typhoid infective material can be readily translated from dry soil and sand by means of winds and air currents. 14. In a sewage polluted soil recovered from beneath a broken drain the typhoid bacillus is able to survive up to the sixty-fifth day. 15. From a piece of khaki drill inoculated with an emulsion of typhoid bacillus and then allowed to dry, the bacillus is recoverable up to and on the seventy-fourth day. 16. From a piece of khaki serge similarly treated the typhoid bacillus is recoverable up to and on the seventy-eighth day. 17. From a piece of blue serge similarly treated the typhoid bacillus is recoverable on the seventy-eighth day. 18. From a piece of khaki drill fouled by liquid typhoid feces and then allowed to dry the bacillus is recoverable on the seventeenth day. 19. From a similar fabric fouled by solid or semisolid typhoid feces and then allowed to dry the bacillus is recoverable on the ninth day. 20. The typhoid bacillus is able to survive in surface soil an exposure to 122 hours of direct sunshine, extending over a period of 21 consecutive days. From a piece of infected serge the typhoid bacillus is recoverable after the fabric has been exposed to 50 hours of direct sunshine spread over a period of 10 days. 21. Ordinary house flies (*Musca domestica*) can convey typhoid infective matter from specific excreta or other polluted material to objects on which they may walk, rest, or feed. Such infective material appears to be attached not only to their heads (mandibles, probably) but also to their legs, wings, and bodies. It has not been proved that the typhoid bacillus passes through the digestive tract of the fly. [A.O.J.K.]

Toxin of Tapeworm.—Massineo and Calamida¹ prepared filtered extracts of all the common species of tapeworm, and with these extracts inoculated hypodermically guineapigs, rabbits and dogs, in all of which symptoms of intoxication were produced. The authors believe that the pathologic changes produced in the intestines of the hosts of tapeworms are due to a secretion of toxin rather than to mechanical action. [C.S.D.]

Concerning the Pathogenesis of Typhoid Fever.—Schottmueller² has isolated the typhoid bacillus in 182 cases (83%) out of 220 in which he made bacteriologic blood examinations. He has found them relatively oftener in adults than in children, but sex did not seem to affect the result. In a few cases he discovered them as early as the first 24 hours, and numerous positive results were noted about the fifth day. During the second and third week they were detected in every sample examined. The bacilli disappeared very quickly as soon as the temperature began to decline, and by the time the temperature was normal no case gave positive results. Relapse was always associated with a return of the bacilli and they occasionally reappeared for a short time in cases when there was no relapse but a rise in temperature. Nothing else accounted for this rise. In grave cases the number of colonies was high even at an early date, and as the case improved the colonies became fewer or vice versa. For the purposes of

¹ Journal Méd. Vet. et Zootech., September, 1901. Experiment Station Record, September, 1902.

² Münchener medicinische Wochenschrift, September 23, 1902.

¹ British Medical Journal, September 27, 1902.

diagnosis and prognosis, therefore, this method of examination is an extremely valuable one; it certainly is of much greater value than the Widal test. He considers the intestinal lesions not as primary lesions of typhoid, but rather as metastases, the typhoid bacilli being carried to the lymph follicles by way of the bloodstream. [E.L.]

The Leukocytes in Malaria.—Mallend¹ states that cases of malaria show constantly at some period an increased percentage of large mononuclear leukocytes. This is most marked at times when the patient is free from fever, though there may be actually an increase when the patient is in a rigor; but no positive conclusions can be drawn from the leukocytes either during the rise of temperature, or even shortly before its onset. It is believed that in a case suspected to be malaria the presence of 10%, or perhaps 12% or over of large mononuclear cells is strong presumptive evidence that the case is one of malaria, and that the presence of less than 8% is strong presumptive evidence that the case is not one of malaria. The consideration of the percentage of the characteristic large mononuclear cells is of more value than that of the aggregate of large lymphocytes and large mononuclears. [A.O.J.K.]

Transmission of Tuberculosis from Human Beings to Cows.—Fibiger and Jensen² report their observations of five fatal cases of tuberculosis, the original seat of which was the alimentary tract. The patients ranged in age from four months to 42 years. Autopsy corroborated the diagnosis in each case. Portions of caseating glands obtained after death were injected into calves and cows. All the animals thus subjected to the injection developed tuberculosis of varying degree. The authors conclude that their patients were infected with bovine tuberculosis, and lay stress upon the frequent occurrence of this disease following the ingestion of milk obtained from tuberculous cows. [W.E.R.]

Glycosuria and Tabes.—Meyer³ reports a case of glycosuria and tabes, in which the excretion of sugar is absolutely independent of the carbohydrates in the food, as the assimilative power of the body for carbohydrates is not changed in the least. He proved this by giving the patients large amounts of grape sugar. He concludes from this that in this case of tabes the glycosuria is not the result of a primary alteration in metabolism, but that it is a symptomatic expression of a tabetic nuclear affection in the floor of the fourth ventricle. [E.L.]

Indications for the Use of the Stomach-tube.—Henry W. Bettman⁴ believes that most of the gastric disorders can be overcome by a judicious regulation of the habits and diet of the patient. In more advanced or obscure cases, especially in those in which organic changes have occurred in the stomach, the stomach-tube offers a ready means of learning the exact pathologic condition. Furthermore, in conditions in which the stomach is in a constant state of irritation by secreted mucus, food remnants, fermentation products, etc., the tube is a rational and sure method of relieving the organ of its embarrassment and giving it a needed rest. [F.C.H.]

The Histology of the Gastric Mucosa in Pathologic Conditions of the Stomach.—Einhorn⁵ tabulates 34 additional cases of disorder of the stomach in which he was enabled to examine pieces of the gastric mucous membrane, gives the details of the histologic findings, and his opinion of their significance. He believes that the secretory functional disturbances of the stomach are not based on a primary change in the mucous membrane of the stomach, but that they rather produce, if they last for a longer time, lesions of the mucosa of greater or less extent. The diagnosis of carcinoma of the stomach may under specially favorable conditions be made from a piece of gastric mucosa if a direct invasion of the gland substance by epithelial cells can be observed. Therapeutically attention must be directed principally toward the improvement of the general body state, and only secondarily by means of special measures against any secretory anomalies that may be present. [A.O.J.K.]

Traumatic Nephritis.—Curshmann, Jr.,⁶ reports a case of

traumatic nephritis belonging to that group, where for a long time albuminuria and casts existed without the appearance, however, of other nephritic symptoms. The patient's injury was a severe one, producing numerous minor bruises and abrasions. He was nauseated and vomited; his abdomen was tender and distended; in the region of the right kidney could be felt a mass as large as a head. He suffered at first from total anuria, later, and for some time after, from oliguria and dysuria; there was no hematuria and albuminuria. Recovery was slow, and six weeks later the mass, somewhat smaller, could still be felt in the right side of the abdomen. During an examination 12 months later albumin and casts were discovered, both in small quantity, but they were found in every specimen of urine. No other renal symptoms existed, and the right kidney was not enlarged. Examination of all other organs proved negative; the blood-pressure was even below normal. All the symptoms point to a traumatic laceration of the kidney, limited to its peripheral portions as manifested by pressure of abdominal hematoma and absence of hematuria. As the picture changed to circumscribed interstitial nephritis, albuminuria and casts appeared in the urine. The absence of changes in heart, bloodvessels, and blood-pressure serve as differential points from other nontraumatic nephritis. [E.L.]

On Spastic Constipation.—Von Sohlern¹ considers the treatment of a chronic constipation as one of the most difficult and thankless chapters of internal medicine. The neurosis known as *obstipatio spastica* was first described by Cherahevski in 1883, and afterward by Fleiner, Westphalen, and Ebstein. It is undoubtedly more common than is generally suspected, and Kernig, of Petersburg, is referred to as having recognized it frequently through the years and as giving potassium bromid as a laxative. The affection is especially one of great cities and of the strenuous modern life which determines a neurotic condition in so many families. In the front rank of symptoms is the loss of ability to defecate correctly, the stoppage and the spasms which give rise to cramping pains before, during or after the passage. The feces are never normal, usually poor in water, thick, pitchy, or hard, and always of small caliber. The palpable, stiffened intestinal cord is the most essential symptom, though difficult of detection in patients with thick abdominal walls. *Obstipatio spastica* is not to be regarded as a disease *sui generis*, the condition is only a symptom, usually of a functional, at times of an organic disease of the nervous system, but it is to be recognized and treated as a disease since the patient comes to the physician not for his neurasthenia but for the spastic obstipation. Rest in bed is the most important point to be emphasized in the treatment. The patient should remain in bed for 14 days or four weeks, until defecation is painless and takes place spontaneously or with only slight help. The diet should be soft, nonirritating but very nourishing; rich milk, honey, butter, bouillon, with addition of roborant or sand-tropon, tender meats with rice, noodles, potato broth, macaroni, are suggested. The patient should be given all the water he will drink. Continuous warm applications to the abdomen during the day and a binder at night should be used. For medication von Sohlern recommends the officinal preparation of potassium bromid *mixture nervina*, a teaspoonful morning, noon and night. [C.S.D.]

The Public Health Aspects of Summer Diarrhea.—Newsholme,² pointing out that in 1900 summer diarrhea was responsible for 3.89% of the total deaths in England and Wales (as compared with 7.6% for the combined deaths from smallpox, measles, diphtheria, scarlet fever, pertussis, typhus, and typhoid fever) discusses the question from the public health aspect. Epidemic diarrhea is chiefly a disease of urban life, and as a fatal disease is a disease of the artisan and still more of the lower laboring classes to a preponderating extent. Towns with a high temperature and a deficient rainfall, especially in the third quarter of the year, suffer severely from diarrhea. This relationship is so close that the towns may be classified meteorologically in the order in which they ought to stand in reference to diarrhea, and their true relative position as to domestic and municipal sanitation may be ascertained when we

¹ British Medical Journal, September 27, 1902.

² Berliner klinische Wochenschrift, September 22, 1902.

³ Münchener medicinische Wochenschrift, September 16, 1902.

⁴ The Cincinnati Lancet-Clinic, September 27, 1902.

⁵ American Journal of the Medical Sciences, Vol. cxiv, p. 471, 1902.

⁶ Münchener medicinische Wochenschrift, September 23, 1902.

¹ Berliner klinische Wochenschrift, September 29, 1902.

² Practitioner, Vol. lxi, p. 161, 1902.

know whether they occupy a better or a worse position on the list of towns than that which their meteorologic place would indicate as rightly belonging to them. Among populations living on impervious and rocky soils diarrhea is not so prevalent, probably because polluting fecal and other organic impurities do not cling to or soak into such soils. Diarrhea is most prevalent where the systems of removal of sewage and house refuse are the least satisfactory. The exceptionally good position of certain towns in which pail-closets are largely used must be regarded as due to the favorable climatic and physiographic position of these towns, probably aided by efficient municipal scavenging; and it is almost certain that their position might be still further improved by the general adoption of a water-closet system. The fundamental condition favoring epidemic diarrhea is an unclean soil, the particular poison from which infects the air, and is swallowed, most probably with food, especially milk. Milk is not the actual cause of diarrhea; it is the vehicle of infection, just as mosquitos are a vehicle of malaria, or rats of plague. [A.O.J.K.]

Concerning the Formation of Sugar in the Animal Organism.—To determine if sugar elimination is increased after ingestion of fats, or which component parts of fats are the cause of this increase, Luethje¹ has experimented with dogs who had been made diabetic by the removal of their pancreas. Neither olive oil nor fats given subcutaneously were able to increase the amount of sugar excreted. When glycerin was given the glycosuria increased considerably; the yolks of eggs, and especially lecithin, produced the same results. Similar observations were made when these substances were fed to a diabetic patient. Therefore he thinks that substances rich in glycerin and lecithin should be withheld from the diet of a diabetic. [E.L.]

On the Action of Alcohol on Human Metabolism.—Arthur Clopatt² describes a research which he made upon himself in the Physiologic Laboratory of the Carolini Institute of Stockholm, in which he confined himself to a special diet of exactly ascertained value for a period of 12 days. A part of the fat was replaced by an isodynamic amount of alcohol for a second period of 12 days, which was followed by a third period of 7 days in which the alcohol was omitted with no corresponding replacement of fat. As the result of the examination of the feces and urine throughout the entire period, he arrives at the following conclusions: 1. Alcohol not only prevents waste of nitrogen free foodstuff, but also of albumin after the body has become accustomed to it. 2. Alcohol exerts no appreciable action on the absorption of foodstuffs by the intestine. [C.S.D.]

A Case of Severe, Probably Pernicious, Anemia, with marked general and coronary atheroma, in which many evidences of aneurysm were present without anatomic explanation for them, is reported by Edwards.³ The pulsation present in the case was extensive, markedly expansible, and attended by a bruit, abdominal as well as thoracic, and still no anatomic explanation for it was found at the necropsy. [A.O.J.K.]

Lobar Pneumonia in Young Children.—J. A. Coult⁴ gives statistics showing that croupous pneumonia is more frequent in the first two years of life than any other period. It is often difficult to distinguish it from the catarrhal form, which is frequently grafted on the other. In 60% of cases treated in two years, it was localized in the apex. This may aid in diagnosis. It generally runs a more typical course than when occurring at the base. Harm is done often by overfeeding. The child should have plenty of water. A temperature of 106° should always be actively treated, as also a sustained temperature above 104.5°. Pain or insomnia profoundly influence the temperature. Opium will control all three, except when these occur from exhaustion, accompanied by restlessness, dry mouth, excessive thirst, and rapid, feeble pulse, when alcohol is indicated. Small enemas at 75° F., or colder, reduce temperature more and longer than wet packs or sponging. Antipyrin may be guardedly used with alcohol, and quinin may be combined with it to prolong its action. Leeches are best for pain from pleurisy, or dry cupping may be used. The ice-bag may

cause collapse, and poultices interfere with chest movements. Insomnia may be relieved by laxatives, the ice-bag to the head or darkening the room. When alcohol and strychnin fail to relieve the heart, bleeding is indicated. Middle-ear disease should always be looked for. Simple incision is the best operation in empyema. [H.M.]

A Case of Traumatic Pneumonia.—Pneumonia is but rarely due to traumatism. Of 3,373 cases collected by Stern, only 44, or 1.3%, could be traced directly to trauma. Schild¹ reports the case of a 64-year-old man who fell on the ice, striking the right side of his chest. During the same evening he was taken with a chill, followed by fever, chest pain, dyspnea, cough, etc. He developed a typical croupous pneumonia of the upper right lobe, which diagnosis was verified at autopsy; there were no other injuries to the chest wall. [E.L.]

Equine Malaria.—A. Theiler² holds the pathologic organism of this disease to be distinct from that of human malaria and has, therefore, applied to it the name *Plasmodium malariae equorum*. The affection appears to be identical with that described in 1883 by Wiltshire under the name anthrax fever, and also with the disease ordinarily known as biliary fever. Theiler finds, however, that the number of parasites in the blood may be greatly diminished by the administration of quinin, as is the case in human malaria. [C.S.D.]

Two Hairy Tumors in the Stomach.—Ekehorn³ reports two cases of hairy tumor (trichobezoar) in the stomach removed by operation, and gives an analytic survey of the cases hitherto reported. The principal characteristics of the condition are: More or less gastric disturbance, and a large, very movable tumor in the region of the stomach. Contrary to the general view, the author claims that hysteria and insanity very rarely cause these tumors. [D.R.]

The Surgical Treatment of Cirrhosis of the Liver.—Greenough,⁴ from a study of the subject and a review of the literature, concludes: The condition known as biliary cirrhosis, with enlarged liver, jaundice, and fever and without ascites is accompanied in a certain proportion of cases by an infection of the bile ducts. The drainage of the bile ducts by cholecystostomy is a proper operation for the relief of this condition when evidence of infection is present and symptomatic treatment has failed to effect relief. Of 105 cases of liver cirrhosis which presented the symptoms of ascites 42% were improved and 58% not improved by Talma's operation or one of its modifications. The mortality within 30 days was 29.5%. Nine cases were improved in health two years after the operation. The nine cases of continued relief presented no marked differences from the general character of the cases. The cases in which the liver was enlarged gave a lower mortality and a higher percentage of improvement than cases of atrophic liver. Cases of suture of the omentum between the layers of the abdominal wall gave a lower mortality and a slightly higher percentage of improvement than cases in which only the peritoneal surfaces were brought in contact. Drainage increases the danger of septic infection and peritonitis and is to be avoided. If necessary tapping may be done after the operation. The presence of adhesions or perihepatitis is of good prognostic import as regards the success of the operation. The number ofappings before the operation and the presence of edema of the feet and legs are of less prognostic importance than the general condition of the patient, the size of the liver, and the functional activity of the liver cells. Talma's operation or one of its modifications is of proved benefit in a certain limited number of cases of liver cirrhosis, primarily for the relief of the ascites, and secondarily for the relief of other symptoms of portal congestion. The dangers attending the operation are mainly due to the weakened resistance of the patient rather than to the operation itself. The selection of cases suitable for operation demands more judgment than has been exercised hitherto. The operation is not indicated in cases of ascites due to causes other than cirrhosis of the liver. The operation is contraindicated in the presence of renal or cardiac disease and when good evidence does not exist

¹ Münchener medicinische Wochenschrift, September 30, 1902.

² Berliner klinische Wochenschrift, September 29, 1902.

³ American Journal of the Medical Sciences, Vol. cxxiv, p. 669, 1902.

⁴ Edinburgh Medical Journal, September, 1902.

¹ Münchener medicinische Wochenschrift, September 23, 1902.

² Schweiz. Arch. Tierh., 43, 1901. Experiment Station Record, September, 1902.

³ Nord. med. Arkiv, 1902, Afd. 1, (Kirurgi) Häft. 3, No. 15.

⁴ American Journal of the Medical Sciences, cxxiv, 979, 1902.

that sufficient functional liver tissue remains to maintain life. It is also contraindicated when complications exist sufficient in themselves to make the result of operation uncertain. [A.O.J.K.]

Diphtheria and the Diphtheria Bacillus in Scarlet Fever.—Schabad¹ has made extensive clinical and biologic studies regarding the relation of diphtheria and its bacillus to scarlet fever. From his experimental work and extensive clinical material he makes the following conclusions: The combination of scarlet fever with diphtheria is noticed not only during the convalescence from scarlet fever but also during the height of the disease, and even at its beginning. To make a diagnosis of this combination at the onset of the disease it is absolutely necessary for the clinical symptoms to correspond with the bacteriologic findings; that is, the clinical symptoms of diphtheria must be present as well as the diphtheria bacilli. The bacilli cultivated from the pharynx in cases in which the diphtheria arises during the convalescence from scarlet fever or during the acme of the disease possess normal virulence for guineapigs; at the beginning of the disease, although having all the other marks of true diphtheria bacilli, they are but slightly, if at all, virulent for them. This absence of virulence, however, does not exclude their etiologic activity in producing the combination pathologic process. In addition to these cases others were found in which diphtheria bacilli were present at the beginning of scarlet fever but without producing the symptoms of diphtheric sore throat. Comparing the results in these cases with those in which scarlet fever and true diphtheria were combined it must be supposed that in the former the diphtheria bacilli play the part of saprophytes and do not take any part in the pathologic process. To prevent the spread of diphtheria in the scarlet-fever wards of hospitals it is necessary to isolate all scarlet-fever patients having diphtheria bacilli in their throats. To bring this about the pharynx of every patient should be examined bacteriologically when admitted to the hospital. Diphtheria antitoxin should be used in all cases in which the diseases are combined, whether this be at the onset, during the fastigium or during the convalescence from scarlet fever. [E.L.]

The Nature of Diabetes.—Hess² gives a very good summary of the theories concerning diabetes, together with a description of some experiments to elucidate the pancreatic factor in the disease. There are two views regarding the connection between the pancreas and diabetes, one that the organ furnishes a glycolytic ferment that keeps the quantity of sugar at a certain level in the blood; the other, that it normally neutralizes a toxic substance that, when accumulating in the blood, causes diabetes. The author's experiments did not confirm the existence of such a neutralizing substance. One interesting feature in his experiments on dogs is that in every instance, after the extirpation of the pancreas, the animals developed an extreme fatty degeneration of the heart. [D.R.]

Braxy.—D. J. Hamilton³ contributes a historic and descriptive account of this infectious disease, which he treats of as something distinct from anthrax, to which it is referred by many writers. [C.S.D.]

Tuberculosis of the Parotid Gland.—Scudder⁴ reports a case of tuberculosis of the parotid gland occurring in a woman, aged 57, treated by excision and followed by recovery. At the time of the report, a year and a half after the operation, no recurrence was evident. [A.O.J.K.]

Bone Metastases in Tumors of the Thyroid Gland.—The following case is reported by Wagner.⁵ A woman, 48 years of age, was suddenly seized with severe pain in the left hip. The only other complaint made by her was of a feeling of tension on swallowing. On examination, a number of nodules were found along the anterior margin of the sternocleidomastoid muscle, also a goiter just above the sternum and a deep-seated infiltration in the left inguinal region. The patient died in coma with the symptoms of a general intoxication. At the autopsy, a small, spindle-celled sarcoma was discovered in the thyroid gland, and a similar growth in the neck of the left femur. Thyroid tumors have a predilection for giving metas-

tases to bones, although more frequently to the flat than to the long bones. The metastases usually appear early, and are generally single. From an operative point of view they constitute a surgical "Noli me tangere." Von Eiselsberg has rightly said that in all cases of tumors of bones that are apparently sarcomas, the possibility of metastasis from the thyroid should be kept in mind. [D.R.]

Glandular Cyst of the Pancreas.—F. Villar¹ reports a case of glandular cyst of the pancreas operated upon three years ago. The patient had had two attacks of intestinal obstruction. Examination before operation showed a tumor in the epigastric region, dull on percussion, and enclosed above and below by two zones, which were sonorous on percussion. He complained of anorexia and loss in weight; his urine contained a notable quantity of sugar. After opening the abdomen, a cystic tumor was found between the stomach and transverse colon; being very adherent to the neighboring organs, it was removed by marsupialization. The patient made an uneventful recovery. [L.F.A.]

Experimental Tuberculosis in Cows and Calves.—Schottelius² fed human tuberculous sputum to one cow and two calves, mixing it with their food. They were killed four months later. All the glands of the body were enlarged; the submaxillary and mesenteric glands of the calves showed cheesy and calcareous degeneration. The cow presented tuberculous enteritis, cheesy pneumonia, and scattered miliary tubercles in the pleura, in addition to the glandular affections. Tubercle bacilli were isolated from all the lesions. [E.L.]

On the Vitality of Certain Pathogenic Microbes in Ink.—Enrico Calendoli³ has supplemented the work of Beiere and Wolf on the "Occurrence of Bacteria and Molds in Writing and School Inks"⁴ by a careful study of the relative endurance of different pathogenic bacteria to the action of ordinary inks made from iron or logwood. He finds that the vitality of the bacillus of typhoid and that of diphtheria is destroyed by ink within 15 minutes. The vitality of *Bacterium coli* and *Staphylococcus pyogenes aureus*, though no longer demonstrable in some inks after 15 minutes, remains in others unaffected for 8 hours. The *Bacillus tuberculosis* retains its vitality and virulence in most black inks for 4 days. [C.S.D.]

GENERAL SURGERY

A. B. CRAIG MARTIN B. TINKER C. A. ORR

REVIEW OF LITERATURE

The Treatment of Rodent Ulcer.—McFeely⁵ says in substance when pathologists tell us what rodent ulcer is our treatment may be more systematic and uniform. As yet we do not know whether rodent ulcer is really malignant in the ordinary sense. If so it differs from all other forms of malignant disease in many respects. His treatment is as follows: In case the ulcer is not very large or easily accessible use, in the first instance, pure formalin; if a second or third application seems necessary later, formalin glycerin 30% to 50%. In case the patient objects to an anesthetic, local anesthetic, either cocain, eucaïn, or, better still, acöïn is used, giving a hypodermic of morphin 5 or 10 minutes after using the application if pain is very severe. In case the disease is of long standing and likely to involve bone or extensive destruction of tissue, he prefers to anesthetize the patient and remove by knife or curet all diseased tissues and apply as a styptic either powdered tannin or suprarenal gland extract, and then use formalin or formalin glycerin, keeping the patient fully under the anesthetic for about five minutes afterward. When the formalin is applied it should not be allowed to evaporate. If pure formalin is used in the first instance, he rarely finds a second or third application necessary, unless to some isolated patches. The blackish slough which forms should be allowed to separate spontaneously, and may be assisted by some nonirritating ointment.

¹ Archiv für Kinderheilkunde, 1902, Vol. xxxiv, p. 175.

² Münch. med. Woch., September 2, 1902.

³ Transactions Highland and Agricultural Society, Scotland, 5 ser. 14, 1902. Experiment Station Record, September, 1902.

⁴ American Journal of the Medical Sciences, cxvii, 1013, 1902.

¹ La Revue Médicale, No. 435, 1902, p. 711.

² Münchener medizinische Wochenschrift, September 30, 1902

³ Il Polliclinico, September 20, 1902.

⁴ Centralbl. f. Bakter. u. Parasitenkunde, xxi, 276.

⁵ British Medical Journal, November 8, 1902.

After, or very often before, this eschar has been separated, the granulations will sprout up and, if healthy, grow vigorously. The author reports a number of cases in which the above or similar treatment gave very satisfactory results. [A.B.C.]

Operative Procedures for the Relief of Epilepsy.—Doran¹ says at Craig Colony there were 29 cases that had been trephined before or after admission, of which 6 showed some improvement, 19 were unimproved, the results were doubtful in 2, and in 2 the symptoms were worse after the operation. None was cured. Doran states that operation may do good in some cases, may effect a cure in a very few, but in most cases the results are discouraging. [J.H.W.R.]

Intestinal Anastomosis.—Bishop² believes that some form of absorbable bobbin serves the best purpose for intestinal anastomosis. To this end he has devised a bone bobbin which is believed to possess certain advantages over Jessett's, Allingham's, and Robson's. The bobbin devised has the beveled conical ends peculiar only to Jessett's instrument, while in the center it has the groove peculiar to Allingham's pattern. The author has prepared three forms all on the same general principle. The first is suitable for end-to-end anastomosis of the intestine; the second is intended for ileocolostomy or gastroenterostomy; and the third for pylorotomy. Several cases are reported in which the use of the bobbin was satisfactory. [A.B.C.]

A Point Regarding the Pathologic Anatomy of Cancer.—Jaboulay³ speaks of the refractile granules found in the cells of cancers and resistant to alkalies and acetic and sulfuric acids. These bear a resemblance to certain cells found in connection with varieties of parasitic cysts. Jaboulay believes that these granules are to the ordinary cancer what granules of melanin are to black cancers and specially colored granules are to the green cancer, or chloroma. The suggestion is made that these are forms, or containers, of the parasite of cancer. Attention is called to the fact that one species of protozoa, the hematoozon of malaria, produces an hepatic hyperplasia that is in effect an adenoma of the liver. Hence the probability that others of the species produce neoplasms. [A.G.E.]

Radical Cure of Cancer of the Stomach.—Mayo⁴ reports his results in this line of work. He quotes Murphy, who collected 189 cases of radical operation; 26 of the patients died, and 17 survived three years. If the diagnoses were made earlier in these cases, the results of the operative measures would be more encouraging. When a small tumor at the pylorus associated with symptoms of obstruction is present, it is not unfavorable to an operation. Cancer of the pyloric region is the only form of malignant disease of the stomach which in Mayo's experience has been diagnosed sufficiently early to warrant operation. If the disease has extended to adjacent organs the operation is contraindicated, while extensive adhesions is an unfavorable complication. Lymphatic involvement is a hopeless complication. When there is secondary involvement of the viscera, an operation is contraindicated. Mayo and his brother operated on 126 cases of nonmalignant disease of the stomach with 5% mortality, and on 92 cases of malignant disease of the stomach with 10% mortality. In 7 cases they did Kocher's operation. In 20 cases they performed pylorotomy, with three deaths. One patient lived over three years, and died of secondary involvement of the liver. [J.H.W.R.]

Value of Blood Counts in Abdominal Disease.—Longridge² asserts that leukocytosis is a sign of acute inflammation, provided the resistance of the patient is capable of reaction, or provided the intensity of infection is capable of exciting reaction. Occasionally there is a case in which the toxemia is so intense that the reaction of the patient is overwhelmed. Again a thick wall of inflammatory material surrounding a collection of pus may prevent the escape of the toxins, which in some way cause the increase in the leukocytes. Leukocytosis is most marked between the ages of 30 and 40, and diminishes after 40. The author is of opinion that we cannot regard a leukocytosis as an absolute and infallible indication of the presence of pus;

but as an indication of toxemia its value is great. It is not possible at present to fix any definite relationship between the amount of the leukocytosis and the intensity of the toxemia, yet an increasing leukocytosis is, other things being equal, the most scientific means we have for gauging the increasing virulence of an appendicular infection. A decreasing leukocytosis is evidence of decreasing virulence or walling-off of the toxic products. He agrees with Da Costa in this: "The surgeon who attempts to use the blood count in appendicitis as a definite pathognomonic sign will soon run afoul of diagnostic disasters, but he who regards it as only a symptom invariably to be correlated with other equally, if not more, important clinical manifestations, cannot fail to find this method of inquiry of signal value in routine clinical surgery." [A.B.C.]

Foreign Body Retained in the Eye for Thirty Years.—From the eye of a man of 38 Lagrange¹ removed a foreign body consisting of a piece of wood $\frac{1}{2}$ cm. (.2 inch) long and the thickness of a match. It had penetrated the eye when the patient was eight years old. At the time the eye was painful, shrivelled up, and became atrophic. Eight years ago a small abscess formed in it, another two years ago, and during the last few days the eye again became inflamed. After having been in the eye for thirty years the foreign body was removed without enucleation. Sympathetic ophthalmia was never present. [E.L.]

Complete Excision of the Urinary Bladder.—Mayo Robson² reports a case in which the urinary bladder of a woman became so thoroughly involved in a newgrowth as to demand its removal, all other means of treatment having failed. A vertical incision 10 cm. (4 inches) in length was made in the middle line of the abdomen extending to the pubes, and a transverse incision $7\frac{1}{2}$ cm. (3 inches) in length above the pubes. The recti muscles were divided at their insertion into the pubes, and the bladder and peritoneum exposed. The peritoneal cavity was opened and the bladder found freely movable, forming almost a solid mass. The removal of the organ was commenced by stripping the peritoneum off the fundus and posterior aspect. This was continued until the uterus was reached, the organ being separated readily from it and the vagina. The stripping was continued on either side of the bladder, the superior and inferior vesical arteries being clamped and divided as they were reached. The ureters were exposed and divided close to their entrance to the bladder. The tumor was displaced backward and separated from the posterior aspect of the pubes. This was fairly easily effected, but there was considerable hemorrhage from a large number of small vessels. The bladder was then separated from the anterior vaginal wall mainly by blunt dissection with the fingers. The dissection was continued until the bladder was attached only by the urethra. This was seized in pressure forceps and divided. The whole bladder was then removed. The patient lost comparatively little blood, but many pressure forceps and ligations were necessary. No. 6 Jaques' catheters were now inserted into the divided ureters and secured in position by catgut stitches. A speculum was passed into the vagina by an assistant, and a small incision made in the anterior vaginal wall in front of the cervix uteri on the right side on to the speculum. A similar incision was made on the left. The rubber tubes and ureters were then passed through the openings thus made, and secured in position by two or three sutures of catgut. The peritoneum was closed by a continuous catgut suture. Normal urine passed freely from the right ureter, but that from the left was offensive, bloody, and scanty from the first. It was, therefore, clear that the left kidney had already become affected, and pain was complained of in the left renal region. In the course of the second week, although there were no abdominal symptoms nor any other sign of peritonitis, the patient's breath began to have a urinous odor, and though her temperature varied little from the normal, the pulse became rapid and feeble, and she died uremic on the thirteenth day. Had the patient recovered it was the author's intention to try to convert the vagina into a pseudobladder, and to make use of the urethra which had been left *in situ*. [A.B.C.]

¹Albany Medical Annals, December, 1902, p. 643.

²British Medical Journal, November 8, 1902.

³Lyon Médical, November 23, 1902.

⁴St. Paul Medical Journal, December, 1902, p. 851.

¹Journal de Méd. de Bordeaux, June 29, 1902.

²British Medical Journal, November 8, 1902.

Circumcision and Venereal Diseases.—Bellenger¹ has practised circumcision in cases of chancroid, herpes, and gonorrhoea successfully. He claims that the cases recover rapidly, and a spread of infection is rare. [J.H.W.R.]

Radical Cure of Femoral Hernia.—Nicol² exposes and clears the sac; opens it longitudinally and clears it of contents. He then separates it from parts surrounding its neck, including the transversalis and iliac fascia for 2.5 cm. (1 inch) around the abdominal aspect of the ring. He says next bisect the sac longitudinally from fundus to neck; make an aperture in one-half near the neck, and put the other half through the aperture and reduce the whole through the femoral ring into the abdomen, the mass blocking the aperture somewhat after the method of MacEwen in inguinal hernia. Part of the sac may be cut away if desired. The ring is closed as follows: Carry an incision (bone deep) from the femoral vein along the pubic ramus to the region of the pubic spine. This divides the pubic portion of the fascia lata, the origin of the pectineus, and the periosteum. Its length will depend on the extent to which the femoral vein has been displaced. Detach the periosteum to a limited extent and retract it. Drill the bone near its upper edge in two places, 1 to 2.5 cm. (.5 to 1 inch) apart. Pass through one of the apertures a loop of stout catgut. It is easily passed by threading it in the eye of an ordinary surgical probe. Divide the loop of ligature. Thread one end in a large curved surgical needle and pass it as a mattress suture through Poupart's ligament. Repeat this with the second end, carrying it through Poupart's ligament at a higher level, avoiding the deep epigastric artery to the outer side, and, in male patients, the spermatic cord above. By means of the probe withdraw both threads through the second drillhole in the bone. Tie the ends of each loop separately over the front of the bone, thus bringing Poupart's ligament down to the posterosuperior surface of the bone and fixing it firmly in contact with that surface constituting what is in effect an extension outward of Gimbernat's ligament, and absolutely closing the femoral ring to whatever extent may be desired. The degree of occlusion is regulated by the position of the sutures in Poupart's ligament, not by the tension with which they are tied. To make the closure doubly secure complete the operation by uniting, by interrupted catgut sutures, the detached margin of the pectineal origin and the pubic portion of the fascia lata to the "anchored" Poupart's ligament. [A.B.C.]

Vesical Suture After Suprapubic Cystotomy.—Hofmann³ considers the primary suture of the bladder after suprapubic cystotomy the ideal procedure, and inasmuch as its results in selected cases are far more rapid and complete, always preferable to drainage where it can be employed. In many cases, however, it is absolutely impossible to close the bladder at once on account of cystitis, thickened walls, bruised edges, etc., and such cases must be either preceded by a course of systematic preparation (rest in bed, local applications, salol, vesical irrigation, etc.) or drainage must be used. Suturing the bladder to the anterior abdominal wall seems to him an advantageous procedure. Of the methods employed to suture the bladder he prefers that which closes the bladder with two rows of sutures. He uses catgut for the inner suture and silk for the outer suture. [E.L.]

Complications of Gallstone Diseases.—Moynihan² reports a series of cases of gallstone disease, together with a variety of complications which he has encountered. The complications placed in tabulated form are as follows: Impaction of stone in the cystic duct, followed by hydrops, empyema and cystoduodenal fistula; sloughing of the gallbladder from phlegmonous cholecystitis; perforation of the gallbladder and formation of a fistula between it and the stomach; impaction of stones in the hepatic and common ducts; impaction of stones in the common duct; impaction of stones in the ampulla of Vater; primary carcinoma of the gallbladder. The author says the above record gives some idea of the frequency and of the character of the difficulties met in operating for gallstones.

It is impossible to say beforehand what conditions may be encountered. The surgeon must be prepared to meet any complication. That some such complications as these are met with in approximately 20% to 30% of all gallstone operations is the best indication that earlier operations are desirable. As early uncomplicated operations are devoid of risk, and as, owing to improvements in the technic of the operations, a complete clearance of all the stones can be assured, the surgeon is entitled to ask that the patients be brought to him at a reasonably early period of the disease. [A.B.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Complications Following Celiotomy.—Bowreman Jessett¹ thinks it is probable that in a large majority of cases of celiotomy subsequent adhesions are formed and pain is sure to follow; the surgeon should bear this in mind and pay especial attention to the toilet of the peritoneum. He should see that no blood clot is left in the Douglas sac, or between the intestines; and, above all, be careful to draw down the great omentum over the intestines, as less trouble will arise from adhesions to this than to the intestines. In case of ordinary ovariectomy the stump left should be carefully stitched over and buried so as to be completely covered with peritoneum; and for this work ordinary sterilized catgut should be used, not silk. These adhesions may not only cause pain but may become a serious peril to the patient, as in the various forms of intestinal obstruction resulting from adhesions. Another danger is the kinking or adhesions of the ureters and their possible inclusion in ligatures. This can be prevented by not ligating the uterine arteries until the anterior and posterior flaps of peritoneum have been reflected from the uterus, when the vessels are readily felt running up the side of the cervix and can be ligatured without including other tissues. The appendix sometimes becomes involved in these adhesions following removal of the appendages. A case of this kind is reported, in which a woman, three months after removal of the right appendage and ovary, was seized with acute pain in the right iliac region with all the symptoms of acute appendicitis. On opening the abdomen the appendix was found firmly adherent to the site of the first operation. It was removed and the patient recovered. Another cause of pain after hysterectomy may be that a remaining ovary has become adherent. To prevent these troublesome adhesions, Jessett now uses a specially prepared catgut for all suturing of peritoneum and ligating of vessels; he carefully buries all stumps of tumors and sutures carefully any torn or cut portions of the peritoneum. [W.K.]

The Growth of the Placenta.—Hitschman and Lindenthal² review at length and in detail the growth of the placenta from its earliest origin; and they express the view that upon the place in which the fecundation of the ovum occurs, which may be in any part of the tract between the ovary and the cervix, and upon the rapidity of the movements of the fertilized ovum, depends the point of implantation of the ovum, whether in the tube or in the higher or lower segment of the uterine cavity. There will be a normal development of the placenta when the ovum attaches itself at such a height in the uterus that the tension of the decidua vera in the unrolling of the serotina shall be approximately the same from above and from below. The implantation of the ovum lower than this in the cavity of the uterus changes the mechanic relations and there results a pathologic condition which explains the existence of partial placenta previa. The attachment of the ovary to any part of the lower one-third of the uterine cavity gives rise to some form of partial or reflex placenta, while central placenta previa occurs when the implantation occurs at the os uteri or even in the cervix. This is most likely to take place when there is a peculiarly narrow passage or the mucous membranes of the anterior and posterior uterine walls overlap each other. [W.K.]

¹ New Orleans Medical and Surgical Journal, December, 1902, p. 347.

² British Medical Journal, November 8, 1902.

³ Münchener medizinische Wochenschrift, October 28, 1902.

¹ British Gynecologic Journal, November, 1902.

² Centralblatt für Gynäkologie, November 1, 1902.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

REVIEW OF LITERATURE

Acute Urethritis.—Situ¹ recommends the following for the early acute stage: Irrigation of the anterior urethra with

Potass. permanganate 0.05 gm. (gr. j)
Distilled water 200 cc. (5viij)

followed by the introduction with a hand syringe of a 0.5% solution of protargol. This solution is retained in the urethra for from 5 to 10 minutes. These maneuvers are repeated three times a day. With this there is given by the mouth the following:

Boric acid
Potassium bromid } of each 4 gm. (3j)
Salol

Divide into 12 powders. One every hour.

As the discharge somewhat diminishes, the following is advised as a hand injection:

Carbolic acid 0.25 gm. (gr. iv)
Zinc sulfate 0.75 gm. (gr. xij)
Pulv. alum 0.75 gm. (gr. xij)
Water 100 cc. (5iv)

S.—Used as injection three times daily.

For the declining stage, the following is used:

Zinc acetat 0.75 gm. (gr. xij)
Acid, tannic 0.75 gm. (gr. xij)
Water 100 cc. (5iv)

S.—Use once at bedtime. [H.C.W.]

Chloralose in Some Mental Affections.—M. Bresson² draws the following conclusions from the study of this drug in mental affections: Chloralose is a good hypnotic, producing calm sleep without trace of fatigue upon awaking. It is indicated in rebellious insomnia, with or without agitation, especially in hysteria, and perhaps in general paralysis. In the vertiginous form of epilepsy, chloralose produces a temporary diminution in the convulsive seizures. The principal counter-indications are diseases of the respiratory apparatus, especially advanced pulmonary tuberculosis, and mental diseases with intense hallucinations. The dose of chloralose varies from .2 to .8 gram (3 to 12 grains). The effects of the latter dose should always be watched carefully. [L.F.A.]

Apomorphin in Puerperal Convulsions.—Kitchens³ has employed apomorphin with very good effect in postpartum convulsions in doses of .003 gram ($\frac{1}{20}$ gr.) hypodermically, and believes from its beneficial action in this condition that it would also be useful in eclampsia. [H.C.W.]

Sodium Cacodylate in the Treatment of Mental Diseases.—E. Pualet⁴ has obtained good results with sodium cacodylate in acute melancholia and in other mental diseases. It should be continued for a considerable time. It is usually given hypodermically, as follows:

Sodium cacodylate 6.4 grams (99 grains)
Carbolic acid, 10% 10 drops
Distilled water 97 cc. (3½ ounces)

This should be brought to the boiling point for a moment, then placed in a sterilized flask. One cc. (15 minims) of this solution corresponds to the average dose for an adult in 24 hours. By this treatment the mental condition of the patient improves markedly, while at the same time the physical condition is benefited. [L.F.A.]

Examinations Concerning Sublamin as Disinfecting Agent.—Upon the strength of a large series of tests to determine the disinfecting properties of sublamin, Blumberg⁵ concludes that it is as good as the best of the known disinfecting agents—corrosive sublimate; that it is preferable to this, as it does not act as an irritant to the skin even in highest concentration. On account of this absence of irritating properties it is possible in cases where our hands have come in contact with highly virulent infectious material to produce by increasing

the concentration of the solution a still greater disinfecting power than with corrosive sublimate. It is a disinfectant at much greater depth of the skin than is corrosive sublimate. It dissolves in high concentration as soon as it touches water; corrosive sublimate tablets require a longer time to do so. He describes Kroenig's method of disinfecting hands and sterilizing sutures. [E.L.]

The Solubility of Quinin Salts.—As information of possible interest to some of our readers we print the following table from *Merck's Archives*, August, 1902:

Name of salt.	Percentage of the alkaloid in the salt.	Solubility in cold water.
Sulfate.....	73.5	In 800 parts.
Hydrochlorate.....	81.8	" 40 "
Dihydrochlorate.....	72.0	" 1 "
Hydrobromate.....	76.6	" 45 "
Dihydrobromate.....	60.0	" 7 "
Bisulfate.....	59.1	" 11 "
Phosphate.....	72.8	" 78 "
Valerianate.....	75.7	" 110 "
Lactate.....	78.2	" 10 "
Salicylate.....	70.1	" 225 "
Hydrochlorosulfate.....	74.3	" 2 "
Arsenate.....	69.4	slightly soluble.

The salts most suitable for hypodermic injection are the hydrochlorate, the dihydromate, and the disulfate. [H.C.W.] [I find the double hydrochlorate of quinin and urea superior to all others. s.s.c.]

Lumbar Puncture in the Treatment of Cerebrospinal Meningitis.—J. Babinski¹ reports the case of a young girl aged 12, who was attacked 13 months previously with deafness which became complete in two days and which was accompanied by the characteristic symptoms of meningitis: stiffness of the neck, fever and very severe pains in the head. These symptoms persisted three months without being modified to any great extent. Lumbar puncture performed at the end of this time resulted in the expulsion of cerebrospinal fluid under strong pressure, cloudy in appearance and containing a great number of polynuclear leukocytes. This operation caused a marked improvement in the condition of the patient. Fifteen days later another lumbar puncture was made which showed a liquid having the same characteristics. The improvement following this second operation was even more marked than the first. In the course of one month, three other punctures were made, each followed by very marked improvement. After the last of these the patient appeared entirely cured, excepting that the deafness persisted. When the patient was seen six months later, there had been no return of the symptoms. [L.F.A.]

Principles of Antisyphilitic Treatment.—Duering² does not place much value on the statistics of Fournier and Neisser relative to the value of the long-continued, intermittent use of mercury in preventing syphilitics from reaching the tertiary stage. His own experience has shown him that many cases never reach the third stage although but little treatment is given, while others, especially individuals with debilitated constitutions and faulty methods of living, in spite of constant treatment are always suffering with relapses and pass through all the stages. The greatest number of tertiary patients are to be found among those combining low resistance, bad hygiene, and no treatment. He is convinced, therefore, that many cases can be prevented from reaching the third stage with much smaller doses than the chronic intermittent method of treatment requires. Not only, however, that he does not think that mercury will prevent a patient in all cases from reaching the tertiary stage, he actually believes that it is likely to induce it by weakening the organism to such an extent that it cannot resist the syphilitic poison. In some cases mercury protects against the third stage, but in spite of it anemia, neurasthenia, alcohol, irregular mode of life, mental worry and excitement are of the greatest importance in producing tertiary lesions. This refers especially to the so-called parasymphilitic diseases, which in his opinion are not due to the syphilitic poison but are engrafted onto nervous and neurasthenic individuals,

¹ Therapeutic Gazette, 1902, xxvi, 472.
² Bulletin Général de Thérapeutique, Vol. cxlii, No. 12, 1902, p. 466.
³ Therapeutic Gazette, 1902, xxvi, p. 512.
⁴ Bulletin Général de Thérapeutique, Vol. cxlii, No. 12, 1902, p. 465.
⁵ Münchener medicinische Wochenschrift, September 16, 1902.

¹ La Revue Médicale, No. 435, 1902, p. 713.
² Münchener medicinische Wochenschrift, September 16, 1902.

whose organism is further weakened by the abuse of mercury. His own method of treating syphilis is as follows: Sometimes he begins treatment with the first symptom, but usually he waits until he is absolutely certain about the diagnosis. He injects salicylate of mercury twice weekly, using $1\frac{1}{2}$ to $1\frac{1}{2}$ gr. (0.08 to 0.1 gram). He continues this until the patient has been without symptoms for 12 weeks. Two months later he prescribes potassium iodid in doses of 8 to 15 gr. daily (0.5 to 1 gram), and continues this for two months. He returns to treatment three months later, using half this dose; at intervals during the next three years he uses potassium iodid in gradually diminishing doses. He lays much stress on the use of Turkish baths during the active treatment, and attempts to regulate the life of the patient. [E.L.]

The Treatment of Pulmonary and Laryngeal Tuberculosis with Hetol.—Krause¹ reports 21 cases of tuberculosis of the lungs and larynx which were successfully treated with hetol. All of his patients were improved and many cured. This drug was administered by intravenous injections. During the first week subjective and objective symptoms of improvement were seen. In the early stages of tuberculosis all the pathologic symptoms disappeared with the exception of slight changes in the respiratory murmur. In the more advanced cases the tubercle bacilli, the expectoration, and the hemoptysis were cured. Krause believes the use of hetol with the proper hygienic, dietetic, and climatic treatment will cure many of the so-called incurable cases of tuberculosis. [W.E.R.]

Treatment of Acne.—L. Brocq² recommends that (1) the patient should abstain from taking coffee, tea, all alcoholic beverages, pork, fish, crustacean foods, venison, truffle, pastry, cheese, spiced food, tomatoes and uncooked food. He should not eat much butter or fatty food. (2) At the beginning of each meal he should take one of the following cachets:

Sodium bicarbonate	0.3 gram ($\frac{1}{2}$ grains)
Calcined magnesia	0.2 gram (3 grains)
Powdered cascara sagrada	0.13 gram (2 grains)
Benzonaphtol	0.13 gram (2 grains)

For one cachet.

(3) The diseased area must be cleaned with tampons of absorbent cotton dipped in very hot water which has been boiled with 10 grams ($2\frac{1}{2}$ drams) of bran and one dessertspoonful of sodium baborate to the quart. (4) In the evening it may be washed with naphthol soap, then sponged with camphor water. (5) Before retiring, the eruption should be covered with a small quantity of the following ointment in which the amount of vaselin may be increased or diminished according to the effect produced:

Camphorated betanaphtol	0.3 gram ($\frac{1}{2}$ grains)
Resorcin	0.2 gram (3 grains)
Black soap	0.2 gram (3 grains)
Prepared chalk	0.5 gram ($7\frac{1}{2}$ grains)
Precipitated sulfur	1.4 grams (22 grains)
Pure vaselin	0.2 gram (3 grains)

(6) In the morning, after the toilet, the following should be applied to the parts:

Sodium borate	10 grams ($2\frac{1}{2}$ drams)
Camphorated sulfuric ether	37.5 cc. (10 drams)
Rose water	90 cc. (3 $\frac{1}{2}$ ounces)
Distilled water	148 cc. (5 ounces)

[L.F.A.]

Bilateral Ophthalmoplegia Interna as the Result of Extract of Ergot.—Schneider³ reports the case of a man who after taking 16 powders of extract of ergot each containing three grains complained of dizziness, general faintness, tremor, and bilateral internal ophthalmoplegia. All objects seen at a distance looked red and distorted. He was unable to read at all in the morning, but by 4 every afternoon all eye symptoms would disappear. The symptoms came on gradually, and after the discontinuance of the drug disappeared within a few days. [E.L.]

The Internal Use of Carbolic Acid.—Dessau⁴ has obtained excellent results from carbolic acid in various catarrhal complaints of children. He has found it useful in the symptom-

complex of dry cough, frequently paroxysmal, and expectoration of a tenacious and viscid character, the lungs showing a few rales of a sticky quality and frequently harsh respiratory sounds in the interseapular spaces like the broncho-vesicular murmur of Flint. In this group of cases he has found carbolic acid to act more promptly and efficaciously than any other drug. He gives it to infants of one year in doses of one teaspoonful of a 1% solution. [H.C.W.]

Thymol Urethane, a New Anthelmintic.—Thymol urethane or thymolcarbonic ether occurs as a white crystalline substance having a slight taste, slightly soluble in water.¹ This drug is decomposed by the alkaline juices of the intestine, thymol being liberated and acting as an anthelmintic. Thymol carbonate is decomposed much less completely. Thymol urethane gives good results in the treatment of intestinal worms and ankylostoma. [L.F.A.]

Tincture of Iodin Instead of Potassium Iodid in Syphilis.—Richter² treated a number of syphilitic patients with the tincture of iodine instead of potassium iodid. The drug was given in 10 to 30 drop doses three times a day. Tincture of iodine is preferable to potassium iodid because of the smaller amount of iodine required and the longer duration of its effects. Richter proved that in 100 grams of the tincture of iodine there were 10 grams of iodine, while a like amount of potassium iodid represented 76.5 grams of iodine. Another advantage of the tincture is its cheapness. [W.E.R.]

Chloretone as a Preventive of Postoperative Vomiting.—Bickle³ has used chloretone in some 40 cases of various surgical operations to prevent the nausea and vomiting that so frequently occur after the administration of an anesthetic. Of these 40 only three vomited and but one of these at all severely. He gives 1 gram (15 grains) two hours before the operation. [H.C.W.]

Ethyl Iodid in the Treatment of Whoopingcough.—Amat⁴ reports two cases of whoopingcough in young children of the same family in which the paroxysms of coughing were frequent and very weakening. The usual remedies were given without beneficial result. Inhalations of ethyl iodid were employed at the beginning of each paroxysm, and resulted in a gradual diminution in the frequency and severity of the attacks; the bronchial secretions were rendered more fluid and were more easily expelled. Eight days later the paroxysms had almost ceased. [L.F.A.]

The Intestinal Action of Atropin.—Aronheim⁵ considers atropin an excellent intestinal narcotic and anesthetic; he has found it especially useful in appendicitis, giving it hypodermically in daily doses of $\frac{1}{75}$ to $\frac{1}{25}$ gr. All the symptoms were very quickly relieved by it, and recovery was usually complete about the fifth to sixth day. [E.L.]

Santonin in Neuralgia.—Negro⁶ used santonin in 16 cases of neuralgia with good results. Santonin has a special affinity for nerve substance. Its greatest use is to quiet the lancinating pains of neuralgia. The daily dose should be 1 gram (15 grains). [W.E.R.]

Thyroid Extract in Painful Dysmenorrhea.—Stinson finds thyroid extract very efficacious in the treatment of painful dysmenorrhea. He employs it in doses of .1 gram (1 grain) three times a day for two days before menstruation begins, and in double this quantity during the menstrual period. [L.F.A.]

Lime Salts in the Treatment of Diabetes.—Boigey⁷ reports good results in three cases of diabetes treated by large doses of lime salts. One was a man of 64, who during coma was bled and given hypodermoclysis of sodium bicarbonate solution. The sugar remained above 40 gm. to the liter of urine. Two injections of 25 cc. of glycerophosphate of lime were then given, the drug being continued by the mouth in 2 gm. doses. The patient steadily improved, and the urine now contains but 1 gm. of sugar to the liter. Vision has improved, edema disappeared, and muscular strength is being regained.

¹ La Médecine Moderne, Vol. xlii, No. 37, 1902, p. 298.

² Deutsche Aerzte-Zeitung, 1902, H. 4.

³ Therapeutic Gazette, October 15, 1902, 653.

⁴ La Médecine Moderne, Vol. xlii, No. 37, 1902, p. 297.

⁵ Münchener medicinische Wochenschrift, October 21, 1902.

⁶ Echo Med. du Nord, June 29, 1902.

⁷ Lyon Médical, Vol. xcix, No. 39, 1902, p. 443.

⁸ Gazette hebdomadaire de Médecine et de Chirurgie, Oct. 12, 1902.

¹ Berliner klinische Wochenschrift, October 20, 1902.

² Bulletin Général de Thérapeutique, Vol. cxlix, No. 13, 1902, p. 508.

³ Münchener medicinische Wochenschrift, September 30, 1902.

⁴ Pediatrics, 1902, 14, 212.

Excellent results were also obtained in two other less grave cases, the dose used varying from .5 to 1 gm. The results are explained by the theory that diabetes is an intoxication by organic acids. The appearance of large quantities of phosphate of lime in the urine of the first patient, and of a phosphatic concretion in the pus of an abscess formed at the point of one injection led to the conclusion that the larger part of the drug put in circulation in the economy is neither absorbed nor transformed. [A.G.E.]

The Bloodless Treatment of Furuncles and Abscesses.—Kaufman¹ treats furuncles and abscesses by applying 5% of stypticin in a lanolin ointment. These conditions heal very rapidly after this treatment. If the furuncle or abscess should be large in size, the necrotic center must be pressed out. [W.E.R.]

Treatment of Hemorrhoids.—Raynaud² believes that local application of cold for the relief of the pain of external hemorrhoids is too fleeting in its action, and that soon after its application the pain becomes worse because of the reaction and secondary congestion of the part. He prefers the application of dry heat as intense as can be borne. By this means immediate relief is obtained which lasts a long time. The applications may be made as often as desired. [L.F.A.]

Concerning the Action of Atropin.—Gebele³ does not agree with Ostermaier, who advises the use of atropin in doses of $\frac{1}{15}$ to $\frac{1}{20}$ gr., hypodermically, in cases of strangulated hernia, believing that it excites peristalsis and narrows the caliber of the mesenteric bloodvessels. He quotes numerous authors, who state that atropin in small doses acts as an excitant to the intestinal muscle, but in large doses it paralyzes the nerve ganglion cells in the walls of the intestine upon which depends the motility of the intestine. He speaks of a number of cases in his own and other physicians' practice, showing that in such cases (strangulated hernia and other mechanical obstructions) atropin does harm by obtunding the symptoms and preventing operation until it is too late to save the patient. He concludes his article with the statement that atropin should never be used in cases of mechanical obstruction, and especially not in incarcerated hernias, where herniotomy is the only sure agent in bringing about the patient's recovery, hot baths and morphin injections having proved themselves without effect. Atropin should be used in all cases of fecal impaction, reflex intestinal spasms, intestinal atony, and paralytic obstruction; in the former in large quantities, in the latter in very small doses ($\frac{1}{15}$ to $\frac{1}{20}$ gr.). [E.L.]

The Use of Ipecacuanha as an Emetic.—Kobert⁴ instituted a number of experiments on the internal use of ipecacuanha. He concludes that this drug is a great depressant of the heart, and therefore should not be given internally. To obtain vomiting the fluid extract or tincture of ipecacuanha should be used as a gargle. [W.E.R.]

Caffein in Infantile Therapeutics.—Rousseau Saint-Philippe⁵ employs caffein in children only in certain well defined conditions which are grouped in the following classes: (1) Those in which the heart is feeble, temperature low, the pulse small and feeble, the urine scanty, and the child somnolent and weak; (2) in collapse and sudden danger in the course of infectious diseases. Caffein is used rarely in the acute febrile affections of children, as it may cause increased restlessness and elevation of the already high temperature. When caffein is indicated in cardiac feebleness and in collapse it should be given in small doses, not more than from .1 to .3 gram ($\frac{1}{2}$ to 5 grains) in 24 hours. [L.F.A.]

The Treatment of Neurasthenia.—DeBlois⁶ divides the treatment into: (1) Hygienic and moral; (2) therapeutics of the depression and nervous erethism; (3) injections of artificial serum. Under (2), hydrotherapy is the most efficacious, and the cold douche, lasting 5 or 10 seconds, the best form of application. This should be given on alternate days with other less heroic applications between. Static electricity also merits a

trial in conjunction with the hydrotherapy. Artificial serum may be given subcutaneously, two or three times a week, in doses of 5 to 20 grams. [A.G.E.]

Chlorcalcium in the Treatment of Hemophilia.—Wallis¹ reports a case of hemophilia in which the patient bled excessively after the extraction of a tooth. He administered chlorcalcium for eight days before extracting the other teeth. He found there was very little bleeding after this treatment. [W.E.R.]

Agurin.—Th. Solacolu² discusses in Thèse de la Faculté de Paris, 1901-1902, No. 579, the new drug *agurin*, a derivative of theobromin. In small doses the drug exhibits a diuretic action. It is soluble in water, and causes no disturbance of the gastrointestinal tract. [C.S.D.]

FORMULAS, ORIGINAL AND SELECTED.

For Pruritus Ani.—

Ac. carbolic	2 gm. (gr. xxx)
Calomel	4 gm. (5ij)
Tar	6 gm. (5iiss)
Menthol	1.2 gm. (gr. xx)
Zinc oxid	8 gm. (5ij)
Simple cerate	60 gm. (5ij)

Wash the parts with hot water and spread the ointment on a cloth. Apply and fasten with a T-bandage.—*Medical Record*. [H.C.W.]

For Relief of "Neuralgic" and "Rheumatic" Pains.—

Guaiacol, c. p.	2.5 cc. (40 mm.)
Menthol	2 gms. (30 grs.)
Oil of birch or synthetic methyl salicylate	7.5 cc. (2 drs.)
Woolfat	} each 15 gms. (½ oz.)
Cerate	

Mix. Dispense in a tin tube; a small quantity to be rubbed in over the seat of pain. [S.S.C.]

OPHTHALMOLOGY

WALTER L. PYLE

EDITORIAL COMMENT

Lowered Blood-pressure in the Causation of Glaucoma.—In a recent paper read before the French Ophthalmologic Society, Zimmerman³ advanced the theory that decrease in blood-pressure, from mental or physical shock, cardiac disease, etc., is a prominent factor in the etiology of glaucoma, and in his explanation he utilizes both the theory of defective excretion and that of excessive secretion. When vascular pressure is lowered, even though intraocular tension is normal, the blood enters the eye only with difficulty, and pulsation of the intraocular arteries is noticed. Diminished intraocular supply causes denutritional changes and edema, with actual increase of intraocular tension. The sclera becomes distended, the intraocular veins are compressed, general edema of the inner tunics results, and the gross changes typical of glaucoma occur. Zimmerman believes that in certain cases in which intraocular tension does not rise above normal, glaucoma may develop from a relatively low vascular pressure, the result of profound and persistent cardiac disturbance. He also says that prodromal glaucomatous attacks do not necessarily indicate ocular disease. The eye may at first be healthy, but the blood-pressure greatly lowered. True glaucoma does not develop until repeated prodromal phenomena have produced such anatomic changes as cupping of the disc and closure of the filtration angle.

The practical application of these observations is that in simple glaucoma the treatment should include, primarily, measures to increase and maintain the proper blood-pressure. In 40 cases of subacute glaucoma so treated, Zimmerman had need to resort to iridectomy but once. As to the drugs employed, digitalis was found unsuitable on account of certain mydriatic effects. Strophanthus acting upon the heart-muscle rather than

¹ Brit. Med. Jour., May 10, 1902.
² Gazette hebdomadaire de Médecine et de Chirurgie, September 14, 1902.
³ Revue générale d'Ophthalmologie, September 20, 1902.

¹ Monatshefte f. pract. Dermat., Bd. 35.
² La Médecine Moderne, Vol. xiii, No. 38, 1902, p. 312.
³ Münchener medizinische Wochenschrift, October 21, 1902.
⁴ Therap. Monatsh., 1902, No. 8.
⁵ Journal des Praticiens, Vol. xvi, No. 38, 1902, p. 606.
⁶ La Revue Médicale du Canada, November 19, 1902.

upon the bloodvessels was very satisfactory, administered in doses of eight minims four times daily. Adonis vernalis was found equally effective.

This treatment, of course, is not indicated in secondary glaucoma following disease, injury, or operation, as here intraocular pressure is the primal cause, and the arterial pressure may not be disturbed.

Primary Sarcoma of the Iris.—Wood and Pusey¹ have made a very extensive study of this subject, and have reviewed practically all the available cases in literature. Their most important conclusion is that when a diagnosis of iris sarcoma is established the globe containing the growth should be immediately enucleated. The widely quoted advice of Fuchs, that iridectomy including the diseased tissue may be sufficient in cases in which the sarcoma is limited to the iris, they believe to be harmful teaching. They doubt that we can clinically determine with certainty that a particular growth is limited to the iris. In the histologic examination of 41 cases the enucleated globe showed involvement of other parts than the iris, and in reviewing the subsequent history of many cases treated by iridectomy, there is strong evidence of the continued growth of the tumor. Sarcoma in this location is exceedingly slow in growth, and no case should be reported as cured until more than three years has elapsed after operation.

REVIEW OF LITERATURE

Metastatic Carcinoma of the Optic Nerve Without Ophthalmoscopic Evidence.—Holden² describes an interesting case of a negress of 41, in which carcinomatous infection of the pylorus, lungs, and liver was associated with total destruction of a considerable longitudinal area of the left optic nerve posteriorly. There was total blindness for four months without paleness of the disc, and only the slightest microscopic changes in the nerve near the ball. There was a considerable defect in the infero-nasal portion of the field of the right eye, which was explained by a limited sclerosis of the right nerve, likely the result of affection of the vessels in the pial sheath.

Cataract from Naphthalin Poisoning.—Lecenius³ reports a case in a druggist of 36, who after taking consecutive large doses of naphthalin and castor oil for enteritis, was seized with great vesical pain within 24 hours and noticed rapid failure of vision. There was diffuse opacity of the perinuclear region of the crystalline lens with a number of small white spots. The patient had always enjoyed good vision, but was now only able to count fingers at 1.5 meters. Ophthalmoscopic examination was unsatisfactory. The visual fields were much contracted, although there was retained normal color perception at the last observation. General health was recovered, and the urine contained neither albumin nor sugar, but the cataract remained.

Shot in the Anterior Chamber for Eight Years.—Bürstenbinder⁴ has published an observation of a penetrating wound of the eyeball by a grain of lead, which had remained in the anterior chamber eight years without causing any inflammation. There was a prolapse of the iris adherent in the corneal cleatrix, a circumscribed opacity of the lens, and a rupture of the choroid and retina from contrecoup. Vision = $\frac{1}{3}$, with a defect in the superior field. Beside the lead in the anterior chamber, the skigram showed several grains in the orbit, which had wounded the right externus and levator of the eyelid, explaining the slight ptosis and convergent strabismus.

Foreign Bodies in the Eye.—Sweet⁵ offers the following conclusions relative to the use of electromagnets in the extraction of foreign bodies in the eye: (1) The size of the splinter of iron or steel, and its approximate position in the eyeball, should be known before an attempt is made to extract it by either the medium-sized or the giant magnet; (2) the x-rays are the most certain method of diagnosis in injuries from all kinds

of foreign bodies; (3) the large and medium-sized magnets are of value in determining the presence of iron or steel, but negative findings can not be accepted as conclusive evidence of the absence of the metal in the eyeball; (4) the Haab magnet is superior to all forms of smaller magnets in extracting iron or steel from the vitreous chamber by way of the anterior chamber, but the great power of the instrument requires that it shall be used with caution; (5) when the body is to be extracted through an opening in the sclera close to the previously determined position of the metal the medium-sized magnets are shown by experiments to be as effective as the giant magnet; (6) the entrance of the magnet point into the vitreous is harmful, and should never be attempted except when other means of extraction have failed.

Myopia of Nine Diopters from Ciliary Spasm.—Fromaget¹ reports the case of a young man who was rejected from military service on account of high myopia. He was wearing concave lenses of six diopters, with which he could not read at a distance of 25 centimeters. Without lenses he read with difficulty at 10 centimeters. For distance vision he preferred concave lenses of nine diopters. Visual acuity was about 1/3. There were none of the common myopic fundus changes, but the papilla was greatly congested. Tonic spasm of the ciliary muscle was suspected. By skiascopy no more than 2.50 diopters of myopia could be made out. Under atropin cycloplegia he was found to have a small amount of compound hyperopic astigmatism.

Iodin-vasogen in Corneal Infiltration.—Duane² uses this solution of iodine in vasogen. It forms a nonirritant, syrupy, brownish liquid, containing either 5% or 10% of iodine. He believes that in all the cases of corneal ulceration treated by applications of iodine-vasogen the favorable outcome was hastened at least, if not actually determined, by the remedy. In several cases it succeeded in subduing extensive destruction of the cornea after other means had failed. His conclusions are: 1. Iodin-vasogen is a valuable application in infiltrated and spreading ulcers of the cornea, whether associated with purulent conjunctival secretion or not. It is particularly indicated in those cases in which the galvanocautery is contraindicated by the situation of the infiltrate. 2. It rarely causes pain, if not applied in excess, and never causes any unpleasant reaction or untoward effects. 3. Preliminary anesthetization of the cornea with cocaine is rarely required and in general is better omitted. 4. The application is best made every other day until the infiltrate begins to shrink decidedly, and then should be made every three or four days until the infiltrate disappears.

Cuprocitrol and Itröl in Trachoma.—Von Arlt³ employs cuprocitrol by means of a glass rod over granulations in the conjunctival sac, followed by gentle but thorough massage. In advanced cases he uses a 10% ointment three times a day, decreasing the strength as the case improves or if the applications cause pain. In a few cases cuprocitrol is not tolerated, and in these von Arlt uses a dusting powder of itröl. He speaks favorably of this substance, but warns against its susceptibility to deterioration from exposure to light and to the products of combustion of illuminating gas.

Eserin in Corneal Affections.—Katz⁴ recommends the employment of eserine in cases of peripheral ulceration of the cornea, scrofulous keratitis, etc. He uses a pomade composed of eserine sulfate, 0.03; iodoform, 0.12, and vaselin, 6.0.

Ichthyol in Corneal Affections.—Fedorow⁵ used an ointment of ichthyol, 0.1; cocaine hydrochlorate, 0.15, and vaselin, 5.0, in 28 cases of corneal infiltration, and is of the opinion that resorption was hastened, and reestablishment of corneal transparency favored by the applications.

The Pathology of Optic Atrophy.—Harman⁵ hesitates to accept the current views of the pathology of optic atrophy in retrobulbar neuritis. He believes them to be based upon an inaccurate appreciation of the ascertained facts of the development of the nervous connections of the eye, and of the

¹ Archives of Ophthalmology, July, 1902.

² Archives of Ophthalmology, September, 1902.

³ Westnik Ophthalmol., 1902, No. 2.

⁴ Abs. Revue générale d'Ophthalmologie, August 31, 1902.

⁵ Journal of the American Medical Association, August 30, 1902.

¹ Jour. de Méd. de Bordeaux, March, 1902.

² Archives of Ophthalmology, September, 1902.

³ Wiener klinische Wochenschrift, May, 1902.

⁴ Westnik Ophthalmol., 1902, No. 3.

⁵ British Medical Journal, November 1, 1902.

theory of the neuron. The retina is known to arise as an outgrowth from the brain. Within this outgrowth nerve cells give rise to axons which grow centrally to make connections with parts of the brain different from the site of origin of the evagination. Thus the trophic centers of the optic nerve fibers are the ganglion cells of the retina from which they are outgrowths. The case is parallel with the relation of a posterior root ganglion cell to its central axon passing into the cord. Thus degeneration of the optic fibers should be in the vast majority of cases ascending only, and we should look in cases of optic atrophy first to the retina for evidence of damage. He believes a rational classification could be arrived at as follows: 1. Primary damage in disease of the ganglion cells (*a*) from anemia due to spasm of retinal vessels from drugs as quinin, reflexly from cold, and to general anemia succeeding severe hemorrhages, febrile diseases, etc.; (*b*) from poisoning of the ganglion cells by drugs—tobacco, lead—a view directly supported in the antidote of tobacco blindness, strychnin, which was agreed to act directly upon nerve cells. In all these cases the changes at the disc are proportionate to the number of cells damaged; in cases of great loss of ganglion cells, it is probable the rapid destruction and swelling of the myelin sheaths of the degenerating fibers at the lamina cribrosa produces a mechanical choked disc. 2. Cases of damage to the optic nerve by contiguity of diseased structures or in general nerve changes producing islands of fibroid exaggeration, and followed by obvious atrophy of the disc. Here ascending degeneration should be the earlier result, with a later degeneration of the axon segment next the trophic ganglion cell from disuse, a process the more easy owing to the special myelin sheathing of the optic nerve fibers. In reply to the question as to how he could explain by ascending degeneration undoubted optic atrophy following section of the nerve in fracture at the optic foramen, Harman says in these cases there is nothing to show the damage was limited to the actual point of injury, exudation was just as certainly to be found within and around the optic sheath even to the disc, which would explain the early onset of atrophy in some cases; further, he allows the possibility of a degeneration of the segment between injury and trophic cell, both from disuse and by reason of the arrangement of the myelin sheaths of the optic fibers.

Detachment of Corneal Epithelium.—Menzies¹ describes two main types of the condition, with and without distinct blister formation; keratitis bullosa of traumatic origin is also included. In the majority of these cases a history of injury is obtainable; the detached epithelium does not become firmly reattached and is disturbed by movements of the lids causing great pain. If the case extends an ulcer may result. The diagnosis depends upon the history and careful inspection of the cornea under proper illumination. In some cases fluorescein may be useful. The treatment consists in tying up an injured eye until corneal healing is complete. In mild case massage with an ointment or oily substance is generally sufficient. When there is a distinct blister, the detached epithelium should be removed, the denuded surface scraped, an ointment applied, and the eye bandaged.

Chestnut-bur Thorns in the Cornea.—Meding² describes a most instructive case in a girl of 7, who was struck in the left eye by a falling bur. Eight thorns were seen transfixing the cornea, their points projecting into the anterior chamber, almost impinging upon the iris and lens. The bases of the thorns except one were broken off even with the surface of the cornea. It was found very difficult to seize the thorns with any instrument and slight pressure on the cornea brought the thorn-points in contact with the iris and lens. Atropin was instilled and expectant treatment was advised. Knapp in consultation advised no surgical interference unless especially indicated. One month later three central thorns were removed with a fine forceps. In another month two more thorns were removed, all the removals being possible on account of ulceration about the bases of the thorns. Within a few weeks the remaining thorns had disappeared, the last absorbed being the one which was first attacked. The only sequelæ to the injury

were two very faint scar-points, and one somewhat larger and denser opacity. The lessons drawn from this interesting case are: 1. The thorns were aseptic. 2. The curious tolerance of the cornea and absorptive powers of the aqueous, not generally believed to include vegetable matter. 3. The wisdom of retaining the thorns as plugs for the wounds they made, thus preventing infection. 4. The largest and most opaque scar was left at the site of the preliminary efforts at removal.

Filamentous Conjunctivitis.—An unusual case is reported by Coppez.³ The patient was a child of 8, treated in 1900 for adenoids and follicular conjunctivitis. In 1902 the patient returned complaining of the appearance in the eyes of threads which obscured vision whenever he applied himself to work. Rubbing the eyes would enable him to extract thin filaments 3 cm. or 4 cm. in length. Examination showed the eyes to be practically normal except slight injection of the conjunctiva. The filaments could be seen, if the eyes were watched sufficiently long, to descend from the superior culdesac, traverse obliquely the cornea downward and inward to the internal angle of the eye, when they could be extracted. Microscopic examination of the filaments showed them to have no special structure, being composed of mucus containing leukocytes and desquamated epithelial cells. These filaments interfered so much with sight that the boy had to be removed from school. Treatment with acetic acid, zinc sulfate, yellow precipitate, etc., has been unavailing, as any irritant immediately causes an increased production of filaments. [A.G.E.]

Concerning Cocain.—Fuchs⁴ does not approve of the routine use of cocain for every ocular pain. He himself never prescribes it in such cases. He says the pain of conjunctivitis is not sufficiently severe; in diseases of the deeper structures as Iridocyclitis, glaucoma, it is of no benefit, as its action is only superficial, and in diseases of the cornea, in which it might be of benefit, it is not useful because of its evanescent action; its continued use is associated with clouding of the epithelium, abrasion and even ulceration; it has in some few cases been the active cause of glaucoma. He advises cocain in all operations on the eye, even in such a small one as removal of a foreign body. In strongly injected eyes, its anesthetic power being very low in such cases, he assists it with subconjunctival injections of cocain at the point of incision, with the use of adrenalin hydrochlorid, 1:1,000, or with hypodermic injections of morphin. He does not approve of Schleich's infiltration method. Cocain is useful in all cases of photophobia, especially when met with in children. He associates cocain with atropin for purposes of dilating the pupil. [E.L.]

Congenital Nystagmus in Father and Child.—Fisher⁵ reports an instance of lateral nystagmus unassociated with disease of the choroid, lens, or retina occurring in a child aged 5 months. The condition probably existed from birth, as it was noticed a few hours after birth. The father, aged 21, was similarly affected, and had been so, it was reported, from his birth. His vision was good, and there was no disorder of the choroid or retina. There was no history of any nervous disorders in the family, but a child of a cousin was reported to be similarly affected. [A.O.J.K.]

A Tubular Visual Field in Hysteria.—Greef⁶ reports a case of hysteria in a young girl who presented a tubular visual field. Various parts of her body showed the typical painful spots seen in hysteria; the whole body, and especially the left half, presented hyperesthesia. Her sense of smell, hearing and taste were somewhat impaired. Her vision was $\frac{3}{4}$ yard, her visual field was concentrically limited. It was just as great at 5 meters as at $\frac{1}{2}$ meter, and hence tubular. A venous and an arterial pulse were found on ophthalmoscopic examination. A venous pulse may be physiologic but an arterial pulse is pathologic; yet in this case no organic lesion was found. Greef was unable to account for this condition. He believes the tubular visual field to be of great diagnostic value in hysteria. [W.E.R.]

¹ British Medical Journal, November 1, 1902.

² Archives of Ophthalmology, November, 1902.

³ Journal Médical de Bruxelles, October 23, 1902.

⁴ Wiener klin. Woch., September 18, 1902.

⁵ British Medical Journal, September 6, 1902.

⁶ Berliner klinische Wochenschrift, May 26, 1902.

The Suprarenal Gland in Ophthalmic Practice.—According to de Schweinitz¹ the instillation of any of the various preparations of suprarenal gland into the eye is followed in from 30 to 60 seconds by a blanching of the mucous membrane due to stimulation of the vasoconstrictor apparatus. The smaller bloodvessels are more affected than the larger ones. The effect lasts from a half to two hours, according to the amount employed. These drugs have no effect upon the inner vessels of the eye, that is, of the retina or choroid. In the inflamed eye there is a blanching of the conjunctiva, but there is some dispute as to whether the suprarenal has any action upon ciliary congestion; de Schweinitz inclines to the view that the application of the drug removes superficial and lessens deep hyperemia. It is asserted that the visual acuity is increased by the drug. When the suprarenal extract is injected into the subconjunctival sac there is produced mydriasis and protrusion of the eyeball. The adrenalin preparations are useful to relieve congestion in conjunctivitis, to combat blepharospasm, to relieve trachomatous pannus, and similar conditions. They are also of value to enhance the action of other drugs, as cocain or eserin. It is not at all certain whether the use of adrenalin has any real curative effect; it is probable, however, that it has a favorable modifying influence upon the disease process in some cases. As a hemostatic in operative work this preparation, while preventing oozing, does not control bleeding from the larger vessels and is likely to be followed, de Schweinitz believes, by postoperative hemorrhage. Concerning the choice of preparation, he has obtained equally good results with a solution of dried extract and with adrenalin chlorid. Solutions of adrenalin chlorid have the advantage of being more easily sterilized, but de Schweinitz has observed that it is somewhat more irritating than the older preparations. [H.C.W.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended December 27, 1902:

SMALLPOX—UNITED STATES.

		Cases	Deaths
California:	Los Angeles.....Dec. 7-14.....	1	
	Sacramento.....Dec. 6-13.....	2	
	San Francisco.....Dec. 7-14.....	3	
Georgia:	Atlanta.....Dec. 10-17.....	3	1
Illinois:	Chicago.....Dec. 13-20.....	2	
Indiana:	Elwood.....Dec. 14-21.....	1	
	Indianapolis.....Dec. 13-20.....	22	4
Kentucky:	Lexington.....Dec. 13-20.....	1	
Louisiana:	New Orleans.....Dec. 13-20.....	1	
	Imported from Monroe, La.		
Massachusetts:	Boston.....Dec. 13-20.....	16	6
	Everett.....Dec. 13-20.....	2	1
	Lawrence.....Dec. 13-20.....	2	
	Grand Rapids.....Dec. 13-20.....	6	
Michigan:	St. Louis.....Dec. 7-14.....	14	
Missouri:	Omaha.....Dec. 13-20.....	5	
Nebraska:	Manchester.....Dec. 13-20.....	7	
New Hampshire:	Nashua.....Dec. 13-20.....	15	
New Jersey:	Camden.....Dec. 13-20.....	3	
	Newark.....Dec. 13-20.....	2	
New York:	Buffalo.....Dec. 13-20.....	2	
	New York.....Dec. 13-20.....	1	
Ohio:	Cincinnati.....Dec. 12-19.....	1	
	Cleveland.....Dec. 13-20.....	9	5
	Dayton.....Dec. 13-20.....	7	
	Hamilton.....Dec. 13-20.....	2	
Pennsylvania:	Erle.....Dec. 13-20.....	6	
	Johnstown.....Dec. 13-20.....	8	2
	McKeesport.....Dec. 13-20.....	1	
	Philadelphia.....Dec. 13-20.....	15	
South Carolina:	Charleston.....Dec. 6-13.....	3	1
Tennessee:	Memphis.....Dec. 6-13.....	2	
Washington:	Tacoma.....Dec. 7-14.....	2	
Wisconsin:	Milwaukee.....Dec. 6-20.....	15	

SMALLPOX—FOREIGN.

Austria:	Prague.....Nov. 22-29.....	9	1
Belgium:	Antwerp.....Nov. 22-29.....	1	1
Brazil:	Bahia.....Nov. 15-29.....	4	1
Ecuador:	Guayaquil.....Nov. 22-29.....	1	2
Gibraltar:	.....Nov. 23-30.....	1	
Great Britain:	Birmingham.....Nov. 29-Dec. 6.....	1	
	Edinburgh.....Nov. 29-Dec. 6.....	1	
	Leeds.....Nov. 29-Dec. 6.....	3	1
	Liverpool.....Nov. 29-Dec. 6.....	18	4
	London.....Nov. 22-Dec. 6.....	10	

India:	Bombay.....Nov. 11-25.....	4	
	Calcutta.....Nov. 15-22.....	1	
	Madras.....Nov. 8-15.....	1	
Italy:	Palermo.....Nov. 22-29.....	4	1
Mexico:	City of Mexico.....Nov. 30-Dec. 7.....	6	2
Russia:	Moscow.....Nov. 15-22.....	7	
	Odessa.....Nov. 22-29.....	1	
	St. Petersburg.....Nov. 22-29.....	4	1
Straits Settlements:	Singapore.....Oct. 8-25.....	1	3
Turkey:	Constantinople.....Nov. 23-30.....	16	1
Uruguay:	Montevideo.....Nov. 1-8.....	16	1

YELLOW FEVER.

Ecuador:	Guayaquil.....Nov. 29-Dec. 6.....		4
Mexico:	Coatzacoalcos.....Dec. 6-13.....	1	
	Veracruz.....Dec. 6-13.....	13	4

CHOLERA—INSULAR.

Philippines:	Manila.....Oct. 19-Nov. 1.....	33	20
	Cebu.....Oct. 30.....		1
	Provincias.....Oct. 19-Nov. 1.....	7,761	4,806

CHOLERA—FOREIGN.

Egypt:	Alexandria.....Nov. 22-29.....		11
India:	Bombay.....Dec. 11-25.....		1
	Calcutta.....Nov. 15-22.....		26
Java:	Batavia.....Oct. 24-Nov. 8.....	81	68
Straits Settlements:	Singapore.....Oct. 18-25.....		17

PLAGUE.

China:	Hongkong.....Nov. 1-8.....	1	1
India:	Bombay.....Nov. 11-25.....		253
	Calcutta.....Nov. 15-22.....		9
	Karachi.....Nov. 16-23.....	19	18

Changes in the Medical Corps of the U. S. Army for the week ended December 27, 1902:

The following-named assistant surgeons are relieved from duty at the places indicated, and will report to the commanding general, department of California, for transportation to the Philippine Islands on the transport to leave San Francisco, Cal., January 1, and upon arrival at Manila will report to the commanding general, division of the Philippines, for assignment to duty: First Lieutenant Milton E. Lando, discharge camp, Angel Island, Cal.; First Lieutenant Charles Y. Brownlee, Benicia Barracks, Cal.

STOCKARD, JAMES K., contract surgeon, now at Greensboro, N. C., will proceed to Fort Delaware for duty.

ADAIR, GEORGE F., contract surgeon, is relieved from further duty in the division of the Philippines, and upon the expiration of his present leave will report to the commanding general, department of the East, for assignment to duty.

VITOU, BENJAMIN, hospital steward, now at Akron, Ohio, having relinquished the unexpired portion of furlough granted him in the Philippines, is relieved from duty at Fort McDowell, and will report at Fort Thomas, to relieve Hospital Steward Theodore H. Connor. Steward Connor will proceed to Manila, P. I., for assignment to duty.

CORSON, JOHN M., hospital steward, now at Buffalo, N. Y., is relieved from duty at Fort McDowell, Cal., and will report on or before expiration of furlough at the General Hospital, Fort Bayard, for duty.

DALE, First Lieutenant FREDERICK A., assistant surgeon, is granted leave for ten days, to take effect upon the return to the United States General Hospital, Washington Barracks, of First Lieutenant James R. Church, assistant surgeon, from temporary duty at West Point, N. Y.

EDWARDS, First Lieutenant JAMES F., assistant surgeon, now at State-lick, Pa., is relieved from further duty in the division of the Philippines, and upon the expiration of his present leave will proceed to Fort Leavenworth for duty.

VAN POOLE, First Lieutenant GIDEON MCD., assistant surgeon, leave granted December 3 is extended ten days.

BACON, ALEXANDER P., contract dental surgeon, is granted leave for eighteen days.

WATSON, HARRY J., contract surgeon, is granted leave for one month, with permission to apply for an extension of one month.

Changes in the Medical Corps of the U. S. Navy for the week ended December 27, 1902:

BERTOLETTE, D. N., medical inspector, ordered to duty as fleet surgeon of the Pacific station—December 20.

GREEN, E. H., medical inspector, detached from duty as fleet surgeon, Pacific station, and ordered to the Wisconsin—December 20.

Changes in the Public Health and Marine-Hospital Service for the week ended December 25, 1902:

PARKER, H. B., assistant surgeon, granted leave of absence for fourteen days from December 22, 1902—December 20, 1902.

WHITE, M. J., assistant surgeon, granted leave of absence for fourteen days from December 23, 1902—December 19, 1902.

LLOYD, B. J., assistant surgeon, relieved from duty at the San Francisco Quarantine and directed to report to Surgeon A. H. Glennan, San Francisco, Cal., for duty—December 23, 1902.

BALLARD, J. C., acting assistant surgeon, granted leave of absence for five days from December 23, 1902—December 23, 1902.

GOLDSBOROUGH, B. W., acting assistant surgeon, leave of absence for three weeks granted by Department letter of November 22, 1902, amended so that said leave shall be for twelve days only—December 22, 1902.

LEONHARDT, S. C., acting assistant surgeon, granted leave of absence for one month from January 1, 1903—December 17, 1902.

¹Therapeutic Gazette, 1902, xxvi, p. 433.

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Conservatism in using the Lorenz method is at the present time most advisable by American surgeons. There has been created such an alarming interest in the operation by the newspapers that there is danger that operations may be undertaken by the unskilled and the procedure itself brought into disrepute. The conditions that limit the choice of cases fit for the operation should be most carefully studied. It cannot be forgotten that even in the hands of one so experienced and successful as Lorenz himself only about one-half the operations are successful. It is, moreover, the opinion of some thoughtful men that the operation with the knife may finally prove preferable, even in patients of six years and less. It is also to be remembered that the primary success in getting the head of the femur into its socket still leaves the greater part of the work, and often the most difficult, to be carried out in the long and delicate manipulations and care required after the cast is removed. Whatever method may finally gain precedence in practice, nothing but harm can result from haste and recklessness on our part in undertaking operations in ill-advised cases. If to this should be added the misfortune of the poor operation, an over-revulsion will follow, and progress will more than ever be sadly delayed.

Extremes in Theory and Practice.—As regards therapeutics how common it is to find practitioners divided into two classes, those whose practice runs to treatment almost exclusively regardless of diagnosis, and those whose interest in a case at once ceases so soon as a diagnosis is made. Medicine exists not for the benefit of its practitioners, but for the good of its patients. In a recent set of ten examination questions for a graduating class by a professor of the "Practice" of Medicine, only one had any reference whatever to treatment. On the other hand, What do you prescribe in a case of —? shows the silliness of another extreme. But why should civilized men run to either extreme? If stolid empiricism and indiscriminate drugging characterizes the one set of extremists, a brutal and immoral therapeutic nihilism is equally disgusting. The patient does not come to us and pay us for our theories and diagnoses, but to be made well. He knows, and we all know, that drugs have power, and, intelligently used, have power for good. A correct diagnosis must precede correct treatment, but a correct

diagnosis does not do away with the need of treatment. There is a deal of anti-nonsense being scattered about, not only by the ranting quacks, but by many so-called "leaders" of the profession. Hygiene, nursing, diet, etc.—yes, but why not drugs also, if they can help? And help they can when used with skill. The practitioner of the future will unite both theory and practice, both diagnosis and treatment. Let the extremists take warning.

The Prophylaxis of Color-blindness.—Some time since we spoke of the success which may follow in educating those supposedly blind to see. It has been found that the remnants of function in those supposed to be blind may often be so improved as to take these patients entirely out of the blind class and make them enjoy useful vision. It is but a corollary of this that the deficiencies of vision called color-blindness are also preventable. Function, it must ever be repeated, depends upon education and exercise, and it is a necessary part of the great physiologic law that the perception of colors will be lost if the eye is not exercised in their perception. That the defect is dependent upon nonexercise is indicated by the fact that it is far less common in women than in men. In 10,000 men 369 are affected, while only 9 are found in the same number of women. The proportion among savage men is less than among civilized men. But of course the education and exercise must begin in early childhood. And there is some proof that this exercise in childhood does stimulate color-perception and prevent color-blindness. In the *Educational Review* Alida S. Williams recently reports having tested the color vision in 580 boys of the primary schools of New York. These boys had received careful systematic color-training. According to the teachings of statistics 24 should have been defective in their color-sense. But only one was so. It is impossible to estimate how many of the accidents to vessels and railway trains have been due to the color-blindness of employes. The proportion is higher than is usually supposed. Despite all the systems of testing many of these employes are still color-blind. Perhaps it will ultimately be found that prevention is cheaper than testing.

Nontaking Vaccinations.—The following reports have been sent to us by subscribers:

1. Dr. H. B. Young, of Burlington, Iowa, cites the case of his youngest daughter, always robust and healthy, who was

vaccinated twelve times between the ages of 7 and 12 years with virus (points and tubes) from different and most reliable producers and by four different physicians—but without result. When 12 years old she was vaccinated for the thirteenth time, and this was followed by a pustule. But as the area of inflammation was large and there was a slough about 5 mm. in diameter, I do not feel sure that it was a vaccinal pustule.

2. Dr. W. B. Jones, of Rochester, N. Y., gives details of the case of a dentist, whom twenty years ago, in boyhood, never having been vaccinated or had smallpox, a physician vaccinated seven times without success. Thereupon he took him to the bedside of a patient having that disease and vaccinated him with a scab removed at the time from one of the pustules. That was also unsuccessful, but last month vaccination was done in the ordinary manner and there was a typical reaction.

3. Dr. D. F. Manning, of Marshall, Mo., writes as follows: In the winter of 1900, during the prevalence of smallpox in our community, a gentleman and his daughter applied to me for vaccination, stating that he had had fourteen and his daughter four nontaking vaccinations. On inquiry I found that he had been twice vaccinated in early youth by the "arm to arm" method. During his army service of four years in the Civil war he was vaccinated twelve times. I vaccinated both him and the daughter twice at the time stated (1900), using the dried points first and the glycerized virus in tubes the second time. But there was no result either time in either case, thus making the record sixteen and six nontaking vaccinations, respectively, in these cases. The gentleman is a truthful and highly respectable man. Five other members of the family, vaccinated at same time and with virus from the same package used with the father and daughter, proved susceptible. I am not persuaded that these are cases of insusceptibility, but if they are, might not the element of heredity be considered in the case of the daughter?

4. Dr. G., of New York City, says of himself as patient: My first vaccination in 1865 was a failure. Several other vaccinations in my family at the same time from the same scab were successful. The vaccinations, one each in 1871, 1872, and 1874, were failures, and in 1878 there were two failures. The last vaccination was by the then vaccine expert of the New York Health Board, who laughed at the idea of failure, but he did not succeed. Between 1878 and 1901 at least two vaccinations failed. In the last named year the eighth vaccination was mildly successful. On some of the dates named a second attempt was made as soon as failure was evident. To those studying this subject it may be of interest to state that I was exposed to smallpox without contagion during the time that I appeared immune to vaccination, also that I never contracted any of the diseases of childhood, with one exception, although frequently exposed in my own family. The one exception was a case of "mumps" after I began the practice of medicine. Further, my daughter resisted repeated attempts at vaccination until she was 8 years of age. Furthermore, she has reached adult age without contracting any of the contagious diseases of childhood, except chicken pox. Individual cases are of little importance, but in this instance tend to demonstrate the importance of persistent attempts at vaccination in cases apparently immune, as the time seems to come when the person apparently becomes susceptible and liable to contract smallpox even though he may have resisted its contagion before. The fact that one is not susceptible one year is no indication that he may not be the following year, and then he runs all of the risks as regards contagion, severity, and mortality, that all run who have never been vaccinated.

The cases reported in another column by Dr. Seilkovitch should also be considered a part of the series.

The Lister Jubilee.—Fifty years ago Lister took the Fellowship of the Royal College of Surgeons of England. To celebrate the jubilee the *British Medical Journal* of December 13, 1902, publishes a special number containing tributes to Lister's great services to surgery. There are articles by Professor von Bergmann, of Berlin; by Dr. Lucas-Championnière, of Paris; by Professor

Durante, of Rome; by Bloch, of Copenhagen; by von Mikulicz-Radecki, of Breslau; by Howard Marsh, of London, and others, together with an excellent editorial epitome of the Listerian system as practised in other countries and departments of medicine. We regret that among the contributions there are none from our own countrymen. This we are assured was not the fault of the editor of the *British Medical Journal*. Some of our American colleagues, it is inferred, were to blame. The fact by no means argues that we are not conscious of the splendid services of Lord Lister and keenly grateful for them. It is seldom that a man lives to see the results of any great revolution he has brought about in science and to be honored by the world he has so richly benefited; but even here the recognition was sadly and needlessly slow in coming. In a recent speech in London Lord Lister said that he had often thought that if he did deserve any credit it was at the time when perfectly convinced of the truth of the principle on which he acted, and persuaded also of the enormous importance to mankind of being able to carry out that principle in practice he worked for years together with exceedingly little encouragement from his professional brethren. These pathetic words remind us that the old tragedy is constantly being reenacted in our midst, even in our professional life—the tragedy caused by our dull neglect of those who today and every day are achieving the profoundest good for medicine and for humanity. When our benefactors most need help and sympathy we are wholly reckless of them, and even aid the common enemy.

Forest Fires.—The medical profession has always been practically unanimous in its support of all that is being done to check the wasting of the forests of the country. There now comes an opportunity for every doctor, and especially for the country doctor, to make his influence felt in that direction. The foresters, who may be supposed to know whereof they speak, have reached the conclusion that more timber is burned up in forest fires than the whole country uses. The subject has been studied in detail by members of the Bureau of Forestry at Washington, and will be presented to the public in a bulletin soon to be issued. No feature of the forest question is more important, and the country cannot be informed about the facts too soon. One statement that will be made is that nowhere, neither in Maine, in Washington, nor in the South, are the great fires chargeable to the lumbermen, but in most instances are the result of the carelessness of farmers and campers. The whole country is filled with a reckless indifference about fire in the woods, and no hope of maintaining the old forests or of growing new ones can be realized until the fires shall be stopped. What a denuded country means every physician knows. He knows, too, in how slight a degree ragged brush lands can fulfill the hygienic office of a full-grown forest. Therefore the opportunity—no, the *duty*, of the doctor as he goes his rounds is to report every fire that he sees and to exert all his influence against the habit of starting fires out of place and out of season. The money loss to the nation is estimated at a hundred millions a year. Are the lost health-giving tree influences worth any less?

Curettage, Curettement, or Cureting?—A correspondent asks us what is the correct or best form of word to use, *curettage*, *curettag*, *curetment*, *curettement*, *cureting*, or *cureting*, etc. The sole "authority," of course, is that very despotic commander, General Usage. By his orders the most ridiculous words must be accepted, written, and spoken by all. But as to *curettage*, etc., the General has not made up his mind or given any orders. His subjects are therefore making use of all forms, but with doubt and indiscriminate. No one form, indeed, is inherently better than the others, and the only value of discussion is to make the majority of physicians use one form to the exclusion of others. We think it better for many reasons to prefer American and English rather than foreign philologic fashions, and the history of many words shows that the English spirit of the language will finally conquer and the "outlandish" form will be neglected. For this reason we suggest that the French terminations, *-age* and *-ment*, be discontinued and the English *-ing* preferred. Let *cureting* displace *curettage*, *curettag*, *curetment*, etc. If it should be asked why not *cureting*, we at once counter with a query as to leaving out the *e* of the French. If double *t* is demanded (*cureting*) the whole of the tail (as in *cureting*) should be left. But in *quintet*, *etiquet*, *cullet*, *corset*, etc., we have curtailed the needlessly long tail (pace the "zoopholists"!); hence why not in *curet*, *fouret*, etc.? To demand the double *t* is to acknowledge that the instrument should be spelled *curet*, and not *curette*.

Drunkenness in Itself a Punishable Offense.—

We suspect that the greatest progress in reference to the alcohol question will result from the new licensing act which went into effect in England on January 1. Drunkenness, which for some time has there been a social misdemeanor punishable only if accompanied by disorder, is now a legal offense of itself. Moreover, the habitual drunkard becomes a fully labeled outcast of society. The police are drawing up a blacklist in each district of all persons who have been convicted thrice of drunkenness during the year. The lists and photographs will be supplied to all liquor sellers, who will be heavily fined, and, on repeated offense, will lose their licenses if they sell drink to those blacklisted. Persons treating habitual drunkards will be heavily fined, as also will be intoxicated persons in charge of infants. Combined with the various methods of supplying the drinker with substitutes for bad liquor, for limiting its sale, for offering pleasant places under good conditions for social enjoyments, there is no reason why the disease sequels of alcoholism may not be speedily lessened. The English act is wisely careful not to interfere with the liberty and free-will of an adult by legal prohibition which cannot be executed. Public drunkenness is of itself a public offense, and it is a strange oversight that reformers have so long allowed the criminal to go unpunished.

The Association of Medical Librarians is making noble progress in its noble work. Its library membership now numbers over 40, and there are some 30 individual affiliated members. In 1902 it distributed to libraries over 5,000 volumes, chiefly duplicates from the

larger libraries sent to libraries not possessing them. This noteworthy progress must be gall and wormwood to those firms of medical book and periodical publishers which have derided and discouraged the formation of public medical libraries. That the medical profession is Christian cannot be doubted if to love its enemies is a proof—and if in this case it really does love them. We have no doubt that the *Association* has not realized the thousandth part of its coming usefulness. Physicians and their heirs should make it the legatee of their valuable medical books, and medical publishers should be shown the impolicy and stupidity of the selfishness of hating public medical libraries. The greater the number of such libraries the more books will be sold to individuals. Authors of medical books should remember to bargain with their publishers that a copy should be presented to each library on the list of the Association. Professional medical journals of the country give yearly subscriptions to these libraries. Commercial medical journals do *not*. Are you a subscriber or contributor to commercial medical journals?

Mark Twain on Eddyism.—When a solemn ignoramus turns philosopher and takes himself seriously we often have the perfection of humor. But when a professional humorist turns into a solemn prophet, we have as a result neither sense nor humor. Mark Twain seems to be determined to carry the latter thesis to the bitter end of realization. In the *North American Review* for December he plainly implies that eddyism is destined in 25 years to become the new religion of the world, and to stand second only to Rome in power and numbers. He says it now has 500 churches and 1,000,000 members in America. It offers a new personage to worship. More than four-fifths of the pain and disease of the world, he adds, is purely imaginary, and eddyism, we are assured, can rid the world of all of this; and no other force can. All of this reminds us that last year Mark testified before the Committee on Public Health of the New York Legislature that he had been treated by osteopaths, and that not to license them was to interfere with one's personal liberties, that he had a right to do with his own body as he pleased, and that the Legislature had no right to say who should treat him, or how it should be done, etc. It is a pity that the gay sense of the ludicrous is lost in old age, and sane logic gives place to senile fantasy. In 25 years eddyism will be as powerless as the Perkins' tractors, and Twain's successor with the cap and bells will make merry over the vaticinations and sociology of Mark himself.

Lemon Juice and the Typhoid Fever Germ.—

In its latest *Bulletin* the Chicago Health Department advises the use of lemon juice upon raw oysters, and cites the fact that the use of acids was advised nearly 30 years ago by the present assistant commissioner of the department as a prophylactic against cholera. It is also said that a cablegram from London announces that Dr. Asa Ferguson has demonstrated that lemon juice has the power of destroying the bacillus—in the proportion of one teaspoonful to half a glass of typhoid-infected water, says the department *Bulletin*. Further investigations are

being made to show how small an amount will suffice and whether it will be equally destructive to other germs, especially of the colon group. The report of Dr. Jaques, the director of the laboratory, says:

The following experiment was made in the laboratory to test the value of lemon juice in destroying the typhoid bacilli: 120 cc. of bouillon was inoculated with the bacillus typhosus. The flask was placed in the incubator at 90° for 12 hours. At the end of this period 4 cc. of lemon juice was added. At the end of four hours plates were inoculated from this flask. The plates at the end of 24 hours showed no growth. Control plates showed abundant growth.

In view of the fact that typhoid fever has often been traced to oysters and the bacilli found in them, this method of prophylaxis is worthy of serious attention and further testing.

A Nonrecurrent Epidemic.—One of the strange things one finds in the history of medicine is the appearance of a peculiar disease which does not again recur. A writer in the *Nineteenth Century and After* for December, 1902, cites such an epidemic of disease among animals which occurred in Italy in the last century before the Christian Era. The fact is also noteworthy for another reason, viz., that it was made the subject of a poem by Virgil. Lord Burghclere gives a translation of the part of the *Georgics* containing it. Many attempts have been made in modern times to describe the conditions of disease in poetic language, but all have failed; just why, no one seems to understand. Virgil certainly did not fail, and he gives a description as accurate as was then possible of the symptoms of the disease. It was not our modern rinderpest; it was called by elder writers "murrain and blain;" it was a black and putrid fever. The only thing that seemed to check the ravages of the disease was that advised in the poet's words, *continuo culpam ferro compece*—"spare not the steel, but stamp the mischief out." The doctors were of no avail—

"Men called on Medicine: and her healing art
Proved but a bane. Great masters of the craft,
Chiron the Centaur, born of Philyra,
And wise Melampus, Amyphaon's son,
Stood by with helpless hands and baffled lore."

EDITORIAL ECHOES

The deathrate of New York City in 1902 was 18.74 per one thousand of population, as compared with 20.02 for 1901. The difference in the two rates represents a saving for 1902 of 4,649 lives. These figures are taken from the annual report of Dr. Lederle, president of the Board of Health, who has a perfect right to be gratified over the showing which he is able to make. It is not pretended that the splendid administration of the Health Department is wholly responsible for the improvement. Deaths from heat prostrations were at a minimum last summer; there chanced to be fewer deaths from old age in 1902 than during the previous year, and other conditions, over which nobody asserts any control, happened to be favorable. But a decrease of 582 in the number of deaths from tuberculosis, a decrease of 100 in the deaths from smallpox, and of 35 percent in the diphtheria deathrate, can properly be ascribed to enforcement of sanitary regulations by the Health Board and by the Street-Cleaning Department. That so much has been accomplished in a single year is gratifying indeed.—[*N. Y. Evening Post.*]

AMERICAN NEWS AND NOTES.

GENERAL.

Miscellaneous.—PHILADELPHIA, PA.: Dr. James Tyson has been appointed visiting physician to the Pennsylvania Hospital in place of the late Dr. Frederick Packard.

Insufficient Hospital Accommodations.—Surgeon-General O'Reilly, of the Army, is anxious to have constructed at Fort Riley, Kan., a modern hospital of 100 beds. It has been found that the present hospital cannot be enlarged to the required capacity, and the constant growth of the garrison necessitates better hospital facilities.

Medical Clerks.—The United States Civil Service Commission announces that the Commissioner of Pensions would like to provide for the appointment of 25 young students of medicine as clerks or copyists in the Pension Office. Examinations for the position will be held January 27, 28, 1903, in Washington, D. C. Only graduates of recognized medical schools will be examined.

Good Sanitation Must Continue in Cuba.—The lower House of the Cuban Congress has voted \$400,000 to aid the city governments in the island to continue the high sanitary standard achieved under American occupation. Contrary to current reports it is claimed that no retrogression had occurred in Havana, but this was not true of the interior and east coast towns. This was, it was claimed, not due to apathy, but to lack of funds. Now that a sufficient sum has been granted it is believed the former efficiency will be restored.

Hospital Benefactions.—ORANGE, N. J.: A fully-equipped bacteriologic and pathologic laboratory, to be known as the Graves Laboratory, has been presented to the Orange Memorial Hospital by Dr. William B. Graves, of East Orange. DERBY, CONN.: It is announced that the \$50,000 which had been bequeathed by George Griffin, of this city, for the construction of an emergency hospital, has become available for use. MR. GRIFIN died three years ago. PHILADELPHIA, PA.: The late Mary Drury, of this city, bequeathed \$300 to the St. Vincent's Home and Maternity Hospital, and \$100 to the Free Hospital for Poor Consumptives.

Pension Money of the Insane in the Government Hospital.—It is probable that new legislation will be inaugurated to effect a more equitable distribution of pension money given to those committed to the Government Hospital for the Insane. Under the present regulations this pension money for each individual, of whatever amount, is placed in the hands of the superintendent and goes into the general fund for maintenance as an offset for the patient's expenses in the institution. It is asserted that in some instances this pension money is in excess of the actual expenses of the patient, and many things are withheld from the patient which under the present regulations the government institution cannot supply, whereas, if his pension money were used for his special needs greater justice would be done. The reform will probably consist in placing each pensioner's money in a separate account at the institution with the pension.

Birthrate.—The *Chicago Tribune* is authority for the statement that in Boston the birthrate among people of foreign parentage is 39 per 1,000; among people of native parentage it is only 8 per 1,000; while in New York the corresponding figures are 42.5 per 1,000 and 11 per 1,000. The *Tribune* is of the opinion that the reason for the present situation is a shrinkage in our native birthrate, due to conditions which are not physiologic, but are social and industrial. The native American population is at the top of the social and industrial ladder in this country, and the consequence of that position is exactly what it would be in a similar position in any other part of the world. The higher the comparative position of a family the lower its birthrate. The richer families of Europe have fewer children than the poorer families. This is not due to physiologic conditions, but, as stated above, to sociologic, industrial, and economic conditions.

Plague in Mexico.—Late reports state that the disease has spread in Mazatlan and that the alarm which had somewhat abated has returned with increased strength. People are fleeing from the city at the rate of 300 a day, and it is estimated that nearly 5,000 have already left. Strenuous measures have been adopted to improve the sanitary condition of the city. Streets are to be kept scrupulously clean, and the city government has appointed an inspector for each block, whose duty it is to enter every house in the block at least once during the day, make a thorough inspection and report any suspicious sickness. Fifty pavilions are being constructed for the use of persons who have been exposed to the disease. The houses and personal effects of all who died, as well as of those stricken with the plague, have been burned. A strong cordon still protects the interior towns, and persons from Mazatlan are prevented from entering.

Seasickness.—Mayor Des Planches, Italian Ambassador to the United States, writes to a physician in New York giving his experience in seasickness. He says: "After having found by experience that one way not to suffer from seasickness was to lie in a horizontal position, I happened to notice that fixing my eyes upon a mirror while dressing, even when the sea was stormy, was sufficient to relieve the unpleasant sensation of seasickness. During my last ocean trip I tried this accidentally discovered remedy and always with good results." This is explained by an authority who asserts that the eye of the observer when on the rough sea changes every few seconds to a different horizon, and has in consequence the sensation of the lack of equilibrium. We call that vertigo, which in its highest form manifests itself in pallor, cold perspiration, weak pulse, nausea and vomiting, the symptoms of seasickness. The relief of the symptoms as observed by Mayor Des Planches is explained on the ground that the eyes and the mirror form one body, and the changing of the horizon being reflected by a surface equal in every plane the eye loses the consciousness of the different changes and equilibrium is maintained.

"Index Medicus."—From Robert Fletcher, M.D., editor-in-chief of the revived *Index Medicus*, comes the following: The *Index Medicus* was established in 1879, under the editorship of Drs. John S. Billings and Robert Fletcher, and was discontinued in 1899. The present publication, which is undertaken by the Carnegie Institution, will be known as *Index Medicus*, Second Series, Volume I, commencing in January, 1903. It consists of the titles in full of books, pamphlets, theses, contributions to cooperative works and original articles in journals, transactions of medical and scientific societies, arranged under subject headings. It is issued as early as possible after the first day of the month, and it represents the literature of the preceding month. A table of contents accompanies each number, and on the completion of the volume an "Annual Index of Authors and Subjects" is issued. The subject part of this annual index is elaborately subdivided, the classification closely resembling that of the Index Catalogue of the Library of the Surgeon-General's office. The titles in certain languages, as Russian, Polish, Swedish, Danish, Finnish, Hungarian, Bohemian, Roumanian, and Japanese, are translated into English. The *Index Medicus* publishes no advertisements and does not exchange copies with other journals.

The Appointment of Assistant Surgeons in the Army.—The difficulty of obtaining young men graduates of medical colleges who are able to pass the examination for appointment as assistant surgeons in the Army must, sooner or later, engage the attention of the authorities. Surgeon-General O'Reilly has a plan in contemplation which he hopes to see realized before he finishes his term of office. It is his idea to take graduates and, after examining them as to their general qualifications, admit them to the Army Medical School in Washington and give them a training in special branches for a year or more, subjecting them to examinations as they progress and at the end of the term select from among them those who are deemed competent to fill the vacancies in the medical corps. Such as do not find a place in the regular establishment would be of use in the national guard organizations, which latter will be benefited by having available young men who are specially trained in military medicine and surgery, hygiene and sanitation. In this way the State troops would have at their bidding surgeons who have a practical knowledge of their military as well as professional duties. Surgeon-General O'Reilly is also in favor of requiring that the young men who enter the medical department after this preliminary education shall be required to serve at least five years.—[*Army and Navy Register.*]

EASTERN STATES.

Smallpox in Massachusetts.—During the year 1902 there were 2,263 cases of smallpox in the State, and of these Boston furnished 1,015 cases or nearly one-half. For the year 1901 there were but 778 cases.

To Assist in the Treatment of Tuberculosis Among the Poor.—An organization which aims to improve the condition of poor persons suffering with tuberculosis and finally to stamp out the disease has been formed by several society women of Cambridge, Mass. In order to make the work practical all of the physicians in the city have been asked to cooperate with the organization by sending to the members designated the names of those who lack the means to provide themselves wholesome and nutritious food. The dietary which the doctor prescribes will be indicated by a diet card, and this food will be supplied at the expense of the organization. The organization will also be aided by district nurses, who will visit the patients in their homes. The principles now in vogue in the Rutland Sanatorium will be followed out as nearly as possible, thus making the work educational as well as remedial.

NEW YORK.

Trachoma in School Children.—According to a recent report in the first ten days after the old Gouverneur Hospital had been placed at the disposal of the Health Department for

use as an eye hospital, 2,128 cases of trachoma in school children were treated, and in 116 of these operations were necessary.

Births in Manhattan.—According to the records of the Health Department, during the year ended September 30, 1902, there were 51,688 births in the borough of Manhattan alone. This exceeds the figures of last year by 1,460 and indicates that on an average one child was born every 10 minutes. There were 29,406 births reported by physicians and 22,282 by midwives.

Decrease in Deathrate for New York.—Dr. Lederle, president of the Board of Health, in his annual report states that the deathrate for New York City for 1902 was 18.74 per 1,000, which is considerably the lowest rate ever reported for this city. The rate in 1901 was 20.02. The statement is made that the epidemic of measles during the first four months of the year increased the number of deaths over the year 1901, for the same months, by 1,100; but the decrease in the number of deaths from sunstroke, there being 1,244 less than in the previous year, made the rate about even.

Alien and Domestic Insane in New York.—Investigation carried out for a committee of the United States Senate by two experts from the lunacy institutions in New York shows a condition differing to some extent from what was expected, especially in regard to the proportion of insane furnished by the foreign countries. It appears that prejudice against foreigners from Italy has been the foundation for false and exaggerated statistics relative to the number of Italian insane. The New York Commission on Lunacy reports the number of patients admitted to the State asylums from 1888 to 1900, which amounted to 59,603, of whom 30,529 were native Americans. This does not include the native insane who are confined in private institutions. During the period above mentioned the number of British insane numbered 10,770; and the German insane, 6,901; while Italy contributed but 830 patients, a very favorable showing for the Italians.

State Hospital Reform.—At a recent meeting of physicians on Ward's Island papers were read and discussed relative to the aims and plans of the Pathologic Institute of the New York State hospitals. Dr. Adolph Meyer said: "We must make the work of the physician as medical as possible, abolish all regulations which derange their work; in short, all and everything that makes a young assistant put frivolities above medical accuracy. We must investigate how large a force is required to reach a standard of work on which we can agree. We must make somebody responsible for the accuracy and efficiency of the medical work which the superintendent cannot possibly supervise well enough when he is responsible for all the administrative burdens, and this person or these persons, let us say the older members of the staff, must be official helpers to the younger members, that is, sources of instruction and stimulation." Arguments were adduced to show that medical schools do not provide the necessary training for actual hospital work and that the assistant members of the hospital come unprepared for special work. A congress of conferences has been appointed in connection with the Pathologic Institute of the New York State Hospitals and many subjects relative to the improvement in hospital management will be discussed. At these conferences such matters as the following are to be discussed: Improvements in the training-school for nurses; better facilities for the admission of emergency cases of insanity and for voluntary patients; the organization of a department in the State hospitals for the more effectual treatment of acute diseases; the construction of pavilions for isolating tuberculous patients; and the issuance of a new textbook for nurses in the training-school.

PHILADELPHIA, PENNSYLVANIA, ETC.

Cause of Typhoid Fever in Atlantic City.—After thorough investigation of the typhoid fever cases which occurred in Atlantic City last summer, it has been found that the entire trouble was caused through a break in the sewer pipes which crossed Penrose Canal, which vicinity was used by the three largest oyster dealers in the city for freshening oysters for market. The total number of cases was 72.

Smallpox is reported to be increasing throughout Pennsylvania. This increase is especially noticeable in Philadelphia. In the former there are now under treatment 509 cases of smallpox, while in the latter there are between 70 and 80 cases of the disease, 13 cases occurring within the past week. A corps of vaccine physicians, numbering 36, has been appointed in Philadelphia to make house-to-house visitations for the purpose of vaccinating the inmates, and \$25,000 has been appropriated to combat the disease.

SOUTHERN STATES.

New Hospital for Tampa, Fla.—Plans are now under consideration for the erection of a new city hospital. The building proposed will cost about \$10,000 and will be maintained by the city.

Memorial to Major Walter Reed.—At a recent meeting of the American Association for the Advancement of Science resolutions were adopted on the death of Major Walter Reed and a committee of nine members appointed to carry out plans for the erection of a memorial to his memory.

Diphtheria on the Training Ship "Buffalo."—From Pensacola comes the news that the training ship "Buffalo," with several hundred naval apprentices, has put in at Pensacola on account of the number of cases of diphtheria on board and in order that the sufferers may receive proper medical attention. The "Buffalo" was on a cruise of several months in the Gulf, but the discovery of diphtheria among the apprentices required a rearrangement of her voyage.

Site for City Hospital.—The *Baltimore Sun* states that the Health Department officials have selected a site near the Bay-view Asylum for a city hospital for infectious diseases. It appears that in addition to the hospital for infectious diseases other municipal institutions will be established upon this property. Among the more important buildings contemplated is the Home for Consumptives, to be built entirely of iron and glass, largely on the general plan of a conservatory. A building is also contemplated which will serve as a parental home for the care of certain classes of boys now at the Colored House of Reformation at Cheltenham.

Quarantine to be Relaxed.—The *Louisville Courier-Journal* states that as a result of the discovery announced by physicians and sanitary experts that the mosquito is the sole agency for the transmission of yellow fever germs it is likely that the stringent quarantine regulations between Cuba and the southern part of the United States will be greatly modified, which will mean many thousands of dollars annually to the South. Dr. Bailey, of Louisville, is authority for the statement that the yellow fever epidemic of 1878 cost the South many millions of dollars at the time, and the strict quarantine which has been enforced has debarred much traffic from its ports. That the work of the sanitation of Cuba under American methods has proved to be beneficial is apparent when it is considered that the city of Havana was not free from yellow fever for 140 years until 14 months ago, and during that 14 months not one case of yellow fever has developed in the city. The work of the sanitation of the city has only begun, and when the additional building facilities are completed and the water supply is purified Havana will be free from a curse which has held it in bondage for more than a century.

WESTERN STATES.

Medal Awarded.—It is reported that a medal has been awarded to St. Paul, Minn., by the directors of the Paris Exposition, showing it is the healthiest city in the world and has the lowest deathrate. It was also decided that this city has the best system of sanitation in the world.

Prison Reform in Illinois.—It is believed that the report soon to be submitted by the State Board of Health will make some startling disclosures and recommend sweeping reforms in the various insane asylums and prisons of the State. It is claimed that insane prisoners have been kept in isolated retreats because of lack of accommodations elsewhere. The sanitary conditions in many of the county jails of the State is said to be in a deplorable condition. Since the State Board of Health under the present regulations has no authority to enforce reforms the coming Legislature will be requested to enact such measures as will give the board the proper and legal authority for the necessary government of these State and county institutions.

Chicago's Deathrate.—The *Chicago Tribune* is authority for the statement that for the seventh consecutive year Chicago's deathrate has been lower than that of any other city of first magnitude, and that, too, in the face of the fact that 1902 was a year of frequent grave concern over conditions affecting the public health of the city. With the exception of the year 1901 the rate is the lowest in the records of the Health Department. Computed on an estimated midyear population of 1,820,000 the unrevised total of 26,384 deaths from all causes in 1902 gives the rate 14.49 per 1,000 of population. Appended figures of the deathrate in the other cities of first magnitude are given:

Cities.	Population.	Total deaths.	Rate per 1,000.
New York City.....	2,189,632	41,034	19.18
Boston.....	588,730	10,950	18.58
Greater New York.....	3,682,501	67,450	18.28
Philadelphia.....	1,350,000	24,108	17.85
Chicago.....	1,820,000	26,384	14.49

CANADA.

Hospital for Contagious Diseases for Montreal.—News comes that the authorities of Montreal are favorable to a plan agreed upon between one of the English hospitals and the Notre Dame Hospital, that each shall erect a pavilion for the treatment of contagious diseases. The city is to grant to each the sum of \$10,000, which would provide for 20 patients per

day, the contract to be for a period of 20 years. When the number exceeds this number the city shall pay \$1 a day for each adult and 75 cents a day for each child.

FOREIGN NEWS AND NOTES

GENERAL.

Cancer in Germany.—It is claimed that 70% of male and 68% of female cancer patients suffer from cancer of the digestive organs.

Miscellaneous.—The Nobel prize for natural science and chemistry has been awarded to Dr. Emil Fisher, of the University of Berlin.

Light-cure Treatment of Lupus.—It is announced that Professor Niels Finsen, of Copenhagen, has completed a short account of the results he has obtained in this treatment. Since 1895 about 800 patients have been benefited by it, having wholly or partly recovered. Professor Finsen contemplates publishing a large work on the light cure next year.

GREAT BRITAIN.

Decreased Deathrate from Cancer.—According to statistics published by the London County Council, the mortality from cancer in London during 1902 shows a slight decrease, the percentage being .93 per thousand as compared with .95 in the previous year.

CONTINENTAL EUROPE.

Sanatorium for Women Alcoholics.—It is reported that a special sanatorium is to be erected in St. Petersburg for the treatment of women alcoholics.

Intemperance in Absinthe.—It is asserted that alcoholism in France is steadily increasing and that the use of absinthe and other deleterious liquors is rapidly undermining the French constitution and is one of the main factors in the decrease of the French population every year. A volume might be written on the strange hallucinations which absinthe drinking develops in its votaries. The enormous increase in France of late years of pulmonary tuberculosis and other tuberculous diseases is said to be due to the abuse of absinthe, and the present Cabinet is credited with the resolve to introduce stringent legislation against its sale at the next session of the Chamber, opening in January.

Factory Legislation.—In Germany, children under 13 may not be occupied in workshops or factories, and above that age they can only be employed after they have finished their course in the schools. Children and young women may not be employed in such factories regarded as dangerous to health and morality. This latter regulation now includes glassworks, wire-drawing mills, sugar refineries, rolling mills, brick works, coal mines, tin and lead mines, etc. Children under 14 must not work longer than six hours per day, and young people between 14 and 16 years can not be employed longer than 10 hours per day. Their work shall not begin earlier than 5.30 in the morning, and shall not be continued later than 8.30 in the evening, and must be interrupted by regular intervals of rest. Similar regulations are in force regarding females, and even if they are over 16, they must not be employed more than 11 hours per day, or 10 hours on Saturdays and the days preceding holidays.—[*Public Health Reports.*]

OBITUARIES.

Samuel Fenwick, of London, Eng., consulting physician to the London Hospital, and assistant physician to the Hospital for Diseases of the Chest, died December 11, aged 81. He obtained a wide reputation as a diagnostician and his "Students' Guide to Medical Diagnosis" has been translated into many languages. He was especially interested in the study of disorders of the digestion and contributed to literature many valuable works on this subject. During the last four years he evinced much interest in the preparation of a series of monographs upon diseases of the stomach, and he saw the completion of the first two volumes, which deal with simple ulcers and tumors of that organ.

Karl Nicoladoni, professor of surgery, died at Gratz, December 4, aged 55. He is known as the originator of the method of restoring a missing thumb by utilizing the second toe as a substitute. One of his first contributions to science was the successful relief of paralytic contractures by the transplantation of tendons. His research on the spine in scoliosis is the basis for our knowledge on the subject, and he was also the first to describe the syndrome caused by the torsion of the seminal cord, and to suggest orchidopexy.

Professor Richard von Kraft-Ebing, the wellknown neurologist and alienist of Vienna, died at Gratz, December 22, aged 62. He was professor of physiology and nervous diseases at the University of Vienna. His manuals on criminal psychology, psychiatry, and foren-

sic psychopathy have passed through numerous editions and his contributions to medical literature are widely quoted. Credit is due him for the general recognition of the close relationship between psychiatry and neuropathology.

John F. Couch, of Somerville, Mass. He was graduated from the Harvard Medical School in 1872. Later he took a course in obstetrics at the Rotunda Hospital, Dublin, Ireland, remaining there 6 months. For 3 years he was city physician to Somerville and also served as a member of the Board of Health. He was a member of the Massachusetts Medical Society, and a former president of the Somerville Medical Society. He was a trustee of the Somerville Hospital and one of its visiting physicians.

Joseph R. Laine, of San Francisco, Cal., December 15, aged 56. He was graduated from the University of Buffalo in 1876 and was a member of the American Medical Association. For 8 years he was a member and secretary of the State Board of Health, and was also one of the organizers of the College of Physicians, being its president until 1899. He was a lieutenant-colonel and assistant surgeon-general in the National Guard of California.

Jacob M. Kraus, in Buffalo, N. Y., December 19, aged 36. He was graduated from the University of Buffalo in 1889, and was a member of the Buffalo Academy of Medicine, of the New York State Medical Association, and of the American Medical Association. At the time of his death he was on the medical staff of the German Hospital and physician to the Erie County Penitentiary.

Julius Kohl, of Belleville, Ill., January 4. He was graduated from the Washington University, St. Louis, Mo., in 1859. He was a member of the Illinois State Board of Health, and was a United States delegate to the National Congress of Physicians at St. Petersburg in 1900. He was also a delegate to the American Tuberculosis Congress, held in New York in 1902.

David Jacobson, of New York City, December 31, aged 38. He was graduated from the medical department of the New York University in 1887. He received a special diploma for physical diagnosis in 1886 from Dr. Alfred L. Loomis, of Bellevue Hospital. He was connected with the Eastern District Hospital.

Frederick L. Brady, in New York City, December 20, aged 30. He was graduated from the College of Physicians and Surgeons, New York, in 1899. He was a member of Troop B of Roosevelt's Rough Riders during the Spanish-American war.

Louis Wheat, of Richmond, Va., December 29, aged 46. He was graduated from the Medical College of Virginia, Richmond, in 1881, and was professor in diseases of the genitourinary organs and syphilis in the University College of Medicine.

Robert H. Moore, of Hot Springs, Ark., December 15. He was graduated from the University of Louisiana, New Orleans, in 1861. He served as a major-surgeon in the Confederate States Army and was for 6 years coroner of Garland county.

S. S. Cornell, of Athens, Ont., December 2, aged 37. He was graduated from the Faculty of Medicine of Queen's University and the Royal College of Physicians and Surgeons, Kingston, Ont., in 1886.

William B. Stevens, of Nelson, Pa., at Hartford, Conn., December 11, aged 37. He was graduated from the Jefferson Medical College, Philadelphia, in 1891.

Carl Schumacher, in Syracuse, N. Y., December 15, aged 51. He was graduated from the Homeopathic Medical College, Cleveland, Ohio, in 1883.

Francis M. Davis, of Houston, Tex., December 16. He was graduated from the Texas Medical College and Hospital, Galveston, in 1874.

William A. Kidd, in Independence, Pa., December 11. He was graduated from the Western Reserve University, Cleveland, in 1897.

A. Wilber Hoon, in Pittsburg, Pa., December 16, aged 25. He was graduated from the Jefferson Medical College, Philadelphia, in 1902.

William P. Armstrong, at Jamestown, Cal., December 16, aged 73. He was graduated from the University of Louisville (Ky.) in 1857.

John M. Bowser, in Goshen, Ind., December 19, aged 53. He was graduated from the Medical College of Ohio, Cincinnati, in 1878.

Henry Bauer, in Brooklyn, December 13, aged 27. He was graduated from the Long Island College Hospital, Brooklyn, in 1896.

J. K. Barney, in Weir City, Kan., December 12, aged 60. He was graduated from the Washington University, St. Louis, in 1874.

Hugh E. Ward, assistant professor of bacteriology in the University of Illinois, died in Grand Rapids, Michigan, December 30.

George R. Weeks, in Los Angeles, Cal., January 2, aged 76. He had held several State and municipal positions in Arkansas.

William S. Harding, of St. John, N. B., December 19, aged 88. He was graduated from the University of Edinburgh in 1836.

John S. Mason, near Waverly, Va., December 16, aged 85. He was graduated from the University of Maryland, 1836.

Jacob Hays, of Chicago, January 3, aged 62. He was graduated in medicine at the Vienna University in 1863.

George W. Rhodes, of Boston, Mass., December 31, aged 71.

Joseph A. Huff, of Pittsburg, Pa., December 30.

S. Choppin, of New Orleans, La., December 29.

SOCIETY REPORTS

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twelfth Annual Meeting, Held at St. Joseph, Mo., December 29 and 30, 1902.

[Specially reported for *American Medicine*.]

FIRST DAY.

The following officers were elected for the ensuing year: President, Dr. Alexander Hugh Ferguson, Chicago, Ill.; first vice-president, Dr. C. H. Wallace, St. Joseph, Mo.; second vice-president, Dr. C. W. Oviatt, Oshkosh, Wis.; secretary and treasurer, Dr. George H. Simmons, Chicago, Ill.; members of the executive council, Dr. James E. Moore, Minneapolis, Minn., chairman; Dr. A. F. Jonas, Omaha, Neb.; Dr. O. B. Campbell, St. Joseph, Mo.; Dr. C. H. Mayo, Rochester, Minn., and Dr. J. R. Hollowbush, Rock Island, Ill. Denver, Colo., was selected as the place for holding the next annual meeting; time, December 28 and 29, 1903.

Evolution of the Treatment of Cancer of the Rectum.—C. H. MAYO (Rochester, Minn.). To sum up the main objections of the past operations, the author stated that we have:

1. Ineffectual removal with local recurrence, so common in the perineal type.
2. The extensive mutilating character of the Kraske before operative conditions were known.
3. The frequent failure of all methods of union of proximal and distal portions of the bowel, which, when united with the destruction of the levator ani and internal sphincter, and anus saved, represented but one-third of the controlling apparatus of the bowel.
4. The frequent formation of stricture, either cicatricial or cancerous, after operation, necessitating inguinal colostomy.
5. The loss of the fecal content in straightening the sigmoid. That sentiment, and not chance, has proved the main reason for continuing to place an uncontrollable anus in an inaccessible situation. The gain in the combined operation has been in a selection of the operation to the case, radical removal *en masse*, with all glands, fat, and connective tissue, or colostomy for palliation, the retention of the sigmoid as a fecal container, the peculiar formation of the anus, giving a fair control in an accessible situation.

Carcinoma Uteri.—H. C. CROWELL (Kansas City, Mo.) believes that nothing is gained by hysterectomy for carcinoma of the cervix unless very early discovered. Later operations may avail in carcinoma of the body of the uterus. In cases well advanced his individual experience leads him to believe that more days or months, as the case may be, are added to the life of the patient than by any attempt at extirpation, by cutting and scraping away the necrotic tissue down to solid tissue, burning that surface with the thermocautery, and treating subsequently by touching the surface occasionally with 4% formalin. By this treatment disintegration is retarded, hemorrhage and discharges are checked, enabling the patient to recuperate sometimes to a remarkable degree. The suffering is lessened and the patient is relieved of the shock and dangers attending more radical procedures. The essayist urged frequent early examinations of parous women, who should be advised of the expediency of such as a routine safeguard after the age of 36.

Oblique Inguinal Hernia.—A. E. BENJAMIN (Minneapolis, Minn.) described an operation for which he claimed the following advantages: 1. There are no sutures for the tissues to absorb. 2. There is no additional culture media in which infectious microorganisms may grow and cause deep abscesses. 3. There are no buried, nonabsorbable sutures left to irritate the tissues and cause further trouble. 4. There is no necrosis from tight sutures, therefore few, if any, stitch abscesses. 5. The gauze rolls act as elastic cushions, which prevent scars from the sutures. 6. The operation completely closes the breach and makes a firm wall. 7. All sutures, after serving their purposes, are removed, leaving only the natural supports.

Rupture of Gallbladder or Duct from Vomiting, with Rupture of the Appendix in the Same Patient.—W. W. GRANT (Denver) reported two recent cases of appendicitis because of the interest connected with drainage and phagocytosis. In connection with these cases, he states that he is satisfied of having saved some patients after peritoneal extravasation by the liberal use of gauze for drainage. In abdominal operations, drainage imperils the integrity of the abdominal wall, therefore predisposes to hernia. It should consequently be dispensed with as soon as possible. But in the enthusiasm for new theories and facts, in a justifiable belief in the efficacy of hyperleukocytosis, he believes it is not wise to hastily discard surgical procedures which have stood the test of abundant experience. He also reported a case of acute yellow atrophy of the liver. Whether the condition is primarily a general infectious disease of a rare and unusual nature, or primarily a local infectious disease of the liver, is not known. The suggestion of an intestinal origin has no distinct foundation. The resemblance to phosphorus poisoning is striking, though differing in important particulars. While the urine of both may contain leucin and tyrocin, they are more constant in the former disease. Evidently the disease is rapidly diffused through the circulation, and future investigations will probably disclose a bacterial origin and nature.

Chronic Pancreatitis and Pancreatic Cyst.—B. B. DAVIS

(Omaha, Neb.) reported two cases, one of pancreatic cyst, the other chronic pancreatitis, both of which had previously been subjected to exploratory abdominal section, and the diagnosis of malignant disease of the pancreas made. In diagnosis, the clinical symptoms will have to be depended upon. Glycosuria, fatty stools and muscle fibers in the stools, which theoretically ought to be diagnostic factors, in pancreatic disease, practically have usually been found absent. In cases in which glycosuria was present, destruction of the islands of Langerhans has been found to exist. Cases in which infection is the causative factor, prolonged drainage of the gallbladder was recommended.

Gunshot Wounds of the Stomach.—J. W. ANDREWS (Mankato, Minn.) reported a case of a boy of 11, upon whom he had operated. The patient rallied from the shock, and did well for the first three days after the operation, when he began to fail, and died on the eighth day. A necropsy showed that death was from septic peritonitis. Since surgeons of international reputation do not agree as to an immediate operation, he prefers to accept that which may seem less conservative, namely, an immediate operation in all cases where it is reasonably certain that the stomach has been perforated.

Fowler's Position in Abdominal Surgery.—VAN BUREN KNOTT (Sioux City, Iowa) has employed this position in the treatment of cases of septic peritonitis, and he reported five recoveries from diffuse septic peritonitis. These successes were not consecutive, however, no two of them having occurred without an intervening failure. Brief histories of the five successful cases were given, as they are the only cases of diffuse septic peritonitis that have been operated upon by the author successfully. The Fowler position was maintained for 24 hours, unless some special reason for continuing it was present. He says that the head of the bed should be raised from 18 to 20 inches from the floor. He hoped that those present who had neglected to employ the Fowler position would be induced to do so, for he believes that it can do no harm, and in many cases will prove of much value.

Old Irreducible Dislocations of the Shoulder-joint.—A. F. JONAS (Omaha, Neb.) referred at length to the literature of such cases, and reported seven in his own practice. His method of dealing with these cases consisted chiefly of (1) manipulation, using the forearm as a lever, rotating outward and inward, abduction and adduction, never forgetting for a moment a possible accident to the axillary vessels and nerves, and the possibility of fracturing the humerus. (2) If this plan fails the capsule is incised, and all cicatricial tissue is extirpated. All muscular attachments that offer restraint are severed, the axillary vessels are protected with a broad, flat retractor, and the head of the bone is brought into place by means of an elevator, assisted by manipulation and traction. To avoid infecting the wound, in this last maneuver, it is advisable to firmly wrap the entire arm and hand with wet sublimate towels. Dry towels are liable to slip and become displaced, making it possible for the operator's hand to become infected. If the head cannot be replaced, then (3) the head of the humerus should be resected, an operation to be avoided, when possible, on account of the resultant flail-like condition of the arm, and yet must be done (a) when the humeral head and neck become too extensively stripped of their attachments, experience having shown that necrosis may occur in 16% of the cases; (b) when osseous union has occurred between the head and the ribs; (c) when, after a division of all restraining soft parts, the head rests against the point of the acromion process.

End-to-End Anastomosis of the Popliteal Artery for Gunshot Injury.—ALEXANDER HUGH FERGUSON (Chicago) gave a history of the injury, described the physical findings, and the operation which he did.

Natural and Logical Treatment of Injuries of the Pelvic Floor Occurring During Parturition.—WILLIAM E. GROUND (West Superior, Wis.) concluded that almost every woman during her confinement suffers injuries from which she does not recover unless she is subjected to a secondary operation for repair of lacerations of the pelvic floor; that immediate suture of apparent lacerations does not restore pelvic support in the vast majority of instances; that from one to two months after labor the woman should be subjected to a thorough examination and any relaxation corrected before it has had time to impair her health.

Lung Surgery: Historical and Experimental.—B. MERRILL RICKETTS (Cincinnati, Ohio) illustrated his lecture by lantern slides. His conclusions were: 1. Severing one or more of the larger pulmonary bloodvessels results in instant death. 2. If death does not result within a few minutes bleeding will be slow and gradual. 3. If bleeding is slow and gradual it may require hours or days to cause fatal exhaustion. 4. If death does not occur until after the end of the second day following severe bleeding infection is its cause. 5. All, or a part of the escaped blood, may pass through the opening in the chest into the bronchus or alimentary tract. 6. The blood may escape into the pleural cavity or cavities, pericardial or peritoneal cavity, or all, and thereby become concealed. 7. *Pneumonotomy*. More definite knowledge of conditions and symptomatology is necessary that surgery of the lung may be perfected and made more aggressive in general. 8. Abnormalities, congenital or acquired, must always be considered in dealing surgically with the lungs. 9. Atelectasis and apneumatosiis should be cared for by relieving the compression by removing the cause. 10. The same surgical principles can be applied to the lung as other organs of the living body. 11. The bony chest may be opened

for exploration of the lung with as little danger as opening the abdomen, cranium, articulating capsule, kidney, liver, pancreas, spleen, stomach, gut, or hepatic duct. 12. Hermetically closing the chest is irrational, unscientific, and dangerous. 13. Closing the chest wound by any means does not prevent the escape of blood from injured pulmonary vessels into the pleural cavity. 14. All wounds of the chest wall, whether penetrating or nonpenetrating, should be treated aseptically and with reference to drainage. 15. No instrument or needle should be made to enter the lung tissue for exploration, or the removal of fluid, unless the bony chest has previously been opened. 16. Foreign bodies in the bronchia or parenchyma of the lung may be detected with a fine exploratory needle through an open chest, with the lung contracted. 17. Foreign bodies in the lung and bronchia, when causing serious symptoms, should be removed. 18. Some small foreign bodies become encysted and remain harmless. 19. The position of a foreign body in the lung changes with expansion and contraction of the lung. 20. Hemorrhage, when due to pulmonary tuberculosis, should not be allowed to become fatal without opening the bony chest, and the application of pressure by forceps, gauze or otherwise. 21. Bleeding of the lung from any cause will, in many cases, cease when the lung is allowed to contract upon itself, with an open chest. 22. Blood clots within the pleural cavity should be removed at the time they are discovered, whether infected or not. 23. Blood clots in the pleural cavity may become organized with or without adhesions of the parietal and visceral pleura, or they may become infected and cause more serious consequences. 24. Hemoptysis may be absent in the most severe lacerations of the lung. 25. If bleeding from larger pulmonary vessels results, forceps should be applied; if not, gauze should be securely packed in the cavity. 26. Drainage of pulmonary cysts of any character can be effected with the same success as in any other organ. 27. Incision for drainage should be done with or without the presence of adhesions. If without adhesions, the opening in the chest should be at the lowest point of the pleural cavity for drainage by gravity. 28. Many incisions of the lung may and should be made with and without even local anesthesia. 29. It is probable but a few that will necessitate the use of general anesthesia. 30. Abscess of any character and of any location in the lung should be found and opened. 31. Gangrene of the lung demands most radical surgical measures, such as opening the chest, drainage, and the removal of all necrotic tissue. 32. Polyps of bronchia seldom necessitate removal, but they may cause conditions which may require surgical intervention. *Pneumorrhaphy*.—1. Silk, silkwormgut and animal tendons are the most desirable materials for lung surgery. 2. Absorbable sutures and ligatures, as a rule, are not to be relied upon as to strength and durability. 3. Silk and silkwormgut may become encysted in the lung and remain harmless. 4. The tug, and a combination of the tug and tobacco pouch sutures constitute the most desirable ones for use in the lung. 5. Ligatures and sutures may be dislodged by sudden expansion of the lung due to sudden closure of the opening in the chest wall. 6. The blood vessels, bronchia and lung tissue should be ligated separately, great care being used not to include too much tissue of any kind in one ligature. 7. Needles to be employed in lung tissue should be round, with a rounded point. They should never have a sharp point or sharp edges. 8. Not all ruptures, punctures or lacerations of the lung require sutures, or any surgical intervention whatever. 9. Many lacerations of the lung without fracture of the bony chest can and should be treated by suture, compression with gauze or forceps. 10. Puncture of the lung from any cause, such as stab and gunshot, resulting in hemorrhage, should be treated by opening the chest and applying ligature or compression. 11. Rupture of the lung should be treated as a laceration. *Pneumonectomy*.—1. A portion of all of one lobe, or the entire right or left lung, may be removed without causing death. 2. For complete or partial lacerated portions of the lung, when severe, pneumonectomy is necessary and should be done. 3. Gangrene of the lung requires in many cases the removal of all necrotic tissue. 4. Hernia of the lung, when sudden and of but few hours' duration, should, as a rule, be amputated, and the stump fixed in the chest wall, as there is no sac. 5. Hernia of the lung coming on gradually has a sac, and should be returned to the pleural cavity, if possible, without amputation. *Pneumonopexy*.—1. This is the safest and most rapid way of dealing with the stump of lung tissue in the majority of cases necessitating excision for any cause. 2. Adhesions of the parietal and visceral pleura have without exception taken place whether there have been lacerated or incised wounds, with or without suture. 3. The degree of adhesion corresponds with the degree of injury. 4. Cysts of the lung of any character can best be drained through visceroparietal adhesions. In the absence of adhesions the wall of the cyst may be sutured to the edges of the opening in the chest wall, drainage to be at once accomplished or at some subsequent time.

SECOND DAY.

The Pathology that Remains After the Nonsurgical Treatment of Peritonitis.—H. D. NILES (Salt Lake City, Utah) states that 95% of all the survivors of the nonsurgical treatment of peritonitis are left with infection without the peritoneal cavity and adhesions within the peritoneal cavity. The greatest amount of infection comes from a sudden rupture of an appendiceal or tubal abscess, or a perforation of the stomach,

an intestine, or the gallbladder. The most virulent infection is either appendiceal or from a pyosalpinx, following a puerperal endometritis; the mildest is from a cholangitis, or a gonorrhoeal salpingitis. He believes that about 40% of the possessors of infection and adhesions suffer from recurrent attacks of acute and subacute peritonitis, and less than 1% from mechanical obstruction of the bowels. It is to the remaining 50% that he invited particular attention, for while it has been customary to point to these cases as sufficient proof of the efficiency of the drug treatment of peritonitis, he believes that all fair-minded, thoughtful observers are learning to regard the pathology these patients carry within their abdomens as responsible for much distress and many deaths that were formerly attributed to other causes, or physicians were unable to trace to any well-defined cause.

Surgical Treatment of Tuberculous Peritonitis.—D. S. FAIRCHILD (Clinton, Ia.) stated these conclusions: 1. If an intraabdominal focus of tuberculosis is diagnosed or is suspected, an abdominal section should be made with the view of a more efficient treatment. 2. If a chronic tuberculosis of the peritoneum with ascites is diagnosed, or believed to exist, a laparotomy is indicated as soon as it is found that medical and hygienic treatment has failed. 3. In fibrous tuberculosis of the peritoneum the same course should be pursued, and if cheesy degeneration has not commenced, or progressed too far, a certain percentage of recoveries will follow. 4. In acute tuberculous peritonitis, with ascites and high temperature, laparotomy is useless. 5. In extensive adhesive tuberculosis, with matting of the intestines, laparotomy is useless, and an attempt to separate the adhesions is dangerous in its immediate results.

Injury to Nerves Following Fractures.—A. L. WRIGHT (Carroll, Iowa) reported a fracture of the humerus through the middle third, with injury to the musculo-spiral nerve, or rather the incorporation of this nerve between the ends of the bone, or to its being caught and pressed upon by the callus thrown out during the reparative process. The literature is replete with cases reported in which various nerves, especially the ulnar and median nerves, have been severed by a stab or the falling of glass. The case he presented had the typical clinical picture of injury to a nerve found at the end of a siege with a fractured bone, and taught a very valuable lesson regarding the prognosis and treatment.

Treatment of Nevi.—JOHN P. LORD (Omaha, Neb.) said the hot water treatment of cavernous angiomas, as suggested by Wyeth, is under trial, and will doubtless have a place in the treatment of selected cases. The treatment of port wine marks by electrolysis is too tedious and painful for large areas. The results are not perfect in that they are seldom complete, and leave some scarring. The x-ray promises better, and hot air would seem to have possibilities. Electrolysis occupies first place in hairy nevi, and will probably continue to do so unless the x-ray will produce permanent atrophy of the hair follicles. The operation of excision of very large tumors will probably never be supplanted by anything less radical, and hitherto inoperable tumors are rapidly yielding to the control of the operators of the new century.

Hypernephroma.—H. L. HARRIS (Chicago) said that it is only during the last few years that knowledge of tumors of the suprarenal capsule has made any material progress. Previous to this period, tumors were variously described as adenomas, sarcomas, carcinomas, mixed sarcoma and carcinoma, endotheliomas, etc. The essayist referred to the literature of this subject, and after reporting a very interesting and instructive case presented the following conclusions: 1. The hypernephromas are tumors of adrenal tissue, and therefore probably neither sarcomatous nor carcinomatous. 2. Such tumors may or may not form metastases. When they do, they are distinctly malignant. 3. When they are within the kidney capsule, or have perforated it by extension, the kidney should be removed. 4. When they originate in the adrenal tissue proper, they are usually separated from the kidney tissue by a connective tissue capsule, and however much the kidney may be flattened or fixed to the tumor, a line of cleavage may usually be found which will allow of the kidney being separated from the tumor and saved to the patient.

Two Cases of Acute Intestinal Obstruction Following Contusion of the Abdominal Walls.—J. E. SUMMERS, JR. (Omaha, Neb.). In the first case there was traumatic paresis of the lower part of the small intestine following kicks upon the abdomen. The patient was a man, 26 years of age, and of good physical development. The second case was one of retroperitoneal hemorrhage following a contusion of the abdomen, resulting in a hematoma, which compressed the descending and transverse portions of the duodenum from behind, so as to cause intestinal obstruction. The patient was a rugged young man, 20 years of age, and a farmer by occupation.

A New Method of Shortening the Round Ligaments Intraperitoneally for Retroversion of the Uterus.—HENRY T. BYFORD (Chicago). The operation consists in folding the ligaments anteriorly, according to Dudley, but in stitching the loop to the abdominal parietes about opposite or behind and a trifle above the internal inguinal ring. The ligament is grasped with hemostatic forceps and pulled out of the abdominal incision until it is drawn as far out of the inguinal ring as possible without doing violence to the tissues. Then a medium-sized catgut suture is passed through the center of the ligament about $\frac{1}{4}$ inch from the uterine end and the same suture is passed through the ligament about $\frac{1}{2}$ inch from the internal inguinal

ring. The suture is then drawn tight and tied like an ordinary ligature, except that it includes only half of the ligament in its grasp. The inner edges of the loop thus formed should now be touched with a chemical irritant, such as Monsell's solution or 1:5,000 mercuric chloride, in order to destroy the endothelium and secure firm adhesions. The irritant is then wiped off and the edges sewn together by fine catgut, which entirely closes in and covers up the irritated peritoneal surfaces. The end of this fold is then touched with the chemical irritant and stitched forward beside the bladder about opposite and a little above the level of the external inguinal ring. This, of course, will be only a peritoneal attachment and should be rather high, because the peritoneum is held in place here rather loosely. Thus there are practically two round ligaments on either side, one going from the uterus partly through the first catgut ligature to the attachment behind the external inguinal ring, and the other from the uterus to the ligature and from there to the internal inguinal ring, etc. The uterine $\frac{1}{2}$ or $\frac{3}{4}$ inch, or inch, according to the place where the ligament is transfixed, is common to both of the newly-formed round ligaments. When there is a tendency to uterine prolapse he sutures the whole side of the fold of the ligament to the peritoneum beside the bladder, or even sutures the portions of the round ligaments external to the folds of the parietal peritoneum in front. When there is decided prolapse he also stitches the infundibulo-pelvic ligament forward, the fundus uteri itself, and even takes folds in the sacrouterine ligaments. When there is cystocele he separates the remains of the urachus with a narrow strip of peritoneum, and after loosely twisting the flap thus obtained and drawing up the bladder attaches the flap into the abdominal wound.

Dermoid Cysts of the Intestinal Tract.—WILLIAM JERSON (Sioux City, Ia.) reported an interesting case. The cyst occupied the anterior internal wall of the colon about three-quarters of an inch above the ileocecal valve. It was covered by peritoneum, through which the cyst wall was plainly manifest. It was removed by making an elliptical incision through the serosa and dissecting out the growth. Recovery was uneventful. In explanation of the development of congenital cysts in the intestinal tract, the following theories have been advanced: 1. Imperfect obliteration of the omphalomesenteric duct. 2. Torsion of a portion of the intestinal wall by the products of a previous peritonitis, etc. 3. By sequestration or implantation of epiblastic or hypoblastic structure leading to the later development of an ontodermoid or ectodermoid. The points of interest which these cysts have for surgeons are: 1. That in a large percent of the cases the cysts, although innocent in themselves, ultimately lead to a fatal issue, either through obstruction of the intestinal lumen, or because of their contents becoming infected from the intestinal canal, terminating in peritonitis. 2. If their removal is undertaken before such complications have resulted, a favorable termination can be looked for.

Appendicitis: Operation and Indications.—A. C. BERNAYS (St. Louis, Mo.) laid stress on the fact that we can know nothing definite about the pathologic process which would warrant delay in operating. We cannot know enough before opening the abdomen to warrant us in following an expectant plan. He believes many lives are lost because the physician is lulled into hopeful security by an amelioration of symptoms. The amelioration cannot be depended upon to last; it may change without a moment's notice into a sad picture of collapse and sepsis, and the favorable time for operation be missed. In so-called intermediate cases a waiting policy is justified because the system is immunizing and fortifying itself against the toxins. An operation after the body has been immunized, which means that the pus has been made less virulent, is less dangerous. Dr. Bernays thinks that an operation is likely to be less dangerous on the seventh or eighth day than on the third or fourth, but pleads strenuously for operation on the first or second day of the attack, and claims that 98% of all cases operated on at that early period will be saved. Operations done the first day or second day of the attack are as safe as interval operations. Most brilliant and satisfactory results followed prompt operations in cases of severe appendiceal peritonitis.

Hyperplasia of the Uterus.—C. C. GEIGER (St. Joseph, Mo.) mentioned three distinct stages of hyperplasia, hyperemia, hypertrophy, and sclerosis. It is impossible to determine at the bedside exactly when the state of subinvolution commences to merge into that of hyperplasia, as it is a slow and insidious development. The two affections in clinical appearance resemble each other, and apart from the history, differentiation is difficult. Chronic hyperemia and hyperplasia may involve any portion of the uterus, neck or body, or certain portions thereof. For manifest reasons the neck of the uterus is the favorite focus of disease. The treatment of the various conditions of enlargement is so dependent on their causation that each individual case demands a separate investigation. The ideal way of approaching this subject lies in the direction of prevention, which in a great many cases the attending physician is able to do. But gynecologists must meet the disease already developed and devise methods which, if not curative, are palliative. Iodin and caustics in the hands of the essayist have not been of much service. He believes that caustics do more harm than good. In neurotic patients nothing is better than a change of climate and scenery. In some cases a change in the surroundings accomplishes much good. The patient should be given rest, the cause removed, the diseased organ depleted, and, if possible, the patient's general health improved.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

TREATMENT OF HEMOPTYSIS.

BY

H. A. HARE, M.D.,
of Philadelphia.

To the Editor of *American Medicine*:—I have read with interest the posthumous article of Dr. Fenn upon the treatment of hemoptysis in the issue of *American Medicine* of December 27, because of the importance of the subject and the fact that it was written by one who had personal experience in this dangerous complication of pulmonary tuberculosis. In the course of Dr. Fenn's article the statement is made that I recommend ergot in the treatment of this condition. Evidently the sentence which is quoted is an imperfect one, so I am unable to trace its origin; but as this statement is in direct antagonism to what I firmly believe I take the liberty of quoting the following paragraph from the article on ergot in my book on therapeutics and another from that upon hemoptysis in the same volume:

"In hemorrhages from the lungs and kidneys or other unapproachable parts ergot is thought by some to be very useful when given by the mouth, but it is improbable that it really achieves any real good. Particularly is this the case in pulmonary hemorrhage, since the vasomotor system practically does not exist in the pulmonary vessels, and the increased pressure caused by the ergot in the general systemic circulation may increase the pulmonary leakage. The truth is that in pulmonary hemorrhage very little real good can be obtained by internal medication, and again, the life of the patient depends in reality more upon the rapidity with which a clot naturally forms than upon the skill of the physician. Some physicians advise that the patient should swallow 1 to 1.5 drams of the fluid extract of ergot, but it is difficult to understand how it can be of service."

My object in writing this note is, therefore, not to call attention to an error in quotation in Dr. Fenn's article, but to emphasize the fact that when hemorrhage takes place from a bloodvessel of any size, ergot is not only powerless, but may do harm. In capillary and uterine hemorrhage the proposition is quite different, and here, of course, it is of great value.

AN IMPROVED ROUND-POINT NEEDLE FOR INTRA-ABDOMINAL USE.

BY

GEORGE ERETY SHOEMAKER, M.D.,

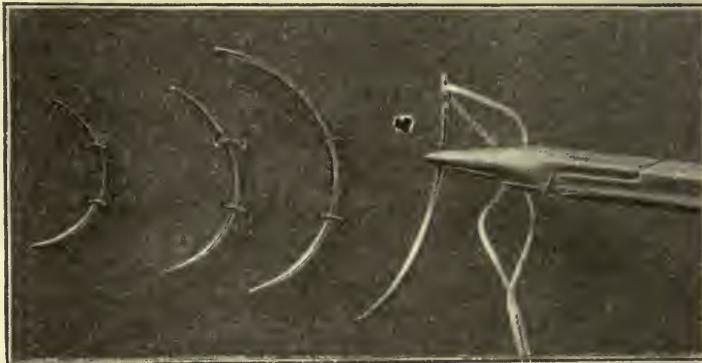
Gynecologist to the Presbyterian Hospital, Philadelphia.

The development of abdominal surgery, and especially conservative surgery, has brought out many occasions for sewing in soft and vascular tissue. The uterus, tube, broad ligament, bladder, ovary, meso-appendix and the mesentery, the kidney, liver, and stomach are frequently stitched nowadays, while there is no better way of checking troublesome bleeding anywhere in the depths of a wound than by a catgut stitch beneath the oozing point. Indeed it is the proper use of the catgut stitch which makes possible the dry closure of the abdomen without drainage in many cases of modern surgery. A needle which has a cutting edge is undesirable for this work. Its puncture may bleed. It often cuts too widely.

The full curved needle with round shank and without a cutting edge has been used somewhat for this work, but when grasped by the necessary needleholder it has proved unreliable and apt to shift or roll at a most critical time, especially when the sewing is done deep in a dark, narrow, blood obscured cavity. To make this grasp more secure the writer has had needles made with the half toward the eye flattened a little. This does not alter the character of the round puncture, as it does not make a cutting edge, but it does facilitate sure con-

trol. As the *straight* round-point needle can be best used without a holder the flattening is not required. When the part is readily accessible the ordinary ladies' straight sewing needle with an oval eye cannot be improved upon, especially for bowel sewing. No full curved needle, however, can be used without a holder, especially deep in a narrow cavity. Therefore the need for the improvement described.

A word as to a suitable holder for full curved needles. The essential feature is that the beak or jaw must be narrow, particularly for small-sized needles, otherwise so long a curved section is grasped that breakage of the needle is favored. The well-known Reiner needleholder, the jaws of which are here figured,



admirably suits this purpose. It may be used for the half-inch needle as well as for the largest sizes. If the round point needle is flattened where grasped the necessity for using a broad jawed holder in order to get holding power is eliminated. The making of needles appears to be an industry new to America. The J. Ellwood Lee Company appear to be the only manufacturers of surgical needles in the United States. They have listed four sizes of the improved needle described and illustrated.

INSUSCEPTIBILITY TO VACCINATION.

BY

S. SEILIKOVITCH, M.D.,
of Philadelphia, Pa.

To the Editor of *American Medicine*:—Last year a patient came to my office to have his child vaccinated, stating that she was unsuccessfully vaccinated six times by four different physicians, and that her teacher would not let her come to school. Had she been vaccinated by the same physician, I should have suspected either that the technic of the operation was at fault, or the virus was no good. I vaccinated her in the usual way, and, as it did not take, in 12 days I revaccinated her, again unsuccessfully. I gave a note to her teacher stating that the child was "immune," but she was still refused a seat in school. The child's father asked me to try once more. Being sure it would not take, I refused, but I advised him to bring the child in two weeks, tiring her out by fasting for five hours and a long walk before entering my office. I vaccinated her the ninth time, and at last I got the "split pearl on the rose leaf." Now, why did it not take the first eight times, or the seventh and eighth times, when the virus, operation, and precautions were the same as in the ninth time? I, myself, was vaccinated last year five times with different "brands" and none took. Why is it? I have seen a case in which a healthy child was with his brother, who had scarlet fever, in the same room for two days, playing and eating, and he did not catch the disease. The same healthy child a year later contracted scarlet fever, after being for a half-hour in the sick-room of his relative. Another child, suffering from diphtheria, spat a piece of membrane in his mother's mouth; she rinsed her mouth with plain water and did not suffer in the least; eight months later she contracted the disease from her other child, though all precautions were taken by her.

Adults do not contract chicken pox, measles, diphtheria, and scarlet fever so easily as children; we find in the nose, throat,

and mouth different pathogenic germs; to-day we are well, to-morrow we develop any special disease these special germs may produce. Do we not say we are "insusceptible" or less susceptible to measles or chicken pox? and, vice versa, that the pathologist says: the soil is not fertile for the growth of the given germ; well enough! but to-morrow, or some other time, for some reasons, the soil may change, and the pathogenic bacteria find it suitable for their development; so we see the same individual at some time may, at other time may not be susceptible to the same disease. Whether the explanation of "susceptibility" we base upon Metschnikoff's theory of phagocytosis, or germicidal action of the blood plasma, or other theories, matters very little. That worryment, an exhausted mental or physical state, etc., predisposes one to be more susceptible to diseases is also a fact. Now, why not in the same way think of "insusceptibility" to vaccination? I do not see any line of demarcation. In my case, the child was "insusceptible." By tiring her out I depressed her vitality, thus lessened the power of resistance to the vaccination and made her less insusceptible. How much less or how much more susceptible, I could not say before seeing the result of the *ninth* vaccination. If in a given case the vaccination does not take, say, the first three times, "*Vaccinate until it will*" is not good reasoning, as we do not know when that "*until*" may come, and so we may "*scrape*" the individual more than nine times with the same result. The question is, whether the one who is insusceptible to vaccination is also insusceptible to smallpox? It must be so, so long as vaccination is a protection against smallpox! And in the bank cashier's case (*American Medicine*, p. 957) "who tried four times and then trusted to the theory of insusceptibility . . ." and "died on the seventh day . . ." I do not see any proof, and any illustration to disapprove "insusceptibility to vaccination."

Taking for granted that the vaccine lymph was fresh and good, and the operation was performed *lege artis*, it is a question how soon after his fourth trial he contracted smallpox (we know on which day he died) and in what state of health was he at that time. We know that even natural immunity may be temporarily destroyed; take, for instance, the exhausted white rat and anthrax; we know that acquired immunity is not constant—immunization with diphtheria antitoxin will hold good not longer than four or five weeks.

REPORT OF THREE UNIQUE CASES OF APPEN- DICECTOMY.

BY

ANDREW B. GLONINGER, M.D.,
of Lebanon, Pa.

The following is the record of what is, perhaps, the youngest subject upon which the operation of appendicectomy has been performed:

CASE.—Congenital umbilical hernia in a male child. The child was delivered October 7, 1902, after a normal labor, by Dr. James Harris, of Jonestown, Pa. When about to ligate the cord he noticed what seemed to be an enlargement at the base, but on holding it up before the light a coil of intestine could be seen distinctly. I saw it in consultation 12 hours later. The tumor was increasing in size, the place was ten miles in the country, and there were no instruments at hand with which to operate, so a trial of gentle taxis was made, resulting in a partial reduction of the hernia. A compress and binder were applied to prevent its return. The next morning I went prepared to operate. The patient was then 41 hours old. The hernia had enlarged very much during the night in spite of the compress, and was dark in color with an offensive discharge from the stump of the cord. The prognosis was very grave. Strychnia sulfate .5 mg. (1/120 gr.) was administered hypodermically and the dose repeated during the operation. Fearing to injure the child if it struggled, it was decided to anesthetize it, using plain ether. The sac was opened the entire length. A considerable amount of dark fluid escaped. The intestines were spread out over the abdomen. The greater part of the small intestine, the cecum, the transverse colon were contained in the sac; all were highly congested and almost black in spots. The appendix, two centimeters in length, stood up straight and stiff and was also inflamed. The intestines were firmly adherent to the sac and were freed with difficulty; the hemorrhage was checked with hot salt solution. Upon enlargement of the ring instant

relief of strangulation was shown by the restoration of the normal color. The appendix, which had no meso-attachment, was excised, and the opening closed with a suture of fine catgut. The sac was cut away and the peritoneal cavity also closed with fine catgut. The umbilical vessels were ligated, but there was troublesome oozing from the surrounding tissue. This was controlled by adapting the skin surfaces with Thiery's clamps. The child reacted quickly, was given brandy grt. xv in 2 drams of hot water, which it swallowed readily. The next day the temperature rose to 102°, but was quickly reduced by the application of an ice poultice to the abdomen. The clamps were removed on the fourth day, the wound was entirely healed, and the child's health normal.

In contrast to the above, on the same day, by a curious coincidence, I operated on a man of 67, at the Good Samaritan Hospital, of Lebanon, Pa. I found a general adhesive peritonitis with an enormously enlarged appendix filled with fecal concretions. In this case also I used the Thiery clamps for an external suture, resulting in perfect union in one week.

On January 22, 1900, I was called in consultation by Dr. Chas. Strickler, of Lebanon, Pa., to a woman in the fifth month of pregnancy who presented all the symptoms of acute appendicitis with obstruction. She was removed at once to the Good Samaritan Hospital and prepared for immediate operation. Incision in the right iliac revealed local peritonitis, which had formed a mass of adhesions, from which the engorged appendix was released with difficulty and excised. Two inches above the ileocecal juncture the caliber of the gut was constricted by a strong band and an impaction of fecal matter at that point caused an entire obstruction. The adhesion was freed and the impaction relieved by manipulation, the bleeding points were ligated and the cavity irrigated with hot saline solution. The deep tissues were adapted by continuous sutures of fine catgut, the external with silk-worm-gut. The patient made an uneventful recovery and was discharged from the hospital in three weeks. Four months later she was safely delivered of a healthy female child.

SECONDARY HEMORRHAGE OF THE UMBILICUS.

BY

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of Richmond, Va.

President Church Hill Medical Association.

I desire to place on record the following case, as I have never in my experience in hospital and private practice had one like it, and I have officiated or assisted in upward of 1,000 obstetric engagements:

October 23, 1902, I delivered Mrs. P. of a healthy boy after a natural labor. The case progressed satisfactorily, the cord coming off October 29, 1902 (there was no oozing even from the cord after it was first tied), and the surface underneath was smooth and healthy. October 31, 1902, at 6 a.m. I was hurriedly summoned with the information that the infant was "bleeding to death." On arriving I found the baby just alive. The hemorrhage was controlled promptly with a compress of sterile gauze saturated with a solution of suprarenal extract; hot salt solution was given by rectum; brandy, etc., were tried with no effect, death occurring in a few minutes. The nurse informed me that she dressed the baby at 9 p.m. October 30 after an action; examined the umbilicus and there was no hemorrhage. The hemorrhage was not observed till I was summoned, the father discovering blood on the bed on arising to go to work. The baby literally bled to death from secondary hemorrhage of the umbilicus, due to detachment of a clot of blood over the seat of the artery. Its occurrence so late after birth is unique in my experience.

A TREATMENT OF TYPHOID FEVER BASED UPON THE SUPPLY AND DEMAND OF THE ANIMAL ECONOMY.

BY

CHARLES FRANCIS, M.D.,
of Brooklyn, N. Y.

The demand of the animal economy in typhoid fever is based on the diminution of taurin and glycozin with their producers. The chemicals that produce taurin are sulfonic acid, alcohol and ammonia turning into amidoethylsulfonic acid. To produce taurin in the economy, mix sulfur and potassium nitrate equal parts in a capsule, this, in contact with alcohol and ammonia, produces taurin. In this disease there is a sufficiency of ethyl alcohol and ammonia in the body, therefore it is not necessary to add them. Glycozin is produced by acetic acid, chlorin and ammonia. The chemicals most dimin-

ished in proportion that produce glycozin are chlorin and acetic acid, when ammonia is present in sufficient quantity, to produce glycozin, acetic acid dilute and chlorin water (separately). The production of these chemicals, or proximate principles, is in accordance with the law of abhorrence of rest. Nature is ever willing to work, or help herself, if the proper conditions surround her. The compounds taurin and glycozin should be added to the economy on the law of demand. All chemicals and compounds beget their kind by preventing the production of the opposing ones. Hence, if a chemical, etc., is overproduced the system is out of equipoise; when this equipoise is displaced, chemical changes arise that we call disease; his equipoise sets up conditions necessary for living organisms; or else produces chemical changes again in the organism. I presume some will question, How does this overproduction and underproduction take place? By ingesta, environment and also animal activity. In using the proximate principles or producing them in the animal organism, give or produce them at short intervals. The best method of using producers of glycozin and taurin is:

Potassium nitrate, .3 gram (grs. v) } chlorine water,
Sulfur, .3 gram (grs. v) } 2 to 4 cc. (5½ to 51)
To make one capsule.

Dilute acetic acid.....15 cc. (3½)
Capsules first two hours; chlorine water the next two hours. Dilute acetic acid in between.

Also I use vinegar and water baths. This treatment I use for 72 hours and as a general rule convalescence is produced. On this line of philosophy I have practised medicine for some years, believing a physician is an assistant to nature in overcoming disease. What better assistance can be given than what nature most craves?

THE GAUZE TAMPON IN POSTPARTUM HEMORRHAGE.

BY

R. E. SKEEL, M.D.,
of Cleveland, Ohio.

An article appearing in *American Medicine* of August 2, 1902, by Dr. J. F. Baldwin, in which the question is raised as to the value of the gauze tampon in postpartum hemorrhage, invites reply. Many of the criticisms therein contained are unquestionably true, and after some experience, both in the use of this and other means of controlling hemorrhage after delivery, the following statements are felt to be at least approximately correct: Postpartum hemorrhage, as is well known, may arise from two sources: First, a deeply lacerated cervix, and second, failure upon the part of the uterus to contract and thus close the vessels emptying into the placental site.

In the absence of proper facilities and surroundings for suture of the cervix a firm vaginal gauze packing unquestionably exerts enough pressure, and sufficiently contributes to the formation of clot by removal of serum to enable one to control completely hemorrhage due to deep cervical laceration. Bleeding from this source is far more common than is generally recognized. I think I am perfectly safe in asserting that intrauterine gauze tamponade alone and unassisted by other measures never could control the worst form of postpartum hemorrhage from a large flabby uterus whose power of contraction appears to be entirely in abeyance. Neither can it be applied with sufficient rapidity and thoroughness, under these circumstances, to be of any avail; but there is a class of cases in which, after the primary hemorrhage is controlled and the uterus has been made to contract, relaxation and renewed bleeding take place so soon as the method of stimulation of the uterus, whatever it may be, is discontinued. In just these cases there is no furious haste, and sufficient time can be taken to proceed methodically and aseptically to pack the uterus, and it does not need many square yards of gauze to accomplish the end desired. In other words, one method of stimulation, whether it be hot water, pressure of the hands, or friction over

the fundus, which cannot be continued indefinitely, is substituted by another one, gauze packing, which can be continued for an indefinite length of time without special discomfort to the patient or undue tax upon the physical powers of the attendant.

I think that no one would seriously insist that this method is one of checking hemorrhage by pressure, but rather a strictly physiologic one of stimulating the uterus by the pressure of a foreign body in its cavity. Gauze packing in the pelvic cavity checks bleeding in another manner also, that is, by keeping that cavity dry, and it probably acts in the same manner in the uterus, draining out the serum and retaining the fibrinous portion of the blood to clot and assist nature in thus occluding the mouths of the uterine vessels. This method of controlling bleeding is not such a contradiction to the old and well-tried dictum to remove all clots and fragments from the uterus, as it might seem. The criticism is sometimes made that we simply substitute one foreign body for another equally as bad. Blood clot in the uterus does not cause severe hemorrhage and when such clot is removed the good that is done is not so much by the removal of the clot as by the irritation of the agent removing it. Another factor still more important is that severe hemorrhage is frequently caused by the retention of a portion of placenta, acting not as a foreign body, but sufficiently adherent to the uterine wall to prevent retraction of the contiguous denuded placental site and when the blood clot is removed the placental debris comes with it. A loose piece of placenta or blood clot does not cause free bleeding unless large enough to prevent symmetric contraction of the uterus. It rather causes uterine contraction, as witnessed by the severe after-pains under these circumstances as well as the relief obtained after removal. Accidental hemorrhage without rupture of the membranes is in no way a parallel case, as the question here is entirely one of intravascular versus intrauterine tension. No uterus after labor is as large as a full-term uterus, and there is always some diminution in the caliber of the vessels after delivery even with the most severe bleeding.

I do not entirely agree with Dr. Baldwin that operative obstetrics is a part of the practice of surgery but insist rather that obstetrics as a whole is a surgical specialty and should be taught as such. Making operative obstetrics a part of general surgery leads to the performance of hysterectomy and ablation of the tubes and ovaries following cesarean section for minor degrees of contracted pelvis when other measures could as well be utilized for sterilization if necessary, without depriving the patient of healthy organs necessary for her physical and mental welfare. It is general surgery also which ignores the fact that induction of premature labor, in the future will render such mutilation unnecessary in any but marked forms of contraction. The great mass of obstetric practice is in the hands of the family physician and when he recognizes the fact that operative interference is necessary an operator is apt to be summoned who has the greatest number of amputated legs to his credit and thus the patient finds herself upon both horns of the dilemma which presents itself, a regular attendant without specialized surgical knowledge and a surgeon without specialized obstetric knowledge. Teaching obstetrics as a surgical specialty would obviate this difficulty and the practitioner who found himself unable to deliver by the ordinary method would then know not only what should be done but how it should be done, even if he is unable to do it himself.

The greatest good done by this teaching would be in the thorough inculcating of a knowledge of the principles underlying the practice of surgical asepsis and a consequent banishment from the lying-in room of the lard dish, vaselin jar and douche bag and their replacement by the hand brush, rubber gloves and sterile dressing material.

"Medical Library and Historical Journal."—The first number of this new publication, "Devoted to the Interests of Medical Libraries, Bibliography, History, and Biography," will appear on January 15. It will be the only magazine published in the English language devoted to the subject of medical history. A bibliographic feature will be the publication of a complete index medicus of every current medical book, both English and foreign. The journal will be published quarterly.

ORIGINAL ARTICLES

THE TREATMENT OF EPILEPSY BY THE GENERAL PRACTITIONER.¹

BY

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of Sonyea, N. Y.

Medical Superintendent of the Craig Colony for Epileptics; Secretary of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics; Member of the American Medical Association, New York Academy of Medicine, New York County Medical Society, American Medico-Psychological Association, Rochester Pathological Society, Buffalo Academy of Medicine, etc.

EPILEPSY CURABLE IN MANY CASES.

I have no hesitancy in declaring that epilepsy is curable in many cases if taken in time and an accurate course of treatment laid down in the most minute detail and faithfully observed a sufficient length of time in every case; nor can it be denied that the privilege and duty of treating the disease when most can be done for it in a medical way belongs oftener to the general practitioner than to any other class of physicians.

First of all, we ought to remember that recent convulsions in themselves do not necessarily imply the presence of epilepsy. Nor do we think it best to speak of such convulsions at first as epileptic, but rather as epileptiform, telling the patient that he may not yet have the genuine disease. At the same time, we ought to remember that all convulsions, no matter how simple or what their cause, are to be seriously regarded, and that treatment once begun should in no case be discontinued under two or three years.

Habit epilepsy is universally recognized; that is, a convulsion having once occurred may, under the most trivial provocation, recur time and again until the final establishment of the true disease.

THE TWO PRIMARY CAUSES: HEREDITY AND STRESS.

The only true philosophy in the treatment of any disease lies in trying to recognize and remove the cause, and if we cannot find out the first time we examine an epileptic patient the cause of his trouble, we ought to keep repeating the examination until we do, for we may rest assured there is one.

The primary causes of epilepsy are just two, heredity and stress, and we broadly characterize the manner of their action by saying that heredity always acts first from the brain; stress, toward the brain, being in one primarily central, in the other primarily peripheral.

Heredity is of two kinds, similar and dissimilar; the former meaning that the potentialities of epilepsy descended from parent to child; the latter that alcoholism, insanity, tuberculosis, chorea, and diseases of a like character were changed in type in transmission from parent to child so as to appear as epilepsy in the latter.

Similar heredity is the cause of the disease in about 16% of all cases, while dissimilar heredity causes it in about 40% of the rest, making a total of 56% due to heredity.

For ease of illustration we divide the second great cause, "stress," into two forms, initial and mechanical, placing under the former all cases in which the cause originated within the individual as the result of some act on the part of that individual, such as taking a chemically poisonous drink, drinking too much alcohol, producing an intestinal ptomain from improper food, the acquisition of syphilis, etc.; the second, or mechanical, acts of violence suffered beyond the control of the individual, such as hemorrhage or tumor within the brain, thrombosis or embolism, or a blow that injures the skull in a manner to interfere with the functions of the brain.

Now let us note for a moment the amount of influ-

¹ Read before the Keuka Lake Medical and Surgical Association, Keuka Lake, N. Y., August 20, 1902.

ence that has to be exerted by each to produce epilepsy in a given case, and take for the purpose a girl or boy who is passing through the disturbing epoch of puberty and whose parents had epilepsy, and let us say that the acquiring point—the point at which the patient acquires disease—is represented by 75, 50% of which is already present under heredity, it is easy enough to see that 25% of added strain or "stress" will bring to light the disease to which the system is already attuned—already ripe for, because its elements were in the child at its birth.

Or, on the other hand, suppose we take a child of 6 or 7 years, of good heredity and vigorous health, and whose resisting power is 100; it would require the full stress of the poison of one of the specific fevers, like measles or scarlet fever, to bring on the disease, all of the cause in this case being under stress, heredity having nothing to do with it. But if the parent of that child had been alcoholic, or insane, or infirm from some other neurotic disease, less would be required of stress, because heredity had already done its work in lessening the child's powers of resistance.

So plain, indeed, is the action of the principle here involved that we may formulate a law of origin—not an absolutely accurate one, to be sure, but one that will do for a working basis—something like this:

Epilepsy being always due to two primary causes, heredity and stress, its immediate development will depend either on the action of great stress in cases of little or no heredity, or on little stress in cases of great heredity.

IMPORTANCE OF HEREDITY.

So firm, indeed, has become my conviction concerning the part played by heredity in epilepsy that I deem it of the utmost importance to look carefully for it in some form in every case that arises, knowing that if it can be excluded the chances of cure are infinitely greater, and that if it is present the knowledge will greatly aid in treatment, and in giving a prognosis when one is required.

The first thing, therefore, I would urge is that a systematic attempt be made in every case to find out two things:

1. What is the cause of the disease in this case? Is it heredity in greater part, or stress in greater part?

2. If it is stress in greater part, what is the stress, what its form of action, and how soon can it be removed? If it is heredity in greater part, what is its form? And so far as I am aware at this time, the best way to get this information is through the use of some questions covering the patient's family history, his personal history, and the history of his disease, combined with thorough personal examination of the case.

The questions in the blank we use at the Colony are so formulated that specific information is obtained on points that the patient or his friends under direct questioning might evade or deny; and we believe the use of some such form by physicians generally would be useful both for treatment and for the preservation of valuable scientific data.

THE COMMONER FORMS OF STRESS.

To enumerate in detail the causes under stress in such a paper as this is out of the question, for they range from emotional shock to the grossest animal indulgences; but I think we are prone oftentimes to overlook the little thing actually causing the disease for the big thing we feel ought to cause it.

A man once came under my care in a State hospital who had marked delusions of persecution: he heard people talking about him all the time, threatening to kill him, and to burn his house. On testing his hearing it was found defective on one side, and when the ear was washed out with a warm soap solution several pieces of hard, dried tobacco as large as a grain of corn came away, with the result that the voices ceased in 24 hours, and some months later, when the man was discharged, had not returned. Here was the strongest possible demonstration of the

connection between a very simple material cause and a far-reaching, disastrous effect.

A woman of 37 entered the Colony with a history of epilepsy since about the time of puberty. Her ancestry was good and the disease had not affected the mind. A careful examination showed the uterus to be impervious, the menstrual flow appearing vicariously, mostly in the groin. The uterus and ovaries were removed without incident, with the result that for 2½ years now she has not had a seizure, and I believe she is permanently cured.

A man of 28, who had been an epileptic of the very worst type for 18 years, was admitted to the Colony in February, 1896, having twice been committed to hospitals as insane and twice discharged as hopeless—incurable.

During the 18 years his attacks averaged 110 to 125 a month. He had been dosed with the bromids so long and liberally that he was suffering from what might be termed bromid dementia. He was listless, inert, and without ambition; feeble, emaciated, quarrelsome, and fault-finding in disposition, and had numerous unstable delusions. He also had a slight limp, due, we found out, to a partial exhaustion paralysis, and not organic. After repeated examinations we could not find he had any organic disease of any kind, and based his treatment on the belief that he was having convulsions because he was systematically poisoning a naturally weak system, further vitiated by long neglect and unhygienic habits, with improper food. There was an utter absence of the nutritive rhythm.

He was put under vigorous treatment against his will, and at once began to improve, his progress soon exciting his interest. During the first month he had 110 attacks; the second, 98; the third, three, and during the two remaining years he lived at the Colony did not have another convulsion.

He left the Colony 4½ years ago, cured, and has remained entirely well ever since, and is now supporting himself and his mother as a printer, a trade he learned at the Colony while he was under treatment. It is only fair to add, however, that he still lives the abstemious life he learned at the Colony, and which he is compelled to live in order to keep well. Should he ever go back to the old manner of living he would almost surely be an epileptic again.

A strong, vigorous, professional man of middle age consulted me five years ago for what he termed "fainting spells," that came on only in the morning after he had indulged too liberally in good things to eat and drink late the night before. I warned him to let alcohol alone, telling him that so often as he applied the match the powder of badly balanced nervous energy would explode; but he kept right along dissipating and suffering the same way after each spree, until he had two or three attacks in one day in a place that embarrassed him exceedingly. Then he quit his bad habits, submitted to proper treatment, and for three years now has been perfectly well.

There are today a number of adult male epileptics at the Colony who have no convulsions simply because they can get no alcohol.

When a man of middle age, who seems robust and well-to-do and to enjoy life generally, comes to you for "fainting spells" he never had before, you may set these spells down in 75 cases out of a 100 as being due either to alcohol or syphilis, or both, and you will find that proper treatment will bear out the assumption as to cause every time. Further than this, if you can get the faithful cooperation of the patient in carrying out treatment, you can look for the most flattering results.

These are fair illustrations of the commoner forms of stress acting at the middle age period of life, and about 20% of all cases belong to that period; for 80% or more of them all begin long before middle age. Such accidental forms of stress as lead poisoning, injuries to the skull, etc., need only be mentioned, and the same is true of the changes in the blood and central systems that come late in life and cause the rather infrequent forms of old age epilepsy.

THE MORE ACTIVE CAUSES IN EARLY LIFE.

Now, let us look for a moment at the causes most active under 20, and we have just noted that 80% or more of them come before that period.

It is in this class of cases that heredity shows its hold; for, as a rule, inherited cases come to light early, and it is safe to say that 80 of the 100 persons under 20 who have epilepsy have it more from the results of heredity than from any form of stress. But this still leaves 20 out of every 100 under 20 years of age in whom it is due to other causes, and the causes here are the same to some extent as later in life, including disturbances in the nutritive system, accidents to the brain, the specific fevers that belong to this period of life, and cerebral

palsies, which latter alone is active in about 10% of all cases.

If you want to do much of value for the epileptic whose disease is largely the expression of some inherited taint, you must begin with him literally at the hour of his birth; and I venture to say that when the time comes for us to sum up the exciting causes of epilepsy in a fairly conclusive way we will find that accidents at birth play a part far in excess of the importance we attach to them now.

So firmly does Dr. Abram Jacobi feel that asphyxia of the newborn sometimes causes epilepsy that he aptly advises that in postpartum hemorrhage, where the child at the same time is threatened with asphyxia, that the doctor "sit on the woman's abdomen, if necessary, to check the bleeding while he uses both hands in resuscitating the child."

Some day, too, when surgery has gone a step further in its marvelous advance, the general practitioner will call on the surgeon to remove bloodclots from the brains of young children that occur with such distressing frequency, and that now go unrelieved only to cause painful bodily deformities, epilepsy, and other affections of the mind that generally last through life.

In 1,070 cases admitted to the Craig Colony, 117 had epilepsy as the result of a brain palsy, and while none of them have been entirely cured, many have been vastly improved.

The thing to do, it seems to me, and as I hope we some day shall, will be to remove bodily the clot from the brain before that organ becomes permanently impaired, and it would seem to us that the initiative in this matter will have to come from the attending physician—the general practitioner—he being the supreme family medical adviser in the case at the time. And while speaking of the child's liability to epilepsy at this early period, do not forget that of the mother, for puerperal infection, phlebitis, and other causes produce the disease in the latter, and the general practitioner may in such cases prevent as well as cure.

PRINCIPLES OF TREATMENT.

Because of the time limit on this paper I cannot possibly specify all the things of value in the treatment of epilepsy, but will try to state what seems to me to be the true principles that should govern our efforts at cure in every case, summarizing them briefly as follows:

1. We should consider every patient that comes under our care a particular case in its own right, and institute a searching examination along the lines above specified, that we might bring to light the especial cause in each case; then set out to treat the patient and his disease as a unit, as one and the same thing, never dissociating or separating the one from the other; never, for instance, giving the bromids simply for the fits and doing nothing for the individual, whose moral and physical stamina is so frequently impaired and even destroyed by the remedy itself, and which, after all, in my opinion, only smothers or suppresses the attacks for the time being, never effecting a cure unaided.

2. Before writing a prescription for medicines of any kind, write out a dietary for each case and make the patient stick to it absolutely, if possible. It won't pay to give general directions in this matter. The patient must clearly understand what he is to eat at each meal, and he ought to have a printed card as a general guide, with stated things for breakfast, dinner, and supper, the principle of epileptic dietaries being the use of bread-stuffs, eggs, milk, butter, fruits and vegetables, to the entire exclusion of rich, highly-seasoned things, pork, veal, pastry of all kinds, and all drinks that have an alcoholic basis. The diet card we use also has a place for keeping a record of all seizures, specifying each kind on the date it occurred.

3. For more than 50 years the bromid salts have been more largely used in epilepsy than any other single

remedy, but in all earnestness I again give it as my firm belief that this drug unaided never yet cured a case of genuine epilepsy.

That the bromids have a place of value in brain therapy I do not deny, especially when rationally administered, and given in this way they may even do a great deal of good. I think the practice of giving epileptics doses of 30 to 40 grains of potassium bromid three times a day in a routine way altogether wrong, and especially so when we fail to make any effort to counteract the poisonous effects of the drug on the system generally, being chiefly interested in the temporary suppression of the convulsions.

Illogically used, the bromid salts impair and may even destroy the mind, cover the body with unsightly sores, destroy the functions of the digestive apparatus, the one function in epileptics above all others that should be kept in proper condition, and produce general disorders that recent methods of administration have taught us how to avoid.

If we want to use bromids it is best to employ either the hypochlorization method, that is, to withdraw all salt from the patient's food, salting it with any one of the bromids, preferably sodium bromid, or use bromipin, which is a 10% solution of pure bromin in the oil of sésamum, the former method being much the less expensive of the two, the cost of the latter being considerable.

Bromipin does not produce acne; does not impair the digestive or assimilative functions in any way; does not suppress or pervert any of the faculties or functions of the mind or body, and with it all is a very good reconstructive in feeble and run down cases if given in the form of an emulsion. In rare cases it may be worth while to try some of the coal-tar derivatives in conjunction with the bromids, but generally they will prove a disappointment.

I recall several cases in which *solanum carolinense* (horse-nettle berries) worked remarkably well after about everything else known had failed.

The Fleischzig treatment that seemed at first to promise much has had its day, and never in our opinion had much value, because it was based on the belief that epilepsy could be cured in a few months' time.

Besides the drugs and the employment of other measures that seem especially to suppress convulsive phenomena there are a host of others that act beneficially in correcting conditions that may underlie the disease, and which ought to be used under these principles:

If the heart is weak or diseased, treat that particular organ.

If the kidneys are faulty in action, try and make them right.

If the eyes under careful examination of a good oculist show refractive or other errors they should be effectually and permanently corrected, but not through surgical intervention.

The use of proper glasses should be educational to the eye and to those parts of the brain that periodically discharge or explode under slight abnormal stimuli.

If there are foreign growths in the nose, remove them.

If the patient has a phimosis or a stricture of the urethra, correct it.

If the stomach and intestinal tract are in disorder, take prolonged and especial pains to correct both, for along this tract, beginning with the stomach and ending with the rectum, lies the cause through bacterial and ptomain poisoning of many cases of epilepsy.

Intestinal lavage and the free use of internal antiseptics will do wonders in selected cases, but even in these it is best to begin with the proper diet and so avoid the need for such treatment later on.

Finally, combat with appropriate treatment every ailment that can be discovered, keeping the patient mentally and physically employed all the while and

not permitting him to get the idea that he is an invalid and cannot do like other folks, and in two or three years you will be gratified with the results in the majority of cases you treat.

REPORT OF TWO CASES OF TRANSVERSE POSITION OF THE FETUS WITH PROLAPSE OF AN ARM AND IMPACTION.¹

BY

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Both cases occurred in the out-patient service of the Jefferson Maternity Hospital.

CASE I.—E. C., colored, a primipara, aged 20, was first seen December 20, 1900. The patient had been in active labor for from 6 to 8 hours. Labor pains were strong and frequent. Palpation and vaginal examination showed the fetal position to be transverse, with the head in the left iliac fossa, the back anterior, the membranes ruptured, and the right arm prolapsed. The child was dead, very probably as a result of the great birth pressure to which it was being subjected. There was no personal or family history of interest. The patient's health had been remarkably good. I can assign no plausible cause for the fetal malposition except the disproportion between the child and the pelvis. The former was large, and the latter contracted and somewhat deformed. Pelvimetry, taken some time after delivery, gave the following pelvic measurements: A. S., 26 cm.; crests, 25.5 cm.; troch., 30.5 cm.; L. O., 20.5 cm.; R. O., 20 cm.; E. C., 18.5 cm. It will be noted that the pelvic diameters are all two or more centimeters less than normal, but that the conjugate and crestal measurements are disproportionately lessened, the latter being shorter than that between the iliac spines, — a typical rachitic flat pelvis. I could, however, get no history or other evidence of rickets.

Dr. B. F. Royer gave chloroform as an anesthetic, and Dr. Coles assisted me in the delivery. The bladder was emptied, the hair clipped from the external genitals, and the parts surgically cleansed with soap and water, plain water, and mercuric chlorid solution, 1 to 2,000, and the vagina was douched with 1% lysol solution. It was thought advisable to excise the prolapsed arm, thus reducing the size of the fetus, and avoiding the introduction of the infected part into the uterus. Guarding the maternal tissues with the left hand, with the right using heavy-bladed, blunt-pointed scissors, I amputated the arm at the shoulder. Then manipulating with the left hand internally and the other externally, it was comparatively easy, by slightly pushing up the body of the fetus, to pass the left hand and arm over its ventral surface, to grasp the lower foot and to bring it down. By gentle traction internally and careful manipulation externally, the fetal back was made to rotate upward along the anterior uterine wall, the head was pushed in the direction of the fundus, and the breech made to engage so as to bring the leg which had been grasped anterior in the pelvis. By traction on the leg downward and backward, delivery of the body was easily accomplished, and the remaining arm, extended over the head, was readily reached and delivered. The delivery of the after-coming head gave but little difficulty. The latter was done by Wigand-Martin's method, namely: the maintenance of flexion of the head with a finger in the mouth, and by suprapubic pressure upon the head, the body of the child being brought, at the moment of extraction of the head, well over the mother's abdomen. To guard against possible infection and relaxation of the uterus and hemorrhage, the organ was douched with 1% lysol solution and packed with iodoform gauze. Lacerations of the pelvic floor, which were slight, were repaired. Recovery of the patient was prompt and complete. I recently delivered this patient of a 6 months' macerated fetus.

CASE II.—M. B., aged 30, was also colored, but evidence existed of a large proportion of Caucasian blood. The pregnancy was her fifth; two children were living and healthy. Patient's mother had died of cancer. She gave a history of having commonly had good health, although she appeared anemic, and naturally of poor, weak, muscular and nervous development, and when seen at the dispensary, a month or more before delivery, she was poorly nourished and had a troublesome nausea, with some evidence of mild toxemia. Calomel, gr. ̄, with sodium bicarbonate and Basham's mixture, 2 drams, were prescribed, each three times daily. As is the custom at the dispensary, a thorough examination of the patient, including pelvimetry, was made. The measurements were as follows: A. S., 23 cm.; C., 26.5 cm.; troch., 30 cm.; R. O., 20 cm.; L. O., 19.5 cm.; E. C., 17.5 cm.; circumference, 83 cm.; a just-minor pelvis, it will be noted. The condition of transverse position of the fetus, the back toward the ventral surface of the mother, head in the left iliac fossa, existed. The small pelvis

¹ Read before the Philadelphia Obstetrical Society, May 1, 1902.

may have been an etiologic factor in this condition, but I think the relaxed, flabby character of uterine and abdominal muscles were chiefly accountable. From the history and examination, the pregnancy was thought to be of about eight months' advancement, which was confirmed by delivery little over a month later. A few days after first seeing the patient I took with me, as is our plan, two undergraduates to visit the patient, and we examined her together. At this time external version was carefully tried, but without success, the patient being nervous. We left her with the oft-repeated injunction that we should be informed at the first signs of labor, thinking that perhaps, in the beginning of labor, external version could be performed; or if not that the attendants could be in readiness to use at any time whatever procedure was demanded for the sake of mother or child.

The first word received was early in the morning of June 13, 1901, when the husband of the patient came, saying that his wife had been in labor all night and that an arm was "sticking out." The patient was found much exhausted from long, ineffectual efforts at fetal expulsion, and from loss of considerable blood. The same condition of the fetus existed as in the first case. The state of the patient was evidently a serious one; the friends were so informed, and the suggestion made that the patient should be treated in a hospital; but her friends objected, wishing her to be treated at home. Through deference to their wishes and because the Jefferson Maternity was about to close for a period, I reluctantly consented (the surroundings being the worst) to treat the patient where she was. The friends were told that a careful attempt would be made "to turn" the child, with the understanding that if this did not readily succeed the patient was to be taken to a hospital. Assisted only by an undergraduate of medicine and an ignorant old negress, after giving some hypodermic stimulation, a small quantity of chloroform was administered, and, by the foregoing method (except that the prolapsed arm was not amputated), I readily and with comparative ease performed podalic version and extraction of the dead fetus. The uterus was douched and packed. Though the whole procedure was short, perhaps not over 20 to 30 minutes, yet before completion, the pulse became accelerated and weak, showing shock. The patient regained consciousness and there was some slight reaction from the shock; but in spite of active treatment with many of the familiar measures, she died in an hour and a half or two hours after delivery. Necropsy failed to reveal any lesion or cause of death, except that there was a general anemia, and flabbiness and friability of tissue, indicating little power of resistance. The cause of death was evidently exhaustion from prolonged labor, with shock necessarily attending anesthesia and delivery.

Conclusions cannot be drawn from two cases only, but every case suggests thoughts which should be weighed, and from which even inferences may be deduced. The trite fact that conditions of transverse position should have vigilant care is emphasized in these two cases. If they had been seen early in labor, the chance of saving both children would have been good, and the life of the mother, in the latter case, would not, in all probability, have been sacrificed. Possibly more persistent effort should have been made when external version was attempted. But had not the trifling, unreliable nature often manifest in the negro race and the presence of an ignorant old midwife caused the friends of the patient to neglect summoning proper assistance at the first signs of labor, the result would likely have been different. Innumerable babies and mothers will rise up in judgment against midwives; but meanwhile faulty legislation and careless and indifferent officials allow the slaughter to go on. The marked difference in the muscular and nervous fiber of the two mothers, and especially the fact that the former was not exhausted, while the latter was profoundly so, are the plausible reasons for the opposite results. The fatal ending may serve as a warning against major operations in exhaustion unless they are done with plenty of assistants, fair surroundings, and with all the essentials at hand for most active combat against shock.

As to the frequency of the occurrence of transverse position, it has been estimated at 1 in 150 to 1 in 300 of all cases of labor. Galabin, in reporting the statistics of 22,900 cases of labor occurring in Guy's Lying-in Hospital, gives the percentage of this condition as .32. As to the causes of this malposition, contraction of the pelvis and relaxation of the abdominal and uterine walls are the most common. The former of these etiologic factors was present in the first case reported, and both were present in the second case. Any abnormality of fetus or pelvis, in structure, size, or proportion, may

be a predisposing cause. The diagnosis is made by the usual methods of physical examination in pregnancy, and often may be done without difficulty. A physician owes it to himself, to his profession, and especially to his patient, to make it a routine measure to know her pelvic measurements and the position and presentation of the fetus in the latter months of pregnancy. It is only by such painstaking care that the fatal complications of obstetrics, such as result in neglected cases of transverse position, may be minimized. In the studies of Churchill, he found that in 235 transverse presentations, one-half of the children were lost. The only proper method of treatment recognized is some form of version; but the child, if dead, may, of course, properly be delivered by embryotomy. Brothers states that out of 125 cases delivered by spontaneous evolution, 111 children were born dead. While I have not been able to find any specific information as to the maternal mortality, yet in neglected cases it must be considerable; whereas, if the condition be diagnosed early, and intelligent assistance be rendered at the proper time, the prognosis for the child is a fair one and for the mother good.

GASTROSIA FUNGOSA.*

BY

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Organacidia gastrica is a disease—not a symptom—due to the presence within the stomach of relatively large quantities of organic acids, which may have been introduced as such into the stomach or may have formed there. It is a disease *sui generis*, having a definite and distinct cause which elicits definite, distinct, and invariable symptoms. Of course, the symptoms vary with the degree of the cause. The greater the irritation, and the greater the quantity of the injurious agent, the stronger, the more pronounced, and the more violent are the symptoms. Slight indistinct soreness and severe spasms and, possibly, tetanus, are the extremes between which are painful sensations corresponding to the degree of irritation. Organacidia gastrica permits of subdivision into three distinct classes: (1) Organacidia gastrica simplex, a pathologicochemic condition of the stomach in which the organic acids have been introduced in fruits, salads, etc.; (2) gastrosia fungosa, in which the organic acids are due to mold vegetation in the stomach; and (3) zymosia gastrica, in which the organic acids are due to the presence in the stomach of growing, sporulating, budding yeast.

The occurrence of mold in the stomach must now be admitted an established fact, since many have seen it, although it has been looked upon rather generally as being a curiosity merely. I believe Einhorn was the first who thought its presence in the stomach of pathologic significance. My own investigation of mold dates back to the latter part of last year, independently and in absolute ignorance of Einhorn's article. Other interesting communications bearing on this subject are those of Kühne¹ and of Pettersson.² Kühne has observed the spinach-green vomit and finds that the green color is not due to bile, an assertion I had previously made.³ But he is not yet sure whether that green color is due to algæ or something else. Pettersson describes mold in the stomach.

Mold is introduced into the stomach chiefly through the mediums of food and drink, although the nose and the open mouth might readily prove available channels. As a rule moldy foodstuffs are rejected. But, unfortunately, in a few cases, as in certain varieties of cheese, food is prized because of the piquancy which they owe to the mold. All foodstuffs are apt to have mold in

* Supplementary to my monograph on organacidia gastrica, published in the New York Medical Record, September 6, 1902.

spore form and in microscopic quantities. That mold grows in the stomach is proved by the fact that it is aspirated in occasionally very large patches and clusters. As the patient takes the mold unawares, unconsciously, in microscopic quantities, and as large clusters, readily seen with the naked eye, are aspirated, it must be accepted as conclusive that the transformation of the microscopic quantity into macroscopic size could have been accomplished by no other process than growth. We must needs infer that such parasitic growth of vegetable matter within the stomach undoubtedly has some influence upon the stomach. Growth is synonymous with the process of assimilation and elimination, and the process of growth and of life is ultimately a process of chemic action. The process of mold growth is, now one of oxidation, again one of reduction, and again of hydration, and dehydration. It needs for its growth nourishing material, needs the elements which constitute its anatomic existence. It does not import its life elements, it simply abstracts them from the stomach and its contents. Can there be any doubt that mold growth has a decided influence upon the stomach and its contents, and that such influence could not be wholesome? It would require exceptional reasoning to assume that vegetation, foreign and unnecessary to the body, could be of value to it. Mold is a recognized parasite of the flora; could it possibly change its relation when acting as a parasite of the fauna? From these premises the association of mold vegetation in the stomach with distressing subjective symptoms reaches beyond hypothesis. It is undeniable that suffering attributed by the patient to the stomach, and mold vegetation within the stomach are found associated. It remains only to be proved that the mold vegetation and the symptoms complained of are to one another in the relation of cause and effect. Of direct proofs I cannot add anything to what I have said in my original paper, but I have an abundance of indirect proofs. With the disappearance of mold vegetation the symptoms disappear. Considering, therefore, that mold grows in the stomach; that the growth of mold means chemic changes, the production of highly irritating, volatile, organic acids which are demonstrated; that with the disappearance of the mold the irritating acids and the distressing symptoms disappear, sufficient proof would seem adduced to hold the presence of mold vegetation as the cause of the misery of the patient.

The symptoms the patients detail are due to the presence within the stomach of highly irritating, volatile, organic acids, which conform to the general physical laws of the expansibility of gases, spreading in all directions. As their injurious influence upon mucous membranes is everywhere the same the organs whose mucous membranes are thus irritated give unmistakable evidence of their existence. Thus the symptoms are not always confined to the boundaries of the stomach, but are painful manifestations of the irritated organs, and are severe in proportion with the quantity of the organic acids. A summary of the symptoms mostly encountered is: heartburn, uneasiness, soreness, pain, pyrosis, sour eructation, occasional vomiting, sour taste, spasms, cramps either of the pylorus or of the cardia or of both. In the first case the patient relates the pain to the immediate neighborhood of the umbilicus, in the second case the pain is indicated on the left side of the ninth dorsal vertebra, giving respectively pyloric and cardiac spasms. The extragastric symptoms are: soreness and burning behind and along the sternum and between the shoulder-blades (due to the irritation of the esophagus), a choking sensation, the globus hystericus (due to the irritation and contraction of the sphincter-like portion of the beginning of the esophagus), dryness in the throat (due to the irritated, dehydrated condition of the pharynx). This latter condition in turn becomes the cause of a train of symptoms. Dryness of the pharynx manifests itself, symptomatically, as thirst, varying in degree and duration with the irritation, and

necessitating the consumption of frequent and often large amounts of liquids. In these cases, if liquids containing carbonic acid are imbibed the introduced carbonic acid increases the irritation. The excessive amount of liquid introduced into the system must be eliminated by the emunctories and thus excessive perspiration and polyuria are added to the already annoying train of symptoms. For a like reason there may be an increased number of movements, which are necessarily soft. This latter condition must not be confounded with diarrhea, due to irritation of the bowels, which, of course, might be coexistent. Patients often complain that they get dizzy, get headaches, get fainting sensations if they do not take food at once on feeling hunger. This must be recognized as a false appetite by the attending physician. The increased, ravenous appetite is found in patients who have both a normal quantity of hydrochloric acid and a very large amount of organic acids. The headache associated with this disease and especially with this appetite is very significant, and is due directly to the same cause as the appetite. Both are the immediate and direct effects of the volatile, fatty, acrid, organic acids. These acids ascend to the esophagus, here through pharynx, through posterior nares to the nose and middle meatus, through the infundibulum and ethmoidal cells to the frontal sinuses. Tortuous as is this route it nevertheless is an unobstructed (unless by pathologic changes) direct course between stomach and frontal cells. This is the reason why the patients mostly suffer from supraorbital headaches and why there is often severe pain on each side of the root of the nose—the mucous lining of the frontal and ethmoidal cells is irritated in the same manner and by the same agents as is the mucous membrane of the stomach. Another form of headache, intense in character, is the one corresponding to the course of the superior longitudinal sinus. Very characteristic is the way the patient points to the location of this headache. He puts the tips of his fingers, which are usually held in close approximation, right over the region of the superior longitudinal sinus. The pain is usually described as of a bursting nature and is apparently due to the direct absorption of the noxious gases through diffusion by the veins that lead from the nose to this sinus. Buzzing in the ears is an occasional symptom, in which case the eustachian tube undoubtedly plays the intermediary channel for the introducing of the organic acids from the pharynx to the ear. The organic acids entering the intestines produce there very unpleasant symptoms in the shape of pain, colics, griping, etc.

The diagnosis made from these symptoms must be corroborated by the test-breakfast. As all these symptoms are due to the irritation of the mucous membranes by the volatile, fatty organic acids, which may as well have their origin in the intestines—organacidia enterica—it is evident that in cases of organacidia enterica, complicated by pyloric insufficiency (a quite common combination) there will be present not only the intestinal symptoms but likewise the entire picture of organacidia gastrica. From this it is apparent that an absolute diagnosis is of very vital importance. Treating a gastric disorder which requires an acid medication is one thing, and managing an intestinal disease which requires alkaline therapy is quite another.

In a typical case of gastrosia fungosa the physical appearance of the aspirated chyme is very characteristic. There is usually a large quantity, soon dividing into a thin, watery, upper layer with the very finely divided solid part—the “floury layer”—at the bottom.⁴ The watery layer is usually of some shade of green. The odor is sweet, sour, pungent. Mold clusters, mostly yellowish or grass-green or dark-red or blackish, or possibly of even other colors may be seen floating on top of the aspirated chyme. The green-colored chyme should not be taken for containing bile nor the dark-red chyme for a hemorrhage unless bile and blood are *absolutely*

demonstrated beyond the shadow of a doubt. Upon the color and quantity of the mold may depend the color of the chyme. The microscope shows mold life in its different and manifold phases: mycelium, spores, gonidia, asci, single young mold segments, which look exactly like crystals, and microorganisms. Staining and decolorizing⁵ bring out the mold very distinctly.

The chemical examination must be made for organic acids, especially succinic acid, the presence of which is demonstrated as follows:

Extract in a Strauss separatory funnel 1 cc. of filtered chyme with 4 cc. of ether. This, the chyme and ether, are well shaken in the separatory funnel, a short time is allowed for the chyme to settle at the bottom, which after settling is allowed to run out, and then the clear ether extract is floated on a weak iron solution. At the plane of contact between the ether and the iron solution a dark-red ring denotes the succinic, also propionic acids. A sulfur-yellow ring indicates lactic, malic, oxalic, tartaric acid and alcohol; acid phosphates show no ring. The iron solution is made by adding one drop of a 10% ferric chlorid solution to 2 cc. distilled water in a narrow test-tube. How to differentiate between the individual acids is described in my former article.⁶ For the quantitative analysis, by titration, three indicators are used: a supersaturated alcoholic solution of tropæolin 00.; a 0.5% alcoholic solution of dimethyl-amidoazobenzol and a 1% alcoholic solution of phenolphthalein. The first indicates free inorganic acids—free HCl—the second shows the organic acids, and the third demonstrates the general acidity. For the entire titration only 5 cc. of chyme is needed. The indicators are not added all at once, but, for sharper differentiation of the resulting colors, 2 drops of each indicator is added in the order mentioned. The end-reaction of the tropæolin is evidenced by the turning of the cherry-red color, produced by tropæolin in the presence of inorganic acids into an amber color. The addition of the second indicator proves the organic acids by the appearance of a rather carmine-red color, which is turned into a lemon-yellow color by the titration with the decinormal soda solution, when all organic acids have been neutralized by the alkali. After this the third indicator is added and the titration resumed until a carmine-red appears. That the dimethyl reacts not only with free inorganic but also organic acids I have satisfactorily proved in my last quoted article, and will be seen from the table given in this paper. When only a few drops of chyme are aspirated I proceed to find the presence of inorganic and organic acids in this way: a piece of clean filter paper is moistened with the chyme and a drop of tropæolin is allowed to come in contact with the moistened filter paper. The tropæolin reaction results in the presence of free inorganic acids; amber color signifies the absence of free HCl. Should tropæolin prove negative, we can in the same way ascertain the presence of organic acids.

The gastric complications and sequels of gastrosia fungosa are those of organacidia gastrica in general. The constant irritation of the vicinity of the pylorus ultimately causes a chronic inflammatory condition of this part. This again is followed by pyloric insufficiency. Enterosia fungosa is but a natural sequel and complication very often seen, especially in children. Hemorrhagic erosions, ulcer, affection of the esophagus, etc., have been mentioned in the original monograph.

The therapeutic principles are to clean out the existing mold, and to give drugs to destroy the organic acids, which in combination with the diet prevent conditions favorable to the growth of mold. The first is accomplished by lavage. As drugs the mineral acids should be given. The burning sensation is caused by the organic acids, and the sour eructation is produced by the spastic contractions of the stomach ejecting and projecting some of its contents into the pharynx. The mineral acids destroy, decompose, dissociate the organic acids. Soda bicarbonate neutralizes the acids present, it is true, but by so doing it creates favorable conditions for the further development of the organic acids. Organic acids are developed from, and enhanced in their growth by saccharin mediums and mold grows readily on starchy and saccharin matter. Sodium bicarbonate enhances the diastatic action, this results in sugar, and this in turn is oxidized to organic acids. That is the reason why bicarbonate usually gives but temporary relief if any. When bicarbonate has given good results the condition undoubtedly was organacidia enterica and, most likely, accompanied by pyloric insufficiency. Should gastrosia fungosa be complicated with other affections the treatment will also necessarily become complicated.

The dietetic treatment entails comparatively few restrictions: no introducing of organic acids and no introducing of sweet mediums, which favor the development of mold and of organic acids. Food should be cooked and eaten soon after the cooking. Those who pervertedly advocate the eating of raw food are not sufficiently familiar with physiologic chemistry, nor have they evidently ever seen, with an eye open only to unbiased knowledge, the difference between raw and cooked food under the microscope. Vegetables should be washed thoroughly in plenty of running water. At the beginning of the treatment fruit should be entirely eliminated from the diet. Grapes especially are very dangerous because they harbor on their surface an enormous quantity of mold; they are sweet, and they contain a large amount of organic acids. If eaten, they should be plucked off the stem, then washed repeatedly in plenty of water, and before eating, each grape dried with a clean napkin. While pies, cakes, and other pastry should be sedulously avoided, there is absolutely no reason why other farinaceous articles and potatoes could not be permitted. Cereals must be well cooked. Whole grain bread and cereals cooked with their cellulose skin should be avoided. Strong coffee, strong tea, strong cocoa and alcoholic liquors should be forbidden at the beginning of the treatment, but later on may be used in moderation. To prepare coffee place the ground coffee into a receptacle, cloth or perforated metal, and pass the boiling water through it. The coffee infusion, thus prepared, must never come in contact with the coffee grounds. Only about a teaspoonful of such an infusion is needed to impart its delicious aroma to a cupful of milk. Soda water, seltzer, vichy and similar beverages containing CO₂ are likewise excluded.

In the histories of the following 10 cases, the symptoms of gastrosia fungosa are illustrated. In the first case only the qualitative test for organic acid is made, as at that time I could do no more.

CASE I.—Morris G., 28 years, Hungarian, painter, September 10, 1901. Has had heartburn for the last five years; enormous appetite, feels like vomiting, chiefly in the morning; when he gets hungry, sees spots before the eyes; buzzing feeling in the head after heartburn; loose bowels—five times daily for the last five years; urinates quite frequently; feels very bad after drinking coffee. Diet—when at work: occasionally eggs or oatmeal in the morning, but often nothing; at nine, sandwich and beer; at noon, regular dinner; between three and four, sandwich and beer; supper, meat, soup and beer; about nine p.m., sandwich and beer; very often eats something before going to bed. When he is not at work, he eats every two hours, because he gets a gnawing sensation in the stomach. Perspires very freely. The physical examination showed nothing abnormal in the chest; left kidney prolapsed in the third degree but right kidney scarcely palpable and tender; albuminuria. The fasting stomach yielded 55 cc. (some was spilled) greenish yellow, mucoid fluid; general acidity 56; free acids (Topfer's solution) 26. After the test-breakfast some 80 cc. yellowish-green contents was obtained, of a sweetish sour odor; pretty well reduced to chyme, but with some few coarse pieces present; general acidity 72, free acids (Topfer) 46; succinic acid present. No microscopic examination was made.

CASE II.—Joseph M., 34 years, Hungarian, fruit peddler, came to consult me December 11, 1901, especially for pain in the lumbosacral region, from which he suffered for the last six years, especially on getting up from his seat; bowels hard. Gets up at five; breakfasts at nine on coffee and rolls; dinner, meat, soup and some pastry; supper, goulash or sausages; eats fruit between meals. Two years ago had hemorrhages, lasting for three days, which were understood to come from the lungs and patient was sent to Colorado, where he stayed for six months, and, feeling better, he returned. After his return he had another attack of hemorrhage. His physical examination showed nothing abnormal in his chest (which was subsequently corroborated by others); both kidneys prolapsed in the first degree; spleen enlarged; slight resistance and tenderness at McBurney's point. The fasting stomach contained nothing. After test-breakfast 35 cc. was aspirated, of a pungent odor, coarse particles with little floury layer. *Microscopic examination*: Long curved bacilli, bead bacilli, prismatic crystals (single sections of mold), gonidia. Free HCl 24, organic acids 38, general acidity 82; floating test shows succinic acid; acid phosphates absent; urine normal. In this case the stomach tube was arrested in the esophagus both times: when entering the fasting stomach and when introducing the tube for test-meal aspiration. Both times the tube was arrested for possibly only a minute or so and then proceeded. This caused me to inquire

of the patient for any previous history, which at first he did not care to mention. The answer was the history of his hemorrhages and his being sent to Colorado. I therefore concluded that the arrest of the tube was due to the irritation of the cicatrix after an ulcer of the esophagus which was mistaken for pulmonary tuberculosis.

CASE III.—Mrs. Jennie S., 42 years, born in New York; three children. January 18, 1902. Is very thirsty and has to drink much (seltzer); feels very dry, burning in the lower part of sternum; belching; sour eructation; very often experiences a sharp, miserable taste of onions, of which she does not partake at all. Last night had cramps in the right epigastrium; coryza for a long time; irregular supraorbital and frontal headache; occasional spells of dizziness; never vomited. Had stomach trouble at times, but the present attack has lasted for the last nine months. Appetite not so good; dry parched taste; drinks three to four bottles of seltzer even the coldest day; bowels move only once daily, without medication; lost nine pounds within the last six to eight weeks; drinks three to four large cups of coffee daily. For the last seven months has been under treatment for diabetes. Got the treatment outlined. Eight days later came for test-meal examination, but at the same time reported feeling better. The fasting stomach contained about 45 cc. of yellowish-green contents. Test-meal aspiration gave 165 cc.—thin fluid above and floury layer below. Free HCl 24, organic acids 22, general acidity 59; floating test, succinic acid; acid phosphates absent, urine normal. This case has been mistaken for diabetes, but the patient made an excellent recovery in about five to six weeks.

CASE IV.—Mrs. Lena S., 28 years, Russian, two children, pregnant five months. Pressure in the stomach, especially at night about 3 o'clock. It "catches" her with pain in the stomach and palpitation, and then she cannot fall asleep for some two hours; has vertigo and fainting spells; had epileptic fits at night quite often for the last three years; appetite is usually good; must urinate frequently; gets calls for moving the bowels at night which "catch her." When she gets attacks of palpitation she must sit up, stem her feet against another chair, bend forward and with her hands press upon the epigastrium; is easily excited; bad and bitter taste. Coffee, two and more glasses about 8 a.m. For the last two or three years cannot eat any sweets; was treated for asthma. Both kidneys and spleen palpable. On March 11, 1902, came for an examination on an empty stomach after an attack of nocturnal epilepsy, having had three fits the night before. The fasting stomach yielded about 75 cc. of dark-red contents which from physical appearance could be taken for a hemorrhage. The odor was pungently sour. The color was due to the enormous mass of mold of the dark-red variety. Under the microscope there were seen very fine-beaded bacilli, greenish-yellow mold, circular purple bodies, no sarcinas, very few isolated yeast cells. The patient was so very much exhausted and somnolent that she fell asleep while I was examining the aspirated contents under the microscope; she was entirely dazed. Under such conditions I did not care to give her any test-breakfast. Her urine showed albumin. March 16, fasting, stomach no contents, lavage. March 17, fasting, about 10 cc. mucus; tropæolin positive; test-meal, about 10 cc. imbedded in mucus; tropæolin positive. March 18, fasting, no contents; test-meal aspirated half an hour after eating gave 75 cc., mucus present, no special odor, no tropæolin reaction, acidity with dimethyl 32, general acidity 70. On March 23 she came complaining of having premonitory signs of the coming of epileptic fits; had milk and roll about 10 a.m. I now (2 p.m.) aspirated, but found stomach empty; admits having had beer and grape wine yesterday. On March 24 she came to report of having had a very bad night, could not sleep at all, but had no epileptic fits. Had only a cup of milk this morning; aspiration (at 2 p.m.), no contents. On April 5 she reports not having had any epileptic fit last week, although she expected it. April 7, feels bad and slept till 11 a.m., after which she took hot milk and water. Aspirated (at 2.30 p. m.) about 120 cc., which gave free HCl 36, organic acids 28, general acidity 132. On May 2 it "caught" her very badly in the daytime, but she had no epileptic fit; this came after drinking "barshch," a sour beverage made from red beets. She was delivered of a healthy boy June 16, and has felt good all the time.

CASE V.—Miss Sara N., 18 years, Hungarian, works on neckties. On April 13, 1901, she visited me for the first time and then complained of trouble with her bowels and stomach lasting about a year. Could eat no eggs because the taste of them lingered after eating. Then came sour eructation, choking in the throat (pointing with the finger immediately above the sternum); severe constipation for the last three years; occasional headache. She came about one year after and on April 20, 1902, the fasting stomach contained about 120 cc. greenish-yellow (mold) fluid. One hour after the test-breakfast 250 cc. chyme was aspirated of greenish-yellow color. The solid part was very finely divided, forming at the bottom the "floury layer." On top of the fluid floated one large green cluster (mold) of a size one inch by one-half inch; also a few red brown streaks (red-brown mold) were present. The odor was sweetish. Free HCl 18, organic acids 26, general acidity 66. No microscopic examination.

CASE VI.—Mrs. Sara B., 30 years, Galician, three children; April 29, 1902. Pain in the epigastrium, headache, pain between shoulder-blades, bitter and sour taste, constipation, dryness in

the throat at night, troubled after meat; would like to eat every minute. The fasting stomach was empty; aspiration after test-meal about 50 cc., mucus; tropæolin negative, organic acids 20, general acidity 50. No microscopic examination was made.

CASE VII.—Samuel F., 33 years, Hungarian, hat maker; April 29, 1902. His suffering dates back three years; has no movements without drugs; after taking the first bite feels feverish; feels too heavy after meals, frontal headache; can eat only sour things. The physical examination shows enlarged spleen. The fasting stomach contained about 10 cc. greenish contents (mold). After the test-breakfast 100 cc. was aspirated. Green clusters floated on top; odor, sour sweet; "floury layer" after a little standing. Free HCl 26, organic acids 52, general acidity 114; no microscopic examination made.

CASE VIII.—Harris D., 36 years, cloak operator during the season, but keeps a stand in Coney Island during summer season. This patient was sent to me July 1, 1902, by another physician for diagnosis. His present illness dates back six to seven weeks. It began with a burning sensation "under the heart," which was most severe in the afternoon. Five weeks ago cramps appeared in the afternoon, which kept up since. In the last few days the cramps occurred also in the forenoon. Usually the cramps would cease on lying down, but in the last few days the cramps did not cease on lying down. During these five weeks he vomited five times, about two hours after dinner. The last time he vomited, on June 29, a half hour after the dinner, which latter included prunes. While usually the cramps ceased after vomiting, this last time they did not cease. His appetite is very good even during the cramps. No special taste; no headaches. Occasionally feels as if his throat burned him and at times has a sensation of pressure behind the sternum. The examination showed 5 cc. of greenish looking contents in the fasting stomach. The test-meal aspiration gave 68 cc.; the solid portion of the chyme consisted of coarse particles and of the floury layer; odor, that of roll but not pungent; mold and different bacilli present but no yeast chains. Free HCl 18, organic acid 24, general acidity 62. Floating test gave succinic acid reaction. Left kidney enlarged, prolapsed and somewhat tender on palpation; albuminuria.

CASE IX.—Mrs. Tillie S., 35 years, Galician; October 9, 1901. Headache, diarrhea, anorexia, bad taste. Came back July 16, 1902, for examination. The fasting stomach contained about 2 cc. Test-meal aspiration 68 cc.; green mold patches floating on top of the aspirated chyme, some mucus present. The solid portion consists of the floury layer with some coarse particles; odor slightly sour, salty and sweetish. The microscope shows few mother and daughter yeast cells, no yeast chains, bacilli, mold patches. No free HCl present (to both tropæolin and Guinzburg), organic acids 24, general acidity 52.

CASE X.—Miss Rose B., 18 years, born in New York, shirtwaist operator; September 2, 1902. For about the last two years would vomit every morning after her breakfast, which consists of roll with either cocoa or coffee, and occasionally a tomato with it; for lunch has a sandwich, fruit and tea; some fruit in the afternoon; for supper, soup, meat, seldom potatoes or vegetables. For the last few days has been vomiting constantly after everything. Occipital headache, dizziness, choking, bowels regular, flashes of heat and cold, ringing in the ears, fullness in stomach. Fasting, no contents. Test-meal, 150 cc., plenty of grass-green and yellow-green clusters floating, odor not disagreeable, floury layer; the fluid portion of the chyme is yellowish-green, no mucus. Stomach distention with CO₂ shows no enlargement or prolapse. "Stiffening of the stomach" (the "Magensteifung") of Boas present. Free HCl 12, organic acids 20, general acidity 52.

In the following I have tabulated the results of the quantitative analyses for better review, leaving out the first case, as at that time I knew only of the qualitative test for the organic acids:

Case.	Free HCl (tropæolin).	Organ. acid (dimethyl).	All free acids (dimethyl).	General acidity (phenolphthalein)
II	24	38	62	82
III	24	22	46	59
IV	0	32	32	70
V	18	26	44	66
VI	0	20	20	50
VII	26	52	78	114
VIII	18	24	42	62
IX	0	24	24	52
X	12	20	32	52

From this table we see that in no case was the actual amount of the free HCl excessive. On the contrary, it was at best nearer the lower limit of what is now accepted as normal. Should I have interpreted the dimethyl as indicator for only free HCl, Cases II and VII would have to be recognized as hyperchlorhydria, while Cases III, V and VIII already exceed the normal maximum limit. Case X should, according to the dimethyl, pass as containing a very fair amount of HCl. Likewise could Cases IV, VI and IX not explain the cause of the

patient's suffering, as Töpfer's solution gave good coefficients. But this table shows how absolutely wrong it is that the dimethylamidoazobenzol should be taken as an unqualified indicator for only the free HCl. My paper on "Some New Facts in the Chemistry of the Stomach" covers the ground and proves that the dimethyl, also congo, react as well with the organic acids. Bad as it would be to treat Cases II and VII for hyperchlorhydria it would be much worse for the therapy to overlook the facts that Cases IV, VI and IX had no free HCl at all (in Case IX the absence of the free HCl was also corroborated by Guinzburg, in the other two Guinzburg was not tested) and needed it very much. These last three cases show how absolutely fallacious must be the treatment based upon a very erroneous diagnosis which in turn is the result of a fallacious indicator. I can here but repeat the sentence of my paper on organacidia: "Fallacious tests lead to fallacious diagnosis; fallacious diagnosis to fallacious treatment, and fallacious treatment lead to the recognizing of the frequent occurrence of neuroses of the stomach." This table shows the marked preponderance of the organic acids in every case but in Case III, in which the organic and the inorganic acids are about the same. I very strongly recommend the tropæolin solution.

This is prepared by adding, in excess, the powdered tropæolin 00 to strong or absolute alcohol. It is then left alone for two or three days. The solution, a dark cherry-red, is then ready for use. To the novice the end-reaction of the tropæolin may cause some consternation, but practice makes perfect. The best way to judge the change of the chyme into an amber color is to hold the beaker which has the chyme inclined and look down at the angle formed by the wall and the bottom. A white sheet is held underneath the beaker. For practising, I would advise the titrating of a mixture of HCl with an organic acid—acetic acid—both solutions to be of known acidity. This is done: A weak solution of HCl is made and its acidity determined with phenolphthalein as indicator. In a like manner we proceed with the acetic acid. The acidity of each solution being known, we mix the two solutions, taking equal parts of each. If the HCl solution has an acidity of 20, and the acidity of the acetic acid is 40, and if of the mixture of the two 10 cc. is used for titration, actually only 5 cc. of each, the red color of the mixture, after adding tropæolin, will turn amber color when the buret gives an acidity of 40. This acidity of 40 means only 20, as only half of the mixture in the beaker is HCl. We can now add the dimethyl when the amber-colored mixture turns red again. This experiment can be used to prove both the color change of the tropæolin and its value as an indicator for free inorganic acids.

Of great interest in the histories given is the fact that Cases I, III and especially V show considerable gastrosuccorria and that the contents were yellowish-green (moldy). Some contents of a like color we also note in some other cases. That some shade of green is the almost accepted color in gastrosuccorria is well known. But whether gastrosuccorria is caused by gastrosia fungosa is a contention yet to be demonstrated; present facts seem to lead my thoughts in that way.

Cases I and VI show the enormous appetite. Case II illustrates ulcer of the esophagus, as a sequel of irritation by organic acids which in this case were presumably introduced, mostly, with the fruits which were eaten frequently. Case III represents organacidia being mistaken for diabetes. Case IV is the banner case of the series. Here we find three well-marked facts: 1. The patient had oft recurring, crises-like attacks of nocturnal epilepsy. 2. Soon after an attack of nocturnal epilepsy the patient comes to me and I aspirate some 70 cc. from her fasting stomach. These contents are reddish, chocolate brown and prove to consist wholly of the dark-red mold variety. 3. With the disappearance of the mold from her stomach her epileptic attacks ceased. A further instance worth noting in this case is that the patient's stomach had been entered repeatedly for lavage and test-meal aspiration without in the slightest interfering with the progress of her pregnancy. Of course, I know of but one contraindication to the introducing of the stomach tube, and this is if one has not yet mastered the simple technic of introducing the tube. But then he might

use the director⁷ I invented for that purpose. Was the variety of mold found in Case IV the cause of her nocturnal epilepsy? Her epileptic seizures were at certain and definite intervals; she knew the date of coming or she imagined she knew when the attack was due, and "felt" it coming. Were these nocturnal seizures, which the patient alleged to the influence of the full moon, synchronous with the "ripening" of another crop of mold? So striking and certainly extremely pleasing to the unfortunate woman was the absolutely immediate effect of the proper understanding and treatment of her highly melancholy malady that one cannot help associate the presence of the mold in question with her epileptic seizures. It is hoped that conscientious men will give their thoughts to this history. The patient is a very poor and densely ignorant woman, living in the heart of the slums and coming from a country where benighted ignorance and abundance of superstition are not great exceptions. Even the best food she could procure with the meager means at her disposal cannot be very good. Her treatment was a constant battle between the corruptedly spicy and saucy food in vogue in her environs and the rigorous instructions given by me. In that unequal skirmish, science was not always victorious and, of course, whenever I was clandestinely victimized the patient's stomach sided with me in open rebellion.

Cases V and X present "stenosis pylori ab irritatione." In these are aspirated large quantities of chyme, a condition usually interpreted as "atonic dyspepsia," to which diagnosis both Boas⁸ and myself⁹ take exception. The presence of large quantities of chyme at the end of one hour after the test-breakfast of which the solids are represented by the "floury layer" signifies not atony but the very contrary, hypertony, due to the stenosis pylori which is occasioned by the presence of the organic acids. The presence of mold vegetation in these cases is certainly very evident, especially in Case V, in which a very large piece of a mold colony, one by one and a half inches in size, was aspirated.

Case VII enlightens us greatly on the cause of the organacidia: he "likes only sour things," besides green clusters were aspirated. In Case VIII it is observed that the cramps disappeared on lying down. This is explained that upon lying down the irritating chyme gravitates away from the stomach openings; thus the cramps, cardiac and pyloric spasms ceased. Case IX shows gastrosia fungosa complicated by gastritis.

It might be argued that the cases here reported are ill chosen to demonstrate gastrosia fungosa, that the aspirated contents do not show uniformity in all 10 cases. Neither have I intended to illustrate here gastrosia fungosa by exactly the same pictures. Gastrosia fungosa produces one picture when it just begins and different pictures as it progresses.

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- ³ Some New Facts in the Chemistry of the Stomach, *American Medicine*, March 22, 1902.
- ⁴ For the significance of this and its interpretation, see the original article.
- ⁵ Vide the original article.
- ⁶ *American Medicine*, March 22, 1902.
- ⁷ New York Medical Record, August 29, 1896, and *Berliner klinische Wochenschrift*, June 11, 1900.
- ⁸ *Deutsche med. Wochenschrift*, March 6, 1902.
- ⁹ *Insufficiëntia Pylori*, *Phila. Med. Jour.*, May 24, 1902, and in *Organacidia*, cited above.

Disease in Brooklyn Schools.—Since September 18 last 6,347 children have been excluded from attending the schools on account of disease. Of these 1,979 were excluded because of eye diseases; 2,920 for diseases of the head and body; 75 for diphtheria; 14 for measles; 40 for chicken-pox; 879 for skin diseases, 74 for whoopingcough, and 336 for mumps. A strong plea is made by Dr. Raymond, assistant sanitary superintendent, for the appointment of more inspectors who shall devote their time exclusively to the schools. It is stated that 4,000 pupils were found who had never been vaccinated and 41,000 children whose first vaccination had "run out."

THE CAUSES OF DEATH IN DIPHTHERIA.¹

BY
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of Philadelphia.

Perhaps no disease, certainly none of an infectious nature, has so uncertain a prognosis as diphtheria. Its possibilities are numerous, and its more frequent complications are among the most dangerous that may arise in the course of any disease. Even when convalescence is apparently established, the danger is not passed; for death may occur suddenly in various ways.

In a general way it may be said that death in diphtheria is due (1) to mechanical causes, (2) to the action of the toxin on the system, or (3) to one of the complications.

Mechanically, death may be caused by asphyxia, which occurs as a result of closure of the glottis in laryngeal diphtheria. Northrup and others maintain that when asphyxia occurs in the early stages of the disease spasm plays the most important role in the production of the laryngeal stenosis. It is a common experience at autopsies on children who died of asphyxia to find little or no membrane in the larynx, although there is a certain amount of congestion and swelling. Further, attacks of dyspnea are so readily excited by the slightest cause, and come on so suddenly, that Northrup is led to the conclusion that they are of a spasmodic nature, and are caused by contraction of the hypersensitive laryngeal muscles. But as the disease progresses, the effects of swelling and exudate become more and more marked, playing a constantly increasing part in the production of dyspneic symptoms; until finally in the last period of the disease, asphyxia is due entirely to the presence of false membrane and edema, and spasm is no longer a factor.

The toxemic form of death in diphtheria is produced through a general depression of all bodily tissues, caused by the poisonous action of the toxalbumins elaborated by the diphtheria bacillus. In such cases the fatal termination occurs at the height of the local process. There is a malignant form in which the infection is so virulent that the system is very rapidly overwhelmed by a profound intoxication, and death takes place within 24 to 48 hours. But such cases are fortunately rare, and usually, if the patient dies from diphtheric toxemia, the fatal termination occurs between the fifth and tenth days.

Often the action of the diphtheria bacillus is complicated and aided by a streptococcus infection, forming what is called septic diphtheria. In such cases the course of the disease is most severe. Death is probably more often due to the streptococcal septicemia than to the action of the diphtheric poison. It is in these cases of mixed infection that the severe complications of diphtheria are most likely to occur.

Of all these complications, bronchopneumonia is the one most to be dreaded. It occurs especially when the larynx is involved, but may follow any case of mixed infection, whether the larynx is affected or not. Some statistics, notably those of institutions, show it to be the principal cause of death in the majority of cases of diphtheria. At autopsy the streptococcus, pneumococcus, and diphtheria bacillus have all been found in the lung lesions. Wright and Stokes believe that the diphtheria bacillus may cause the pneumonia in many instances. Councilman, Mallory, and Pearce maintain that the pneumococcus must be regarded as the principal agent in producing the lung infection. Most authors, however (notably Prudden and Northrup), attribute its occurrence to the streptococcus, which finds access to the lung by inspiration of the foci of disease in the upper air passages. Bronchopneumonia usually occurs at the height of the disease, and is naturally most fatal then, although it may come on at any period, even in conva-

lescence after the membrane has entirely disappeared from the throat.

The kidneys are more or less affected in almost every case of diphtheria of moderate severity, but the nephritis of diphtheria usually runs a favorable course. However, it happens occasionally that the kidneys become extensively diseased, in which event all the symptoms of acute uremia may develop, and the case may end in death that is directly attributable to the renal condition. Fatal nephritis is most likely to occur in cases of septic diphtheria.

Perhaps the most distressing mode of death in diphtheria from the physician's point of view is that due to heart failure. This complication may occur early in the disease or late, even after convalescence is seemingly established. It may happen in cases of great severity or in the mildest cases. When heart complications develop early they occur in patients suffering from a severe form of the disease. In late cases they may make their first appearance in the third or fourth, or as late as the sixth or seventh week, after the disappearance of all traces of local disease. Holt, in his textbook on "Diseases of Infancy and Childhood," vividly describes the onset of heart failure in such cases as follows:

"It often happens that the patient is regarded as convalescent, and the great vigilance of the previous days or weeks has been relaxed. The physician has ceased his frequent visits and looks in once a day to satisfy himself that the patient is doing well and all congratulate themselves that the danger is over. If the pulse is carefully watched it is one day discovered that it is weaker than formerly and occasionally there is slight irregularity. It is usually slower, but may be more rapid than normal. On inquiry it is found that the patient does not take his food so well, that he has refused stimulants, and perhaps has vomited once or twice. Slight dyspnea is noticed and the face is paler than usual. Sometimes within 24 hours from the beginning of such symptoms the patient is dead. The changes for the worse occur very rapidly. The pulse becomes weaker, more irregular, often abnormally slow, but very rapid on slight exertion, and there may be a sense of precordial weakness or distress. There are dyspnea without cyanosis, anxiety, and great restlessness, but the mind is clear. There is vomiting if food and stimulants are taken. The extremities are cold. Auscultation shows feeble and indistinct heart sounds, but no murmur. The pallor is extreme. Death results from sudden syncope, sometimes during an attempt to administer food, sometimes from such slight exertion as turning in the crib."

Occasionally death from heart failure may occur without warning or previous symptoms. But usually if the patient is watched carefully some such premonitory symptoms as have been described will be observed.

The explanation of heart failure in diphtheria is not the same in all cases. Not infrequently cardiac thrombi play an important part in producing the fatal result. This was found by Hibbard to have occurred in 3 out of 21 cases of death due to heart complications which were examined by him. This author thinks a possible explanation of such cases is the occurrence of endocardial degenerations, which act as foci for the formation of the thrombi. When death occurs suddenly, following some muscular effort or excitement, without premonitory symptoms, it is in all probability the heart muscle which is most at fault. If the heart failure is ushered in by prodromal symptoms, it is probably the result of a toxic neuritis of the vagus nerve, and is thus a form of postdiphtheric paralysis. Changes in the heart muscle, however, occur in so large a proportion of cases of diphtheria that it is probable both pathologic conditions will be found at autopsy; and it is difficult, often impossible, to distinguish between the symptoms caused by each lesion.

The pathology of these myocardial changes has been extensively worked up, notably by Romberg, and by Councilman, Mallory, and Pearce. The results of these investigations are fairly uniform. Fatty degeneration is the simplest change found, and occurs alone in the severe cases of short duration. In more prolonged cases the fatty degeneration accompanies and seems to precede more advanced forms. In the latter there is complete destruction of the muscle tissue, which is converted

¹ Read before the Northern Medical Association of Philadelphia, June 13, 1902.

into hyaline masses. Accompanying these parenchymatous changes there is an interstitial myocarditis, consisting of a round-cell infiltration of the heart walls, which may, in advanced cases, lead to fibrous changes. The cause of these degenerations in the heart and its nervous supply is undoubtedly the action of the toxalbumins generated by the diphtheria bacillus.

In some cases of sudden death, apparently from cardiac paralysis, it may be found at autopsy that there is a hyperplasia of the thymus gland, lymph nodes, spleen, and other lymphoid tissues, associated with a hypoplasia of the heart and the aorta. These changes form what has been called the "lymphatic constitution." They have been found frequently in cases of sudden death from various causes, and are believed by many to indicate a diminished vital resistance and a special liability to cardiac paralysis. The study of this condition has been especially directed toward deaths under chloroform narcosis. But it is maintained that some sudden fatalities in the course of certain infectious diseases, markedly those occurring in convalescence from diphtheria, may be in part referable to the presence of the lymphatic constitution. We know little, however, of the chain of events leading to the fatal result, and, as Ewing says, we are compelled to content ourselves with the statement that the subjects of the lymphatic constitution, for some unknown reasons, are specially susceptible to reflex cardiac paralysis.

Changes in the nervous system, due to the action of the diphtheric poison, are of quite frequent occurrence. Here, as in the case of heart complications, paralytic sequels may follow either a mild case or a severe one, although, of course, more likely to occur in the latter. The lesion produced is a peripheral neuritis. From our present standpoint, the most interesting forms of diphtheric neuritis are those which cause cardiac or respiratory paralysis. Cardiac paralysis has already been mentioned. Respiratory paralysis may be due to involvement of the phrenic or the intercostal nerves, most frequently the former. Death is rarely, if ever, sudden. The symptoms may extend over two or three days, and consist of dyspneic attacks of gradually increasing frequency and severity. They are attended by extreme anxiety, distress and apprehension on the part of the patient. There is a constant dread of impending suffocation, which dread is unfortunately only too well founded, for death is the usual termination.

Finally, diphtheria may be complicated with other infectious diseases, and in very many cases the combinations are most deadly. This is especially true of combinations of diphtheria with measles, scarlet fever or typhoid fever. In such cases death may be caused by the development of bronchopneumonia or of a general sepsis, or it may be due to the overwhelming effects of the combined toxins of the diseases in question.

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Stringent Inspection of Immigrants.—The Immigration Department has drawn up regulations for the guidance of the medical superintendent stationed at St. Johns, N. B., relative to the health of immigrants. Passengers bound for the United States or Canada will be rigidly inspected, and under the new regulations many will be refused admission on account of dangerous and contagious diseases. Heretofore it is said the rules have been loosely enforced.

PERTUSSIS, WITH SPECIAL REFERENCE TO ITS EARLY DIAGNOSIS FROM THE BLOOD FINDINGS.

BY

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During the past 10 years Weill and Pehn¹ have devoted special attention to the period when the patient may transmit the disease. They state that the specific organism disappears rapidly when the patient develops the paroxysmal cough; and they hold that the contagious period is during the bronchial or catarrhal stage. When the characteristic cough develops, the likelihood of contagion is rapidly lessened, and by the eighth day of the paroxysmal period the possibility of a child infecting others is no longer present.²

That whoopingcough is very contagious during the catarrhal stage is well known, but that it is progressively less contagious during the spasmodic stage is not so well known, and will be something of a surprise to most older physicians. The diagnosis of whoopingcough, during the stage of its greatest contagiousness, is often difficult in the absence of positive knowledge that the patient has been exposed to the disease. There is very little to go upon with the exception of the patient's age and the more or less incessant and purposeless cough often following a more or less pronounced coryza, until the spasmodic stage begins to develop; and even then, in regard to many patients that do not develop the characteristic "whoop," one may remain more or less in doubt whether the child has had whoopingcough or not. In the presence of these difficulties and doubts, any aid that will render a diagnosis certain earlier in the disease, or even more certain in the doubtful cases, will be a great satisfaction to the physician, and of more than passing value to the public from a hygienic or prophylactic standpoint.

H. Mennier³ states that

In pertussis of children there is a constant leukocytosis which far exceeds the leukocytosis which is found in other afebrile affections of the respiratory tract, due probably to a specific virus associated with this disease. The leukocytosis is found comparatively early, even before the clinical symptoms are well marked; reaches its height during the period of the paroxysms, and then gradually subsides as the stage of the decline of the disease progresses. In the beginning of the convulsive stage the number of leukocytes averages 25,000, and may reach 40,000. Complications, as otitis, bronchitis and bronchopneumonia, seem to have no influence on the number of leukocytes. The increase of the white cells is both relative and absolute, more intensive in younger than in older patients. The chief increase is in the lymphocytes, but all forms are increased to some extent. While the cause of the leukocytosis is unknown, it is probably due to the intense congestion of the tracheobronchial glands. The constancy of the leukocytosis in pertussis, its preponderance over all other spasmodic respiratory affections, and its early appearance before the typical paroxysms, make the blood examination a valuable aid in differential diagnosis and a decided advantage in prophylaxis in schools and hospitals.⁴

The practical interest in Mennier's observation lies in the statement that the leukocytosis consists chiefly in an increase in the lymphocytes, because if it has to do with a lymphatic leukocytosis, on account of its distinctive character it can be determined by the differential leukocyte count without the necessity of resorting to the whole white blood count in the wet preparation. It is useless to attempt to minimize the difficulty and inconvenience of making complete blood counts in young children, especially in private practice; and while not without its difficulties it is much simpler and more convenient to obtain smears for staining and differential counting, and this permits a much more economic distribution of one's time. Therefore the purpose of the present short study is to see how far differential counting will serve to establish the existence of a lymphatic leukocytosis in the early stages of pertussis, and its diagnostic value.

In the healthy human adult the number of leuko-

cytes in the cmm. of blood is about 8,000, and they are distributed in the following proportions: Polynuclear neutrophilic leukocytes, 62% to 70%; lymphocytes (small mononuclear leukocytes), 20% to 30%; large mononuclear and transition forms, 4% to 8%; eosinophiles, 1% to 4%; mast-cells, 0.5%.

The leukocytes are greater in number at birth than in the adult, with a still further increase during the first 48 hours, then a decline, though the count still remains higher during the first and second year than in the adult. After the second year the number gradually declines to that found in adult blood, and the percentage of the various forms of leukocytes becomes normal. Engel found in infants 12% to 20% of polynuclear cells; after the first few months up to the end of the first year, 40% to 50%; at 12 years of age, 60%. It may be stated in a general way that higher percentages of lymphocytes are found in the blood of children up to the twelfth year than in adults.

I have examined the blood of 19 children, ranging from 7 months to 11 years of age, all of them at the time suspected of being in the catarrhal stage of whooping-cough. Fifteen of the 19 cases, from their subsequent course, proved to be cases of pertussis, and 4 of them not. The whole number of leukocytes were counted in 5 of the cases that afterward proved to be cases of pertussis; they ranged from 4,288 in the lowest to 12,000 in the highest, the average of the five counts being 6,698. A differential leukocyte count was made in all of the 19 cases. There was no evidence whatever, from the apparent number of leukocytes on the cover-slips or from the time consumed in counting a given number, that any of the cases had a hyperleukocytosis of any marked degree, while several of them showed decided evidence of a leukopenia. In 11 of the 14 cases of pertussis the lymphocyte percentage exceeded that of the polynuclear neutrophilic leukocyte, the average percentage of the various elements of the 15 cases (18 counts) being:

Polynuclear neutrophilic leukocytes, 43%.
Lymphocytes, 49.9%.
Large mononuclear and transition forms, 4.9%.
Eosinophiles, 1.7%.
Mast-cells, 0.3%.

In all of the 4 cases proving not to be pertussis the polynuclear neutrophilic leukocyte percentage exceeded that of the lymphocytes, the average of the count of the 4 cases being:

Polynuclear neutrophilic leukocytes, 56.5%.
Lymphocytes, 33%.
Large mononuclear and transition forms, 7.8%.
Eosinophiles, 1.9%.
Mast-cells, 0.3%.

One of the cases of pertussis, the first I examined and the results of which linked my attention to the subject, is as follows:

The patient was an extremely well-nourished child of 5 years. At the time of the examination, just before the Christmas holidays, she had been coughing between two and three weeks. Her mother was very anxious to know whether it was whooping-cough, as upon the answer depended whether she should be isolated or not at a time when she would come in contact with other children at her own home and their homes during Christmas week. Her blood count gave the following results: Whole number of leukocytes, 11,000; polynuclear neutrophilic leukocytes, 44%; lymphocytes, 51%; large mononuclear and transition forms, 2%; eosinophiles, 2.5%; mast-cells, 0.5%.

On the strength of the lymphocytosis I diagnosed whooping-cough. The course of the cough was, in regard to its duration and general character, typical of the disease, but the child did not "whoop," so far as her family could say, although the nurse said she heard her "whoop" once. My mind would have rested easy in regard to the original diagnosis, in spite of the mild character of the attack, if I had not examined her blood again a month or six weeks after the cough had ceased, when the differential count resulted as follows: Polynuclear neutrophilic leukocytes, 34.6%; lymphocytes, 54.9%; large mononuclear and transition forms, 7.7%; eosinophiles, 2.5%; mast-cells, 0.3%—a more characteristic picture of a lymphatic leukocytosis than she had during the catarrhal stage of the disease. A still later count, five months after the disease, shows 35% of polynuclear neutrophiles, and 60% of lymphocytes, with very few leukocytes on the slide.

Cases XIV and XV are of interest.

The patients, brother and sister, aged 9 months and 4½ years, respectively, began to cough simultaneously. The coughs were characterized by their spasmodic character from the beginning. At the end of the first week the baby's differential blood count was: Polynuclear neutrophilic leukocytes, 40%; lymphocytes, 50.5%; large mononuclear and transition forms, 6.2%; the girl's corresponding elements, 57.3%, 33.6%, and 4.5% respectively. The girl's cough stopped completely by the end of the second week, the baby's cough continuing unabated. At the end of the third week the baby's cough, while very suspicious, was not absolutely characteristic; isolated shocks of cough at intervals, always one, sometimes two paroxysms a day, which resulted in gagging and finally vomiting. At this time the girl's cough began anew (after more than a week of complete suspension), a hard, dry, spasmodic cough, with no marked paroxysms; at this time her differential count was as follows: Polynuclear neutrophilic leukocytes, 47.3%; lymphocytes, 40.5%; large mononuclear and transition forms, 8%. At the end of five weeks both children were still coughing, but improved; the baby had one paroxysm a day, the girl's cough was unchanged in character but less frequent. Both cases are in all probability pertussis, although neither of them have "whooped." The doubt lies in the family history and the absence of positive blood findings. Three older children had whooping-cough some years ago, and had it severely; there is a fifth child, intermediate in age, that did not have it then and is free from it now. The whole number of leukocytes in the case of the baby was very small. It took longer to count 600 in his case than it did to count twice that number in the case of his sister. The question naturally arises whether the baby's tender age may not account for the excess of lymphocytes in his blood, and is answered in some degree by the case of a 7 months' old baby, whose cough turned out not to be whooping-cough, and whose differential count gave: Polynuclear neutrophilic leukocytes, 55.7%; lymphocytes, 38%; large mononuclear and transition forms, 8%.

The results of the differential count of the blood of three adults, two of them with whooping-cough, the other, who had been repeatedly exposed to it, and suffered with a severe, intractable, spasmodic bronchial cough, with all the characteristics of the disease without actually "whooping," show an interesting contrast. Two of them had normal adult percentages: 62.4% and 70% of polynuclear neutrophiles, 31% and 23% of lymphocytes, and 5.2% and 5% of large mononuclear and transition forms, respectively. The other, one of the pronounced pertussis cases, had 88% of polynuclear neutrophiles, 6.5% of lymphocytes, and 5.5% of large mononuclear and transition forms.

It remains to compare the results obtained in whooping-cough with those of other diseases of children. The material for this purpose is at hand in a paper by Alfred Stengel, M.D., and C. Y. White, M.D., on "The Blood in Infancy and Childhood."⁵ Before proceeding to the comparison, a few words must be said in regard to the classification of the mononuclear leukocytes. In 51 of Stengel's and White's 55 counts, the large mononuclear and transition forms are above normal; in 1 case as high as 50%, and in 35 of the 55 counts the lymphocytes are below normal. The average of the 55 counts is 15.5% of large mononuclears and 23% of lymphocytes, together 38.5%, which is very close to the normal. As the normal percentage of the large mononuclear and transition forms is given by the books as from 2% to 8%, and they rarely exceed the latter figure, the average percentage of 15.5% of Stengel's and White's cases is too high, is not in keeping with their other figures, and must have resulted from a failure to discriminate the large lymphocytes from the large mononuclear and transition forms by ignoring their staining and morphologic characteristics.

The large concentrically-situated basophilic nucleus surrounded by a narrow rim of more intensely basophilic protoplasm (eosinate of methylene-blue), regardless of the size of the whole cell, serves to distinguish the lymphocyte from the feebly basophilic and eccentrically situated nucleus within the larger and still feebler basophilic mass of protoplasm of the large mononuclear leukocyte, and the indented or constricted nucleus of the intermediately basophilic nucleus and protoplasm of the transition form. Individual cells frequently occur, from poor staining or other reasons, that have to be classified at random. For instance, in one of my cases (No. 5 of

the first series) it was impossible to classify any of the large mononuclears as large lymphocytes, although two specimens were gone over carefully for the purpose. As a matter of interest, in another case (No. 9 of the first series) all of the large mononuclears were distinctly transition forms.

In order to utilize the material of Stengel and White it is necessary to classify the lymphocytes, the large mononuclear leukocytes, and the transition forms under one heading, simply as mononuclear leukocytes. I do this the more readily, as I believe it would be good practice to do it always in order to simplify counting and reduce the liability of error. Therefore, hereafter only two forms of leukocytes will be referred to: the polynuclear neutrophilic leukocyte, and the mononuclear leukocyte, the latter including the lymphocytes, the large mononuclear leukocytes, and the transition forms, the combined percentage of which would hardly reach 35% in the healthy human adult and in children would not exceed 40%.

Dividing Stengel's and White's 55 counts in various diseases of children into two classes, one in which there is an approximately normal leukocytosis, and the other in which there is a hyperleukocytosis, including all cases with 10,000 leukocytes and less in the former, and all cases with more than this number in the latter, there are 14 counts with an average leukocytosis of 7,072, showing differentially polynuclear neutrophilic leukocytes, 62.1%; mononuclear leukocytes, 34.3%.

There are 41 counts with an average hyperleukocytosis of 23,430, showing polynuclear neutrophilic leukocytes, 58.6%; mononuclear leukocytes, 38.4%.

The average of the whole 55 counts shows a hyperleukocytosis of 19,267, with polynuclear neutrophilic leukocytes, 60%; mononuclear leukocytes, 38.5%.

It will be noticed how uniform these percentages are under the varied conditions, the presence or absence of a hyperleukocytosis not affecting them very appreciably.

Among Stengel's and White's cases are 3 of pertussis, to which I add 5 of my own, in all of which the total white blood count was made; it ranged from 4,288 in the lowest to 34,667 in the highest, and gave an average hyperleukocytosis of 13,315. There are 18 cases (21 counts) in which a differential count was made, 3 of Stengel's and White's and 15 of my own. The percentage of the mononuclear leukocytes is higher than the polynuclear in all but 3 of the cases, the average being: Polynuclear neutrophilic leukocytes, 41.4%; mononuclear leukocytes, 55.4%.

It is particularly interesting that the mononuclear leukocyte percentage exceeds the polynuclear neutrophilic in these cases of pertussis almost as much as the polynuclear neutrophilic exceeds the mononuclear in all the other diseases of children.

Among Stengel's and White's cases there are a number, beside the cases of pertussis, in which the percentage of the mononuclear leukocytes exceeds that of the polynuclear neutrophilic; notably 1 of 10 counts of pneumonia, 2 of 10 counts of typhoid fever, 2 of 4 counts of varicella, 1 of 3 counts of enteritis, 2 of rickets, 1 of eczema, 1 of focal epilepsy, 1 of convulsions, 1 of spastic cerebral palsy, and 1 of pleural effusion. There are 16 such counts, with an average whole number of leukocytes of 17,448; polynuclear neutrophilic leukocytes, 39.8%; mononuclear leukocytes, 59.9%. The remaining 39 counts have an average hyperleukocytosis of 19,987, divided as follows: Polynuclear neutrophilic leukocytes, 68.6%; mononuclear leukocytes, 29.7%. It is interesting to note how nearly reversed the figures are for the two kinds of leukocytes, and that they confirm the occurrence of a lymphatic or mononuclear leukocytosis.

Other causes contributing to an increase of the lymphocytes (aside from lymphatic leukemia) are cholera infantum, rickets, intestinal diseases, scurvy, the anemias of children, inanition, and hereditary syphilis.

Calmette⁶ states that a relative mononuclear leukocytosis is found in the blood in chronic diseases, as leukemia, pertussis, sarcomatosis, tuberculosis, syphilis, malaria, smallpox, varioloid, varicella, and the mineral poisons. Chronic diseases of the nervous system cause lymphocytosis (tabes, general paralysis, syphilitic meningitis, etc.).⁷

The disease with which whoopingcough is most likely to be confounded is bronchitis. Stengel and White report 6 cases; their average leukocytosis is 12,911, divided as follows: Polynuclear neutrophilic leukocytes, 68%; mononuclear leukocytes, 29.9%. A marked contrast to the blood findings in pertussis.

Their 10 cases of pneumonia (as in pneumonia in the adult) have an average hyperleukocytosis of 40,420, with the same distribution of the leukocytes as in bronchitis, namely: Polynuclear neutrophilic leukocytes, 68.1%; mononuclear leukocytes, 31.2%.

Contrast these figures with those prevailing in 2 cases of pertussis pneumonia observed by Cabot, presenting the most marked absolute lymphocytosis known to him (excluding leukemia); 1 had white cells up to 94,600, 69% of which were lymphocytes; the other, white cells 103,000, 64.5% lymphocytes.

These few cases of pertussis do not confirm the existence of a hyperleukocytosis as a constant characteristic of the catarrhal stage of the disease, although almost all of them confirm the presence of an increased percentage of lymphocytes. It is very probable that the condition of the child's nutrition is the potent factor influencing the presence or absence of a hyperleukocytosis, and that a moderate falling off causes a change in the relative distribution of the various forms of leukocytes themselves more readily than it does a marked increase in their numbers, and for this reason results obtained from patients in private practice are not always in keeping with those in dispensary and hospital practice. There seem to be good grounds to conclude that an increased percentage of lymphocytes, at least equaling or exceeding that of the polynuclear neutrophilic cells, is a valuable diagnostic aid in whoopingcough before the character-

SIXTEEN CASES OF PERTUSSIS.

No. of case.	Age.	Whole number of leukocytes.	Polynuclear neutrophils.	Lymphocytes.	Large mononuclear and transition forms.	Eosinophils.	Mast-cells.
1	5½ years.	11,000	44.0%	51.0%	2.0%	2.5%	0.5%
2	4 "	9,454	52.3%	40.4%	3.8%	3.3%	0.2%
3	3 "	12,000	46.4%	47.9%	4.8%	0.9%	0. "
4	3 "	.....	45.0%	47.0%	7.5%	0.5%	0.0%
5	5 "	.....	45.0%	41.0%	12.8%	1.0%	0.2%
6	5 "	.....	33.2%	60.8%	3.9%	1.6%	0.5%
7	1½ "	.....	35.5%	58.7%	5.0%	0.6%	0.2%
8	1 "	.....	34.0%	62.0%	3.5%	0.4%	0.1%
9	2 "	.....	34.2%	51.5%	3.3%	4.5%	1.5%
10	4 "	.....	40.3%	55.1%	4.0%	0.6%	0.0%
11	2 "	.....	33.0%	64.0%	2.5%	0.2%	0.0%
12	10 "	.....	40.8%	56.2%	2.5%	0.5%	0.0%
12	10 "	6,752	45.3%	46.8%	6.2%	1.5%	0.2%
13	6 "	4,288	53.4%	43.0%	1.3%	2.0%	0.3%
13	6 "	.....	48.4%	48.4%	2.6%	0.3%	0.3%
14	9 months.	.....	40.0%	50.5%	6.2%	3.0%	0.3%
15	4½ years.	.....	57.3%	33.6%	4.5%	4.0%	0.3%
15	4½ "	.....	47.3%	40.5%	8.0%	4.0%	0.2%
16	3 "	.....	31.7%	65.4%	2.1%	0.6%	0.2%

FOUR CASES (BRONCHITIS) PROVING NOT TO BE PERTUSSIS.

No. of case.	Age.	Whole number of leukocytes.	Polynuclear neutrophils.	Lymphocytes.	Large mononuclear and transition forms.	Eosinophils.	Mast-cells.
1	8 years.	.....	60.2%	27.3%	9.0%	2.0%	1.5%
2	11 "	.....	61.3%	30.5%	4.7%	3.2%	0.2%
3	7 "	.....	50.8%	36.5%	9.8%	2.4%	0.5%
4	7 months.	.....	53.7%	38.0%	8.0%	0.3%	0.0%

The number of leukocytes counted was never less than 600, and from that number to 1,200.

TABLE OF AVERAGE LEUKOCYTOSIS AND AVERAGE PERCENTAGE OF NEUTROPHILES AND MONONUCLEARS IN SUNDRY DISEASES OF CHILDREN.

Disease.	Reporter.	Number of cases.	Average leukocytosis.	Neutrophiles.	Mononuclears.
Pertussis.....	S. and W.	3	21,009	37.1%	59.4%
"	A. W.	5	8,698	48.3%	49.4%
"	"	11	"	39.0%	59.5%
" in adults.....	"	3	"	73.4%	25.4%
Bronchitis.....	"	4	"	55.2%	40.9%
"	S. and W.	6	12,911	68.0%	29.9%
Pneumonia	"	10	40,420	68.1%	31.2%
Typhoid fever.....	"	10	13,709	62.5%	37.1%
Varicella.....	"	4	11,766	54.4%	44.7%
Enteritis.....	"	3	23,515	54.8%	44.7%
Acute rheumatism	"	1	7,022	59.0%	40.0%
Pleural effusion.....	"	1	13,610	37.2%	61.6%
Rachitis	"	2	20,734	43.3%	54.5%
Noma	"	3	19,829	52.4%	40.8%
Tuberculous caries with cold abscess.	"	1	20,573	70.3%	28.8%
Chronic meningitis.....	"	1	21,333	66.0%	33.8%
Eczema.....	"	3	19,849	52.4%	40.8%
Mitral heart disease.....	"	2	17,122	63.5%	35.2%
Local epilepsy.....	"	1	11,911	48.5%	50.3%
Convulsions.....	"	1	8,800	42.8%	56.8%
Spastic cerebr'l palsy	"	1	15,808	40.6%	59.0%

TABLE OF AVERAGES OF S. & W.'S 55 COUNTS, SHOWING THE RELATION BETWEEN THE NEUTROPHILES AND MONONUCLEARS UNDER VARIOUS CONDITIONS.

Condition.	Whole number of leukocytes.	Neutrophiles.	Mononuclears.
Averages of all 55 counts.....	19,267	60.0%	38.5%
Averages of 14 counts with an approximately normal leukocytosis.....	7,072	62.1%	34.3%
Averages of 41 counts with a hyperleukocytosis.....	23,430	58.6%	38.4%
Averages of 39 counts in which the neutrophiles exceeded the mononuclears	19,987	68.6%	29.7%
Averages of 16 counts in which the mononuclears exceeded the neutrophiles.....	17,448	39.8%	59.9%

istic symptoms of the disease make the diagnosis easy. But like the doctrine of polynuclear leukocytosis in general, the figures are more convincing in the mass than when considered individually. Individual cases always occur showing exceptions to the general rule, and for this reason the results of blood examinations cannot be taken as an absolute diagnostic factor, but must always be considered in connection with all the other features of an individual case.

Since this paper was written I have examined an additional case:

A boy, aged 3, a child of well-to-do parents. He had been coughing for a week. Polynuclear neutrophiles, 31.7%; lymphocytes, 65.4%; large mononuclear and transition forms, 2.1%; eosinophiles, 0.6%; mast-cells, 0.2%. This is the only one of my cases in which cover-slips showed decided evidence of a hyperleukocytosis. He had since developed a typical whoopingcough.

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- ² From an extract in the Phila. Med. Jour., March 19, 1902.
- ³ Archives de Méd. des Enfants.
- ⁴ Extract from Maryland Med. Journal.
- ⁵ Univ. of Penna. Medical Bulletin, November, 1901.
- ⁶ Bulletin Médical, No. 80
- ⁷ From an ext. act in the Phila. Med. Jour., May 7, 1902.

A CASE OF INFECTION WITH THE DOUBLE-PORED DOG TAPEWORM (DIPYLIDIUM CANINUM) IN AN AMERICAN CHILD.

BY

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Among the specimens of parasites recently sent to the Bureau of Animal Industry for examination is one (B. A. I., No. 3,305) which is of considerable interest. This is a double-pored tapeworm which was passed by a child, and which belongs to the species *Dipylidium caninum*, a very common parasite in dogs and cats, but comparatively rare in man. According to Dr. George Duffield, of Detroit, Mich., to whose courtesy we are indebted for this specimen, the worm was discharged by a child 16 months old.

The parasite in question belongs to the family Tæniidae, subfamily Dipylidiinæ, and is characterized as follows:

SUBFAMILY DIPYLIDIINÆ STILES, 1896.

Subfamily Diagnosis.—Tæniidæ: Suckers unarmed, Rostellum armed, rarely absent. Genital pores lateral, single, or double and opposite. Genital organs of each segment in single or double series. Uterus usually divides up into egg sacs, or disappears entirely so that the eggs lie free in the parenchyme. Eggs with thin transparent shells, with or without appendages. Larval forms (cysticeroides) in arthropods or mollusks. Strobila in mammals, birds, and reptiles.

Type genus: *Dipylidium* Leuckart.

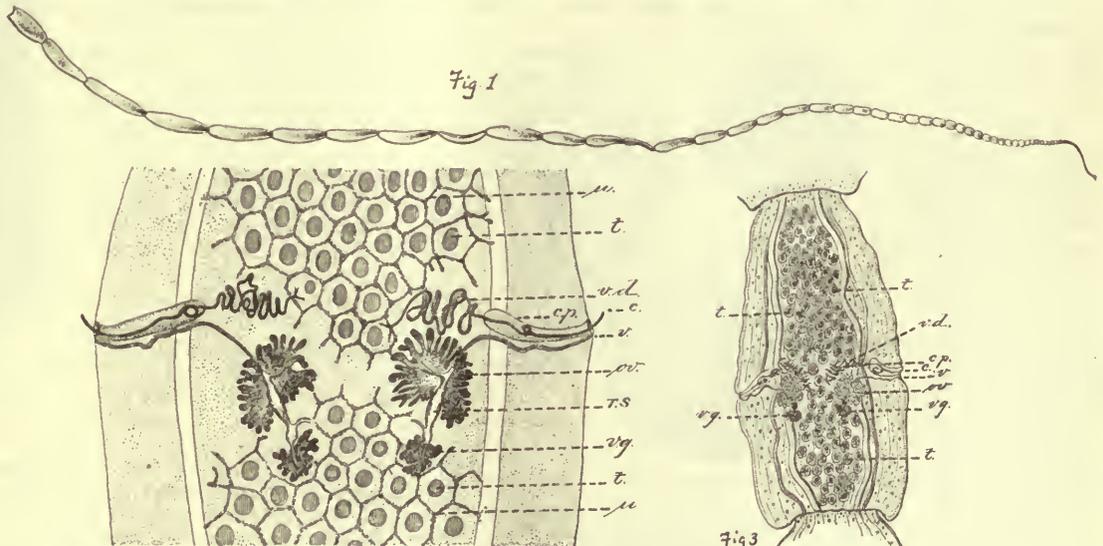


Fig. 1.—Adult strobila of the double-pored dog tapeworm (*Dipylidium caninum*). Original.
Fig. 2.—Mature segment of same, showing the anatomy: c., cirrus (penis); c. p., cirrus pouch; ov., ovary; r. s., receptaculum seminis; t., testicles; u., uterus; v., vagina; v. d., vas deferens; v. g., vitellogene gland. x 25. After Neumann in Rallillet, 1893, page 239, Fig. 188.
Fig. 3.—Gravid segment of same, lettering the same as in Fig. 2. After Diamare, 1893, pl. I, Fig. 1.

GENUS DIPYLIDIUM² LEUCKART, 1863.

Generic Diagnosis.—Dipylidiinæ: Rostellum retractile, armed with several rings of alternating hooklets

¹ Transferred Aug. 16, 1902, to U. S. Public Health and Marine-Hospital Service as Chief of Division of Zoology.
² Synonyms: *Dipylidium* Leuckart, 1863; *Microtenia* Sedgwick, 1884.

which usually possess a discoidal base. Suckers unarmed. Genital pores double and opposite. Genital organs in double series. Testicles very numerous, in median field. Ovary bilobed. Vitellogene glands distal of ovary. Uterus at first represents a reticulum, in the meshes of which are situated the testicles; later it breaks

up into egg-sacs enclosing one or several eggs. Eggs with double shell. Adults parasitic in mammals.

Type species: *Dipylidium caninum* (Linnaeus).

DIPYLIDIUM CANINUM¹ (LINNAEUS, 1758).

Specific Diagnosis.—*Dipylidium*: Strobila 15 to 35 cm. long; head small, globular; rostellum club-shaped, with 3 to 4 transverse rows of hooks (about 60 in number) of rose-thorn form; the anterior hooks 15 μ ; the posterior hooks 6 μ ; suckers relatively large, rather elliptical. Segments 80 to 120 in number; gravid

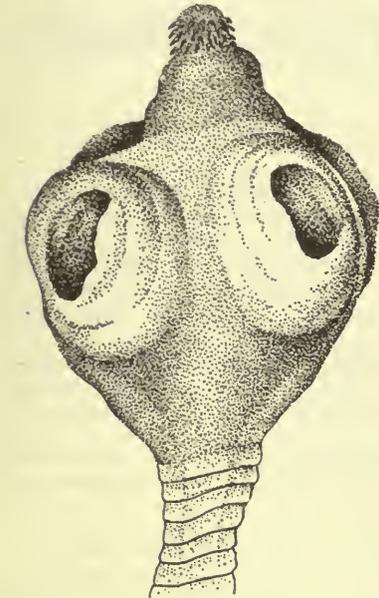


Fig. 4.—Head of same, showing four rows of rose-thorn hooks on the rostellum and four unarmed suckers. Original.

segments 8 to 11 mm. long, 1.5 to 3 mm. broad, often reddish brown in color. Genital pores at equator or in posterior half of segment; uterus forms egg-capsules, each containing 8 to 20 eggs; eggs globular, 43 to 50 μ in diameter; eggshell thin; oncosphere 32 to 36 μ .

Hosts.—Adult in dogs, cats, and man; larva in lice (*Trichodectes canis*) and fleas (*Pulex serraticeps*, *P. irritans*).

While this is one of the smaller tapeworms, it cannot be looked upon as harmless, for it sometimes burrows into the intestinal mucosa making a tunnel-like channel, through which the segments are pulled much like a train of cars passing through a tunnel.

Clinical Diagnosis.—In diagnosis, search should be made

in the feces for the peculiar elongated elliptical tapeworm segments. Microscopic examination of the feces for eggs is less certain than in case of infection with *Tenia saginata*, *T. solium*, or *Dibothriocephalus latus*, since *Dipylidium* is much smaller and less prolific than any of these three forms.

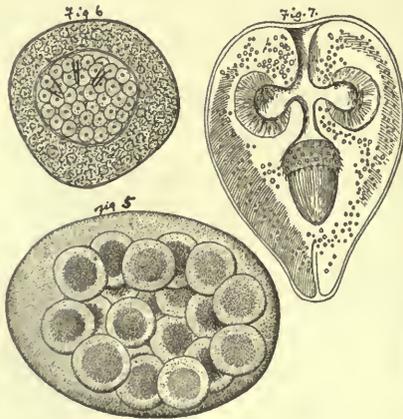


Fig. 5.—Egg packet of same. Greatly enlarged. Original.

Fig. 6.—Egg of same. Note the six hooks in the embryo. Greatly enlarged. Original.

Fig. 7.—*Cryptocystis trichodectis*, the larval (infection) stage of *Dipylidium caninum* as found in the flea. After Leuckart, 1886, page 847, Fig. 348.

The eggs of *Dipylidium caninum* are entirely different from those of any *Tenia*. In the genus *Tenia* we find a thick striated inner shell (embryophore), while in *Dipylidium* the inner shell is thin. The six-hooked embryo, characteristic of all tapeworms, is observed in the egg.

Physicians who wish to become familiar with *Dipylidium caninum* can easily obtain specimens by examining several cats or dogs, as this tapeworm is very common in these animals. For a zoological discussion and bibliography of the genus *Dipylidium*, the reader is referred to Diamare, 1893, II genre *Dipylidium* Lt. (Atti R. Accad. fis. e mat. di Napoli, 2. s., v. 6 (7), presentata 13 maggio, 1893. Reprinted as separate, 31 pp., pls. 1-3, with 50 figs. 4°. Napoli, 1893.)

SPECIAL ARTICLES

HOSPITAL WORK OF DR. CARL LAUENSTEIN.

BY

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of Chicago.

One of the best known names in the medical and social circles of Hamburg is that of Dr. Carl Lauenstein. As a surgeon his name is familiar wherever surgery is practised. His contributions to surgical literature have been many and of great scientific and practical value. His voice is heard at every annual meeting of the German Surgical Society, and never fails to command earnest attention. Nearly every volume of the transactions of this society contains an account of his activity as a surgeon and scientist. He speaks French and English fluently, and is well versed in everything pertaining to foreign medical literature. His personality is a striking one. He stands six feet four in his stockings, erect as the fir tree of his native home, and is endowed with the physical strength of a giant. A man of ordinary size standing or walking aside of him experiences a keen sense of his physical insignificance under the shadow of his towering height. He is a typical blonde, and his large azure-blue eyes reflect the nobility of his soul. He has reached the fifty-second milestone of his busy, useful life. The son of a clergyman, he received the most careful training from early childhood for the profession of his choice. He studied medicine at the University of Göttingen, and was the favorite pupil of the late Professor William Baum. Lauenstein respected and loved his teacher of surgery. The genuine piety, profound learning and honest convictions which characterized the life and work of Professor Baum made a deep and lasting impression on his pupil, and undoubtedly had much to do in molding his subsequent professional career. Lauenstein loves to relate little incidents in the life of his master. Many of these little stories reflect the surgical practice of those days. On one occasion an assistant had used a probe in exploring a foul abscess; the professor, who wished to examine a recent wound, called for the instrument, and wishing to impress his assistants with the importance of surgical cleanliness, wiped the probe between his lips and then with a clean and easy conscience used it upon his patient. Lauenstein's early student days were eventful. At the outbreak of the Franco-Prussian war he was a medical student at Göttingen. He, like most of the university students, promptly volunteered



Carl Lauenstein and his smaller brother as privates during the Franco-Prussian war.

¹Synonyms: *Tenia canina* Linnaeus, 1758; *T. moniliformis* Pallas, 1781; *T. cucumerina* Bloch, 1782; *T. elliptica* Batsch, 1786; *T. (Dipylidium) caninum* (Linnaeus) Leuckart, 1893.

and entered the military service as a private of a musketeer regiment. During the short, historic military career he wrote one and often two letters every day to his anxious, devoted, affectionate parents. These letters were preserved, and in 1895 he published them in book form and presented this souvenir of the war to his mother on Christmas day. How his aged mother appreciated this gift only a mother can describe who has passed through the same bitter experience. Lauenstein was a faithful, heroic soldier. He was in action eleven times, and had many narrow escapes, but Providence deviated the bullets aimed at him. His patriotism and sense of duty knew no bounds. On his return home one of his friends furnished the explanation why he escaped uninjured. He said that during one of the battles a Frenchman drew his bead on him at close range, the next moment he dropped his musket lower, fully convinced that other comrades had selected the same conspicuous target, and not wishing to waste ammunition, fired at a man of ordinary size. In one of his letters to his parents he said that if he were permitted to return home alive he would never return to France, where he experienced all the privations meted out to the private soldier during a forced campaign under the most distressing climatic conditions. He failed to keep this promise. He recently made a bicycle tour through France with his oldest son, a law student, and visited all of the familiar battlefields where he served his country so well 32 years before. Such men should be rewarded with a jeweled cross of gold instead of one of iron. Dr. Lauenstein's opportunities for making practical use of his surgical knowledge and skill have been immense. He is surgeon-in-chief to two of the Hamburg hospitals and at the same time enjoys a lucrative private practice.

Bethesda Hospital.—This is a private hospital in charge of deaconesses. It contains 100 beds, of which 50 are occupied by surgical patients. Lauenstein is the very soul of this institution. It is here where his surgical methods can be studied to greatest advantage. A new addition is nearly completed and will afford the necessary additional room for the increasing demands on the hospital. The patients are divided into three classes. The first class patients pay eight marks a day, the second five. Many of the third class are received as charity cases. The wealthy citizens contribute liberally toward the improvements and running expenses of this excellent institution. The operating-room is small, unpretentious, but the plain, simple facilities for asepsis are utilized in such a practical manner that the visitor becomes convinced that the patients who are operated upon have received all the essential prophylactic care that modern surgery can offer against infection. Lauenstein places more weight on air infection than most surgeons. One of his requirements in entering the operating-room is careful wiping of the shoes, a task which is performed in a most conscientious manner by a male servant. Gloves are used in operations upon septic cases, and then only for the purpose of protecting the hands against contamination. Instead of a mask the hair and beard are washed and are kept moist with an antiseptic solution. The operator is assisted by the house surgeon and three Sisters. One of the Sisters administers the anesthetic, usually chloroform, by the drop method; another has charge of the instruments, and the third one handles the gauze, sponges and dressing material.

Lauenstein's Method of Hand Disinfection.—Lauenstein has made disinfection of the skin a special study for several years. Some three years ago he reported upon the results of his scientific investigations on this subject. He made use of all then known methods of disinfection and then removed a small particle of skin from the disinfected surface and under strict aseptic precautions transferred it to a nutrient medium. Without exception microbes developed, which led him to the conclusion that absolute asepsis cannot be obtained by any of the methods so far employed. These observations taught him the necessity of combining aseptic with antiseptic measures. He irrigates wounds with a 2% solution of lysol. His directions for hand disinfection are the following:

1. Softening and washing of the hands without brush in warm water with soap, frequently changed until the water remains clean.
2. Cleansing and trimming of finger nails.
3. Renewed washing in warm water without brush.

4. Final cleansing in warm water and soap with use of sterile brush.

5. Drying with sterile towel.

6. Thorough immersion and scrubbing of fingers and hands with 96% alcohol with use of sterile gauze sponges with special reference to finger nails and subungual spaces continued for three minutes. The field of operation is prepared the evening before operation and the surface covered with a compress saturated with a solution of salicylic acid. Before the operation the final disinfection is made.

Lauenstein's Method of Catgut Sterilization.—Lauenstein has given the different methods of catgut sterilization a fair trial and after finding them unsatisfactory has adopted the following method:

The catgut, free from fat and sterilized by dry heat, is immersed for eight days in 50% creolin-vasogen. In this very active bactericide the catgut softens and swells and is saturated with the creolin-vasogen throughout. It is then placed in 2% salicyl-alcohol to which 10% of glycerin is added. In this solution the threads are often turned over and in this solution it retains its firmness and tensile strength. Before use it is immersed in .5% formalin-alcohol. He has used catgut prepared by this method for six years with perfect satisfaction. The bacteriologic examinations of this catgut made frequently by Professor Dunbar have always proved its absolute sterility. Silk used for superficial sutures is sterilized by boiling. Dr. Lauenstein regards reliable catgut as the ideal material for ligatures and buried sutures. He has in his service a large gynecologic material. One day he examined three patients under anesthesia and dictated the following diagnoses: Subserous myofibroma, solid tumor of ovary, large ovarian cyst. All of these patients were operated upon three days later. On the day of my visit to this hospital he performed the first operation after his return from his summer vacation.



Dr. Carl Lauenstein.

Tuberculosis of the Knee-joint; Amputation of Thigh After Resection of Joint had Failed.—The patient was a woman, aged 56, who entered the hospital two months ago, suffering from advanced tuberculosis of the left knee-joint. Typical resection was made with faint expectation of a successful result owing to her advanced age and the extent of the disease. The wound healed only in part and the extensive recurrence left no doubt concerning the propriety of resorting to a mutilating operation. Patient was anemic and considerably emaciated; chloroform anesthesia; elastic constriction at base of thigh; long anterior and short posterior cutaneous flaps; remaining soft tissues were divided down to the bone with one sweep of the knife; soft tissues were retracted with two folded gauze bandages. After reflection of periosteum with elevator cross section of bone with a bow saw, the femoral artery and vein were isolated separately and tied with catgut. Careful search was made for the intramuscular branches, which were seized with hemostatic forceps. So thoroughly was this done that when the constrictor was removed no further use of the forceps became necessary. The flaps were united with silk sutures leaving both angles of the wound open for gauze drainage. The wound was thoroughly flushed with a 2% solution of lysol before and after suturing. A few layers of loose sterile gauze, next a thick layer of aseptic absorbent cotton, a cushion of wood wool and a second layer of cotton held in place with a gauze roller, which also included the pelvis, constituted the dressing.

In the absence of unfavorable symptoms the first dressing is not disturbed for two weeks. With the methods he now employs Dr. Lauenstein looks with confidence to his results.

Harbor Hospital.—This is a government hospital built and supported by the city of Hamburg. Dr. Lauenstein is the surgeon-in-chief, assisted by four salaried resident physicians. The hospital is intended for emergency cases, and its interior construction corresponds with this purpose. The wards are well furnished, well lighted, and well ventilated. It contains a

motley population, as it is likewise the refuge for the sick and injured sailors of all nations who frequent the great mercantile harbor of Hamburg.

This is the place in Hamburg to make a practical study of accidental surgery. Among the injuries brought here almost daily are fractures, dislocations, sprains and burns; stab and gunshot wounds are comparatively rare.

The dressing and operating-rooms are constructed upon the most improved plans, and are splendidly equipped. With all such conveniences it must be a source of gratification and pleasure to practise emergency surgery. The Röntgen apparatus and rooms are in constant use, and in charge of an expert. A complete outfit for photography turns out daily the most interesting illustrations of fractures, dislocations, and other injuries. Dr. Lauenstein is now making a special study of spiral fractures. He has the requisite material at his disposal to elucidate this subject from a scientific as well as a practical standpoint. Much has been said and written concerning this particular anatomic form of fractures, but more light is needed to comprehend fully the mechanism of their production. A number of beautiful Röntgen illustrations were shown of spiral fracture of the tibia and fibula. In fracture of both bones, the seat of the injury involved the lower part of the tibia, while the fibula yielded near the upper extremity. Reduction and retention by proper means of fixation offer no particular difficulties, and the results are usually very satisfactory. Dr. Lauenstein intends to present the paper he is preparing on the nature and treatment of this fracture on the occasion of the eightieth birthday of his Excellency Professor von Esmarch, which will be celebrated in the birthplace of that distinguished surgeon next January. The paper will be profusely illustrated, and will be looked for with interest by the profession, as it will clear up a number of doubtful points in the etiology of spiral fractures. The nursing in this hospital in the male wards is done exclusively by trained male nurses. The scrupulous cleanliness throughout the entire institution reflects credit upon the director as well as upon the efficient and well-organized nursing force.

The city morgue is located in the hospital grounds. Here is a good place to make a practical study of legal medicine, as a number of postmortems are made daily by an expert, and the causes of death, accidental and otherwise, are investigated with a view of satisfying all legal requirements.

The detention department is an interesting part of the hospital. This serves as a temporary asylum for cases of acute insanity, delirium tremens, etc. Violent patients are confined in single rooms having an iron door, which is locked. The room contains nothing but a leather-covered mattress for a bed. About six cells are always occupied by delirium tremens patients. In one cell we found a man in shirt sleeves facing the rear wall reaching with trembling hands for red currants which he saw distinctly on the bare white wall but always eluding his greedy grasp. Lauenstein has abandoned the use of alcoholic stimulants in the treatment of delirium tremens after a trial of over 20 years. He has become satisfied and firmly convinced that recovery takes place more speedily without than with alcohol. He looks upon the disease as an intoxication and reasons very properly that the sooner the cause is removed the more sure and prompt will be the recovery. So long as the patients are violent they are confined in a cell. Small doses of morphia and chloral hydrate are given to procure sleep. Much stress is laid on the administration of concentrated fluid nourishment. If on admission of the patient there is reason to believe that the stomach contains alcohol it is evacuated by siphonage. The acute symptoms usually subside in three or four days, when the patient is transferred to an adjoining ward, where with other convalescents he receives the appropriate after-treatment and where he remains until recovery is complete. It is said that most of these patients return about every six months with the same disease and pass through the same course of treatment. In Germany, like elsewhere, delirium tremens is caused by the excessive use of spirits; beer drinkers seldom succumb to this disease.

The medical tourist visiting Hamburg should not neglect to make a visit to the Harbor Hospital, as he will be sure to find here many things of the utmost scientific and practical interest

and will always meet a cordial reception by its genial medical director, Dr. Carl Lauenstein.

On board S. S. "Blücher," August 25.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

[January 3, 1903. [Vol. XL, No. 1.]

1. A Contribution to the Subject of Radiotherapy and Phototherapy in Carcinoma, Tuberculosis and Other Diseases of the Skin. JAMES NEVINS HYDE, FRANK HUGH MONTGOMERY and OLIVER S. ORMSBY.
2. Notes on X-ray Treatment of Cancer, with Report of Cases. G. E. PFAHLER.
3. The Technic of X-ray Therapy as Applied to Diseases of the Skin. LOUIS E. SCHMIDT.
4. Treatment of Fractures of the Neck of the Femur. CHARLES E. THOMSON.
5. The Treatment of Transverse Fracture of the Patella by Subcutaneous Purse-string Sutures. JOHN B. ROBERTS.
6. Uncinariasis or Ankylostomiasis, with the Report of a Case. JOSEPH A. CAPPS.
7. Prognosis in Mental Diseases. FRANK PARSONS NORBURY.

1.—Radiotherapy and Phototherapy in Diseases of the Skin.—Hyde, Montgomery, and Ormsby briefly discuss the phenomena of heliotropism in plants and animals, and the technic of radiotherapy, and report cases, illustrating them by a large number of cuts. They believe radiotherapy and phototherapy superior to any other treatment in tuberculosis of the skin, and phototherapy has given them the most satisfactory results in lupus erythematosus. In superficial carcinoma over a large area they prefer radiotherapy to all other methods of treatment. For circumscribed growths they recommend excision, followed by x-rays. If inflammation is excited it may encourage extension of the growth. The value of radiotherapy has been established in hypertrichosis, psoriasis, acne rosacea, folliculitis, and suppurating wounds. It should be reserved, however, for cases in which other treatment has failed. In tuberculosis phototherapy acts as rapidly as radiotherapy and with better cosmetic effects. [H.M.]

2.—Röntgen Ray Treatment of Cancer.—Pfähler briefly reviews the histories of a few cases, two illustrating the danger of doing too much instead of giving nature a chance when repair has been well started. He prefers the coil somewhat to the static machine, a low vacuum tube for superficial and a higher for the deeper structures, placing the tube near the part and carefully watching it. Exposure should be from 5 to 20 minutes every second or third day. Lead foil between layers of adhesive plaster best protects the surrounding tissue. The skin should be carefully reddened without causing ulceration. The time required to cure superficial cancer is two to six months. The open surface should be dusted with equal parts of starch, boric and salicylic acids. [H.M.]

3.—Technic of Röntgen Ray Therapy in Skin Diseases.—Schmidt discusses the preparation of the patient, trials to detect idiosyncrasy, how to measure the energy, how to judge the strength of a tube, the vacuum and its regulation, the relation of heat rays to Röntgen ray, and the position of the tube. The dosage may be regulated by increasing or decreasing the rays or applying them in a more or less intense manner. The former depends on the tube, the latter on the distance. [H.M.]

4.—Fracture of the Neck of the Femur.—Thomson thinks surgical authors have been rather discouraging to the general practitioner on this subject, that firm union and useful limbs may be anticipated, that age is not a counterindication to this, that the best treatment is reduction and immobilization, that this is best accomplished under anesthesia by the plaster-of-paris spica, that immobilization should last for a long time, and three months elapse before allowing weight on the limb. Operative treatment in old and neglected cases has succeeded beyond all expectation. [H.M.]

5.—See American Medicine, Vol. III, No. 25, p. 1042.

6.—Uncinariasis or Ankylostomiasis.—Capps describes the species affecting the lower animals and man, and reports in detail the first case of *U. duodenalis* infected in Panama, and in brief the 51 cases heretofore noted in the United States. The disease is common in our new possessions. It was probably imported into Panama by Italian laborers. Infection usually

occurs by eating with unclean hands. Examination of the feces is the only certain method of diagnosis. He emphasizes the importance of prophylaxis during the building of the canal. [H.M.]

7.—See *American Medicine*, Vol. III, No. 25, p. 1057.

Boston Medical and Surgical Journal.

January 1, 1908. [Vol. CXLVIII, No. 1.]

1. Notes on Multiple Primary Tumors. PAUL G. WOOLLEY.
2. Percentage Modification of Milk in Infant Feeding. MAYNARD LADD.
3. Foot-and-Mouth Disease. LANGDON FROTHINGHAM.
4. Chlorid of Ethyl as a General Anesthetic. CHARLES GREENE CUMSTON.

1.—**Multiple Primary Tumors.**—Woolley gives a technical discussion, which while interesting and philosophic, does not lend itself to valuable abstract. The pivotal idea is that primary tumors, malignant, benign, or mixed, may arise independently in the paired organs of the body, in functionally unrelated organs, or in the same organ. That tumors arise secondarily by metastasis is of course beyond a doubt, but it is too generally assigned as a cause for separate tumor growths. In conclusion, he begs observers to watch for cases of multiple primary growths, and record with them careful studies of the general conditions, as well as of the special ones surrounding the patients. Such records in cases of tumors in paired organs, such as the breasts, adrenals, ovaries, etc., would be of the greatest interest and value in determining whether metastasis or biologic change is the more obvious factor in the production of such cases. [A.B.C.]

2.—**Modification of Milk.**—Ladd gives tables which put the percentages of the ingredients in various combinations in simple and practical form in order that intelligent percentage feeding may be more generally adopted. As breast milk varies from feeding to feeding its average analysis is of but little aid in adapting cow's milk to the individual infant. Each case is a problem in itself. The tables given are those used by the writer in teaching and in his hospital work and which he has had printed on cards that can be carried in the pocket. [H.M.]

3.—**Foot-and-Mouth Disease.**—Frothingham describes this most contagious of all animal diseases, recently reintroduced into this country. Where it is prevalent the financial loss may reach far into the millions. The vesicles which form contain the virus. Men who have been much exposed become infected. The mortality is low in animals and is seldom fatal in man, except among children. The special organism of the contagion is unknown. A temperature of 80° C. will render milk harmless. Infected straw will preserve virulence for two months. Birds may carry infection to distant localities. Immunity left by the disease is of uncertain duration. Immunizing serum has not as yet proved satisfactory. It requires 240 cc. (30 ounces) to protect a cow 14 days. Better results have been obtained with sheep and swine, as 5 to 20 cc. (1½ to 5 drams) will give immunity three or four weeks. [H.M.]

4.—**Ethyl Chlorid as a General Anesthetic.**—Cumston says Newinan used this drug for general anesthesia in 1867, with one death, and necropsy showed a fatty heart in that case. The names of many other surgeons are mentioned as having used it. Malherbe reports having used it in 170 cases, in 140 of which it alone was used, but in the remainder it preceded chloroform; and his enumerated points of advantage are: Small quantities of ethyl chlorid, from 2 to 4 grams (½ to 1 dram) are sufficient for producing a narcosis lasting four minutes, and can be renewed indefinitely; rapidity of the anesthesia (from 25 to 40 seconds); practically no congestion of the face or conjunctiva; never any cyanosis; the period of excitement is reduced to a few defensive movements, and these only in neurotic or alcoholic patients; contraction in the beginning rarely exists and immediately disappears; no trismus, no salivation. Occasionally emission of urine; the age of the patient is indifferent, and no disturbing symptom occurs; vomiting after administration of ethyl chlorid alone does not occur; vomiting occurring after a mixed anesthesia is not frequent, and if present rapidly subsides; rapid return to consciousness. Cumston agrees in the main with the conclusions of Malherbe, and he reports having

used ethyl chlorid preliminary to ether in 153 cases without the slightest accident. For examinations requiring an anesthetic, reduction of dislocations, curetment, etc., the drug is desirable when used alone, but for longer operations its use is in preceding the ether. Usually 10 cc. (2½ drams) are required for complete anesthesia, administered on a close-fitting cone. Only "kelene" or some other pure product should be used. [A.B.C.]

Medical Record.

January 3, 1908. [Vol. 63, No. 1.]

1. How to Study Anatomy. STEPHEN SMITH.
2. Headache in Its Relation to Disorders of the General Health. WILLIAM M. LESZYNSKY.
3. Why the Open-air Treatment of Tuberculosis Succeeds. M. D. VEEDER.
4. Cold and Disease. H. RANDOLPH TUTHILL.
5. The Close Analogy of Trachoma to Adenoids. RALPH OPDYKE.

1.—**How to Study Anatomy.**—Stephen Smith holds that the present plan of teaching anatomy is without system, is unscientific, and calculated to befog the mind of the student. His plan is to have the student first recognize the necessity for an important organ structure or function, and then follow out a plan for devising mechanical arrangements to supply the necessity. The shape and method of locomotion in man presupposes a framework or skeleton, and this in turn a central point first created, and this is assumed to be the seventh dorsal vertebra. The histologic structure of the osseous system is mastered. Next the same appropriate reasoning with reference to the muscular system, the nervous system, digestive and circulatory systems. Considering the subject in this light he has found it a source of delight to the student and instructor. [A.B.C.]

2.—**Headache and General Health.**—Leszynsky describes functional headaches resulting from toxemia or reflex irritation in indigestion, from renal disease, from suboxidation or autotoxemia in rheumatism, from gout, diabetes, the infectious and other fevers, from alcohol, coffee and lead poisoning, from neurasthenia, epilepsy, errors of refraction and insufficiency of the ocular muscles, from nasopharyngeal and uterine disease, from hyperemia or passive congestion of the intracranial circulation, and from anemia. The most important element in treatment is recognition of the cause. [H.M.]

3.—**Why Open-air Treatment of Tuberculosis Succeeds.**—According to Veeder the only attribute of air that concerns us in connection with this subject is its temperature. The sharpness of limitation of temperature effects is well defined as to the tubercle bacillus, its ability to form colonies beginning almost precisely at the temperature of the body and extending to a few degrees above is well known. Feverishness may light up dormant infection, a cold or other slight ailment thus becoming the starting point of the disease. Cattle and birds whose temperature is above that of man are very susceptible, and horses whose temperature is below are immune. The activity of the bacteria keeps up the temperature disturbance and this activity is checked by cold. The use of drugs, etc., for reducing fever should be restudied in connection with the critical temperature points in the growth of bacilli in various diseases. Small variations may have very decided effects. Habitual outdoor living causes large temperature variation so far as the lungs are concerned and small variation as to the rest of the body. It is corroborative of this theory that the greatest benefit from open-air treatment occurs when the disease is in the lungs, and least when it is confined to the bones and other deep-seated tissues. As the tissues are invaded superficially at first entire recovery follows in a considerable proportion of cases. Furthermore, fresh, cool air is bracing, improving nutrition, deepening respiration, thus promoting the local effect and increasing resistance. Warm clothing is of service by enabling colder air to be taken into the lung without depressing effect. [H.M.]

4.—**Cold and Disease.**—Tuthill says cold lowers resistance through its effect on mucous membranes which sift out injurious bacteria. Probably the secretion of the mucous glands exercises a destructive or inhibitive action, and during arrest of secretion the germs develop, the local congestion stimulating growth. When reaction sets in and the glands pour out their

secretion it is too late, the intruders having gained so much headway. When chilling occurs, in addition to stimulants to insure reaction and cathartics to aid elimination of toxic material, an antiseptic spray seems advisable. [H.M.]

5.—The Close Analogy of Trachoma to Adenoids.—Opdyke found that two out of every three "operative" cases of trachoma had adenoids. This was true not only among the children of the East Side, in New York, but likewise on the West Side. This led the author to study the relation between these two affections. Histologically the trachoma nodule is lymphadenoid tissue, which later undergoes fatty degeneration and is replaced by cicatricial tissue. Since adenoid growths precede trachoma, and since the same general hygienic conditions conduce to the production of both, he thinks it fair to assume the relationship, and that the hygiene which cures or prevents adenoid growths of the nasopharynx will likewise prevent trachoma; or as the author aptly states: We have two distinct diseases in different parts of the body and adjacent to different organs, and with their etiologic and pathologic factors very closely analogous. We have proved the adenoid vegetation to be the primary factor, and we should give the benefit of the doubt to the trachoma as being its true sequel. If such is the case, active measures should be undertaken to stamp out, or at least to lessen the prevalence of trachoma by preventing its inception. [A.B.C.]

New York Medical Journal.

December 27, 1902. [VOL. LXXVI, No. 26.]

1. The Operative Treatment of Deformed Fractures as Indicated by the Röntgen Rays. CARL BECK.
2. Retrocecal Abscess Developing Three Years after Removal of the Appendix. THOMAS S. CULLEN.
3. Personal Experience with McGraw's Method of Gastroenterostomy. SAMUEL LLOYD.

1.—See *American Medicine*, Vol. IV, No. 20, p. 766.

2.—Retrocecal Abscess.—Cullen reports a case of retrocecal abscess in a boy of 17, developing three years after the removal of the appendix. An abscess was evacuated and drained at the time of the first operation but recovery followed. About three years later he was injured by a fall and soon had symptoms of an abscess in the right iliac region. At the operation fully 100 cc. (3½ ounces) of offensive pus was evacuated. The abscess lay between the lower surface of the cecum and the parietal peritoneum. [C.A.O.]

3.—See *American Medicine*, Vol. IV, No. 21, p. 804.

Medical News.

January 3, 1903. [Vol. 82, No. 1.]

1. Disappearance of Yellow Fever from Havana, Cuba. MAJOR W. C. GORGAS.
2. Tabes Dorsalis: A Study of 140 Cases of Locomotor Ataxia. JOSEPH COLLINS.
3. A Case of Supernumerary Breast in the Axilla of an Adult Male. FREDERIC GRIFFITH.
4. The Diuretic Action of Rectal Irrigation: The Specific Action of Normal Saline Solution in the Production of Diuresis. ROBERT COLEMAN KEMP.
5. Hematocele. W. C. BOWEN.
6. Why Chloroform Should be Used in Puerperal Eclampsia. DOUGLAS H. STEWART.

1.—Disappearance of Yellow Fever from Havana.—Gorgas runs over the history of yellow fever and points out some of its prominent characteristics, the impossibility of its being carried by fomites, accounting for its absence from Asiatic countries, from high latitudes, and from altitudes in which the *Stegomyia* does not thrive. The disease is either epidemic or endemic, according as to whether the human host becomes exhausted. The disease can be stopped by destroying the *Stegomyia* or getting rid of nonimmunes or preventing infecting mosquitoes from biting the nonimmune, or noninfected *Stegomyia* from biting infected men, or by immunizing all the population. In Rio Janeiro and Havana the disease has been endemic because a large foreign immigration is constantly coming in. Gorgas describes the methods used in Havana to prevent infection of mosquitoes, to destroy those infected, to exterminate the species and to inspect nonimmunes, and the remarkable success attending these measures. With Rio and Havana gone as foci of infection, yellow fever would gradually become extinct. [H.M.]

2.—Tabes Dorsalis.—Of the 140 patients on whom Collins' study is based 124 were men and 16 women; 7.5 to one. The average age at which symptoms appeared was 38½. 68% of the men and 70% of the women gave a definite history of syphilis, and in a large proportion of the others it was probable. Exposure to cold and wet, sexual excesses, occupations that contribute to leg weariness, trauma, alcoholism, poisoning by ergot and lead, the arthritic and neuropathic constitution play an unimportant part in etiology. Syphilis stands out above all others, yet it is not a syphilitic disease in the true sense of the word, either clinically or pathologically, and is not amenable to syphilitic treatment in the slightest degree. Yet the contrast statistics of other nervous diseases seem to show beyond doubt direct pathogenetic relationship to it, tabetics having had syphilis ten times oftener than patients with other nervous diseases, excluding general paresis. It is impossible to determine how many syphilitics develop tabes as the interval is from 5 to 25 years. Its infrequency in prostitutes is probably due to their having reached their destiny before the age at which it usually develops. [H.M.]

3.—Supernumerary Breast in Axilla of a Man.—Griffith presents cuts showing this anomaly in a Bushman. A review of the literature fails to reveal any other well authenticated case. [H.M.]

4.—Normal Saline Solution and Diuresis.—Kemp calls attention to the fact that normal, or decinormal, saline solution has a specific effect on the kidney cells in promoting diuresis and that this occurs, whether the solution is administered by infusion, by hypodermoclysis, or enteroclysis. This takes place even when the quantity used is too small to cause any increase in arterial tension. He describes his experiments upon a dog, by which it was shown that one quart of normal saline solution, plus 5 cc. (1½ drams) of a 5% solution of ferrocyanide of potassium being employed through a recurrent irrigator, and the urine being tested every minute with ferric chlorid, in 20 minutes the Prussian blue reaction occurred, proving the rapidity of absorption from the intestines and the period when renal secretion begins. A small enema, or an enteroclysis of the above solution at 99° or 100° F. increased the amount of urine synchronously with the blue reaction, there being no rise of pressure, but the increased secretion being due to the specific action of the kidney. The normal salt solution given by any one of the three methods also causes a diminution of renal congestion. Even in cases of high arterial tension, though an irrigation at 110° to 120° may cause an evanescent increase, it will soon be followed by a rapid fall due to the profuse diuresis and diaphoresis. Experiments prove that the general average of absorption is one quart out of 13. In one case of oliguria with double pleurisy and effusion, with rectal irrigation alone in the space of four days, the urine increased from 12 to 20 ounces and in two weeks it increased to 70 ounces per day and the effusion had disappeared. Kemp emphasizes the fact that one cannot afford to wait for slow results in such a disease as puerperal eclampsia, but with frequent small venesection, combined with properly administered irrigations, one may turn the scale in the patient's favor in one-half hour—10 minutes for the venesection and 20 minutes for diuresis to follow the enteroclysis. [W.K.]

5.—Hematocele of the Cord or Into the Tunica Vaginalis.—Bowen recites the usual causes given for hematocele and says an important point in diagnosis is to differentiate it from hydrocele. Hydrocele is usually of rather slow growth and may exist a long time without serious inconvenience; while hematocele is usually of traumatic origin, of rather rapid growth and tends to trouble by seeking an outlet. Hydrocele is translucent to light and hematocele is not. The treatment of hematocele is by daily application of ice, elevation and rest, later hot applications supplant the ice. Open and turn out the blood-tumor if it fails of absorption, or if of such size as to render absorption improbable. Of course, in no case is the testicle to be sacrificed. [A.B.C.]

6.—Toxemia of Pregnancy.—We know, writes D. H. Stewart, that one of the many elements in the toxemia of puerperal eclampsia is the changing of urea into ammonium carbonate. This salt is demonstrable in the feces in eclampsia, and it is the result of the principal change in that complex blood poisoning which, by its effects on the nervous system, gives

rise to the convulsions which are so characteristic. It is also well known that chloroform produces a temporary glycosuria; hence we may readily assume that we must have glucose in the blood. If we admit the presence of this sugar in the blood, we can easily demonstrate by our test-tube that it does prevent the changing of urea into ammonium carbonate. Hence chloroform, with its accompanying glycosuria, is the anesthetic indicated in puerperal convulsions. Not that it will inhibit the development of all the poisons in the toxemia, but it will limit the production of the chief one. [W.K.]

Philadelphia Medical Journal.

December 27, 1902. [Vol. x, No. 26.]

1. Influenza and the Nervous System. SMITH ELY JELLIFFE.
2. A Case of Acute Intestinal Obstruction Caused by a Gallstone; Necrosis of the Bowel; Operation; Death. J. A. SCOTT.
3. The Surgical Treatment of the Enlarged Prostate. GEO. E. ARMSTRONG.
4. Sore Throat. B. F. RANDOLPH CLARK.
5. Neurasthenia. T. W. KEOWN.

1.—See *American Medicine*, Vol. III, No. 25, p. 1047.

2.—**Intestinal Obstruction Caused by a Gallstone.**—Scott details the case of a woman of 67 in whom the intestinal obstruction was due to an unusually large single gallstone in the jejunum. The patient was operated upon and 12 inches of the necrotic bowel resected. The woman died several hours subsequently from cardiac exhaustion. Several cases are cited of obstruction by abnormal intestinal contents which have been reported during the past two years. In the case which he reports the pains were paroxysmal; there was no vomiting until about 18 hours after the first symptoms; no evidence of collapse but a flushed face, with normal urine; no evidence of either localized or generalized peritonitis. These are considered as important points in obstruction caused by one or another of the abnormal contents of the bowel. [F.C.H.]

3.—See *American Medicine*, Vol. IV, No. 15, p. 567.

4.—**Sore Throat.**—Clark discusses sore throat from its various etiologic standpoints. Not every patient who complains of sore throat is actually suffering from angina. In popular phrase the name sore throat is used loosely to describe any pain or discomfort about the mouth, fauces or larynx. Various conditions are detailed in which the patient may suffer from a reflex sore throat. [F.C.H.]

5.—**Neurasthenia.**—Keown details certain points which he has observed in cases of neurasthenia. He considers that all cases are curable, if properly treated in time. The best results are obtained by a combined treatment; the general nervous system being placed at rest, and special treatment instituted for the organ which seems to be the source of the trouble. [F.C.H.]

January 3, 1903. [Vol. XI, No. 1.]

1. Gastroptosis: A Critical and Clinical Study; with Reference to 100 Cases. ALBERT P. FRANCINE.
2. A Report of a Case of Chronic Splenic Anemia. JAMES ELY TALLEY.
3. The Perineum. JAMES D. LOVE.
4. A Local Electric Light Bath. C. C. F. NIESCHANG.
5. A New Reducing Cyrtometer. ROBERT POTTER ELMER.
6. A Case of Traumatic Rupture of the Bladder; Recovery. EDWARD A. SCHUMANN.

1.—**Gastroptosis.**—Francine details the etiology, physical signs, diagnosis and treatment of gastroptosis. The indications for treatment are to relieve the stagnation and fermentation and to increase the motor power or peristaltic activity of the stomach; to furnish support to the stomach and other abdominal viscera, thus relieving local congestion and weight, and to tone up the general health and mental attitude of the patient. [F.C.H.]

2.—**Chronic Splenic Anemia.**—Talley details a case of chronic splenic anemia occurring in a married woman of 34, who was born in the West Indies. The lower border of the spleen extended fully to the anterior superior spine of the ilium, its upper border was some inches above the costal arch, the anterior border was to the right of the mammary line, and the posterior border extended to a line drawn perpendicularly through the inferior angle of the scapula. On palpation the spleen was smooth, firm and not tender. [F.C.H.]

3.—**The Perineum.**—In order to prevent perineal lacerations Love prefers to deliver, especially primiparas, in the

left lateral prone position. The advantages of this position are that the obstetrician is in a measure master of the situation; the expulsive forces can be modified; undue expulsive efforts can be counteracted by pressure on the fetal head; the head can be kept well flexed and the soft parts can be better protected with the accoucheur's hand and the parts can be kept under better observation than in any other position. In proper selected cases episiotomy is of value, especially when the perineum has previously been seriously lacerated, and in which the sphincter has been torn and the lesion successfully repaired. All lacerations, if possible, should be immediately repaired; and it is not necessary to douche the vagina nor use the catheter subsequent to the repair of perineal lacerations. [F.C.H.]

4.—**A Local Electric Light Bath.**—Nieschang describes a portable electric light apparatus which consists of an insulated cone, lined with asbestos sheeting. The edges of the cone are protected by a rubber cushion. It also possesses a handle, connecting cord, plug and lamp. The article is illustrated. [F.C.H.]

5.—**A New Reducing Cyrtometer.**—Elmer has devised an instrument which is not expensive or clumsy, and which will rapidly make a graphic record of the thoracic outline. The instrument is accurate and of convenient size. The article is illustrated. [F.C.H.]

6.—**Traumatic Rupture of the Bladder.**—Schumann details the case of a male of 41 who had a traumatic rupture of the bladder which was successfully operated upon. At the time of operation, 24 hours subsequent to the injury, an area of necrosis was found in the fundal portion of the anterior vesical wall, elliptical in shape and with a rent about three-quarters of an inch long in its center. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

EDITORIAL COMMENT

Splenic Anemia.—For a number of years discussion has been rife as to whether or not there exists an independent disease to which, for want of a better term, splenic anemia is applicable. This term has been used by a number of writers to designate a symptom-complex characterized especially by grave and progressive anemia and enlargement of the spleen, but unassociated with leukocytosis or enlargement of the lymphatic glands—a symptom-complex variously described in the literature under the terms splenic cachexia, splenic pseudoleukemia, splenic lymphadenoma, idiopathic hypertrophy of the spleen without leukocytosis, primitive splenomegaly, Banti's disease, etc. The subject is now brought prominently to the attention of the profession by the recent paper by Osler,¹ who, to provoke discussion at the recent meeting of the Association of American Physicians, proposed that from among the conditions with which anemia and enlarged spleen are associated one may separate a well-defined disease which may be termed chronic splenic anemia, and which he defined as follows: A chronic affection, probably an intoxication of unknown origin, characterized by a progressive enlargement of the spleen which cannot be correlated with any known cause, as malaria, leukemia, syphilis, cirrhosis of the liver, etc. (primary splenomegaly); anemia of a secondary or chlorotic type (leukopenia); a marked tendency to hemorrhage, particularly from the stomach; and in many cases a terminal stage, with cirrhosis of the liver, jaundice, and ascites (Banti's disease). He reports a number of illustrative cases that have come under his personal observation and that of his colleagues in the Association: 12 cases of acute anemia, under one year's duration with enlarged spleen; 26 cases of chronic anemia with enlarged spleen; and 2 cases of simple splenomegaly. Directing attention to the chronic cases, he gives an excellent account of the symptom-

¹ *American Journal of the Medical Sciences*, 1902, cxxiv, 751.

atology of the affection which is characterized by, 1. the remarkable duration of the disease—10 years, 12 years, even 25 years. 2. The splenomegaly which forms a special feature of the disease, the spleen being unequaled in size in any other disease except, perhaps, leukemia. 3. Hematemesis, which often is profuse, and which, in the majority of the cases, is due to conditions associated with the enlarged spleen, and not to accompanying cirrhosis of the liver. The hemorrhage may result from (a) a general diapedesis from the gastric mucosa, (b) small erosions of the gastric mucosa, (c) rupture of a varicose vein of the esophageal plexus, or, (d) as suggested by Rolleston, a large wandering spleen pulling on the gastrosplenic omentum and causing torsion of the veins, or a kink in the splenic vein, and consequent intense venous engorgement of the stomach. 4. Anemia, characterized by a moderate grade of corpuscular anemia, low hemoglobin, and leukopenia. 5. Pigmentation of the skin, which is present in many of the cases. 6. Certain liver symptoms in the late or terminal stages of the disease—symptoms, such as ascites, that suggest cirrhosis of the liver. This relation of cirrhosis of the liver to enlargement of the spleen is discussed in detail, and attention is directed to the conditions in which splenomegaly and cirrhosis of the liver are associated: atrophic cirrhosis of the liver, syphilis of the liver, hemochromatosis, Hanot's cirrhosis, and a simple cirrhosis occurring in children. Especial interest attaches to the splenomegalic cirrhosis of the liver—a cirrhosis that may develop after the splenic anemia has existed for some time, and a condition to which Banti first called attention, whence Banti's disease. The splenomegaly may exist for a long time without leading to cirrhosis; in one of Osler's cases, after 13 or 14 years, the liver was only moderately cirrhotic. As insisted on by Osler, the enlargement of the liver, in adults at least, is not very great, the splenic features dominate the case throughout, and the ascites and hematemesis do not necessarily indicate that the liver is involved. Concerning the nature of this interesting disease but little can be said; its morbid anatomy throws no light on its origin, and whether it be due to some form of intoxication, or to hemolysis produced by an enzyme, is at present pure speculation. The important and practical deductions seem to be that splenic anemia is an independent disease entity, and that the spleen itself is a most important factor in it. Doubtless the discussion will continue as to whether the disease is a primary or a secondary anemia—and well it may; the most important and suggestive fact remains, however, that cure has followed removal of the spleen in some cases. A searching inquiry into and a renewed study of all cases of anemia is imperative.

REVIEW OF LITERATURE

Cretinism Unsuccessfully Treated with Thyroid Extract.—Mörl¹ reports a case of myxedema in a woman 37 years of age. When six years old the patient developed cervical adenitis; from this time on the typical symptoms of cretinism appeared. Thyroid extract was administered, and in six days there was marked improvement. This treatment was continued for six months, when all the old symptoms reoccurred in greater severity and the medicine had to be stopped. The patient rapidly became worse, and died in two months. Mörl believes that the excessive use of thyroid extract hastened her death. He thinks this drug is of no therapeutic use in long standing cases of cretinism. [w.e.r.]

Rectal Temperature in Experimental Tetanus.—Klee-feld and Pinchart² have made a study, in dogs and rabbits, of the temperature changes caused by tetanus under varying conditions. The results show (1) that tetanized adult dogs die with elevated temperature. Young dogs may show a lowered temperature. Tetanized rabbits show considerable hypo-

thermia. This difference in thermic reaction is constant whatever toxin is employed; (2) the blood serum of dogs tetanized by the toxin of Tizzoni produces in both dogs and rabbits a temporary hyperthermia. The blood serum of rabbits tetanized by the toxin of Tizzoni produces in the two species of animals a hypothermia equally as transient as the hyperthermia caused by the serum of dogs. These phenomena are not produced if the toxin of Behring is used to tetanize the animal from which the serum is taken. Hypothermia is not produced in rabbits if the injection of tetanic serum is preceded 24 hours by the injection of the immunizing serum of Tizzoni; (3) muscle extract of tetanized dogs produces hyperthermia in both dogs and rabbits, while that of rabbits produces hypothermia in both species. [A.G.E.]

The granting of certificates of fitness to children and young persons employed in factories and workshops was discussed at length by Greaves¹ at the recent meeting of the British Medical Association. He stated that the objects aimed at in requiring the examination and certification of young persons for employment may be divided into: 1. Avoidance of injury to health, development, or bodily capacity of the individual inspected. 2. Protection to the fellow workers, of whatever age or sex. 3. Maintenance of legality (which directly protects the employer). 4. Checking unfair competition and protecting the more conscientious manufacturers from the less scrupulous. (The discussion was participated in by a number of other wellknown members of the association, Alexander Campbell discussing in particular the system of half-time employment.) [A.O.J.K.]

An Endemic of Paratyphoid Fever.—De Feyfer and Kayser² publish their observations and bacteriologic examinations of an endemic paratyphoid fever occurring in Eibergen, Holland. Four families were affected, in all 14 individuals. The prodromal stage in all cases was short, lasting from one to four days, and was characterized by irregular temperature, anorexia, and pain. No matter how violent the onset the termination was always favorable, convalescence short, and with very few sequels. It is infectious and marked contagiousness. The temperature-curve is typical, first remittent and later intermittent; occasionally the disease ended in crisis. The pulse maintained a parallel relation with the temperature. It was regular, soft, and sometimes small. Vomiting, coated tongue, abdominal pain, gurgling in the iliac fossa, enlarged spleen, and diarrhea were the symptoms on the part of the intestinal tract. Occasionally albuminuria existed. Diazo and indican reactions were fairly constant. Roseolas were common, also angina and bronchitis. The Gruber-Widal reaction was usually absent, but a positive agglutination in all examined cases was obtained with the paratyphoid bacillus of type B. They believe that the cases had their origin in the water of a neighboring creek, of which all the families partook. [E.L.]

Acroparesthesia Following Traumatism.—Sommer³ reviews the literature concerning acroparesthesia, and reports two cases following injuries. Acroparesthesia depends upon an irritation of the vasomotor centers. The arteries become contracted and the nourishment of the nerve endings in the extremities is diminished. The main symptom is an unpleasant feeling in the hands, and more rarely in the feet. It is worse at night and morning. Occasionally these feelings change to acute pain. It is rarely limited to the peripheral distribution of any one nerve. The skin presents but slight or no disturbance in sensibility. There is no pain on pressure over the nerve, and no gross changes occur in motion. Its development is gradual. The etiology is not clear. This disease occurs most commonly in women at the menopause. Sommer advises that when paresthesia occurs after an injury, the possibility of acroparesthesia should be considered, and thus spare the patient the accusation of simulation. [w.e.r.]

Leprosy in Cuba.—R. Gutiérrez Lee,⁴ in a communication to the recent Sanitary Congress in Havana, refers to the rapid extension of leprosy which is without doubt taking place in cities of Spanish America generally. Of the 117 lepers in the

¹ British Medical Journal, September 13, 1902.

² Münchener medizinische Wochenschrift, October 14 and 21, 1902.

³ Berliner klinische Wochenschrift, October 6, 1902.

⁴ La Escuela de Medicina, October 1, 1902.

¹ Prager medizinische Wochenschrift, October 2, 1902.

² Journal Médical de Bruxelles, October 16, 1902.

Hospital de San Lázaro in Havana, 36 are women, 10 children, and the rest men; they are mostly Spaniards, natives of the Canary Islands, and Africans, though it is to be noted that the 10 children are Cubans, and the 36 women, for the most part, foreigners. In the hospital of Santa Clara there are 36 cases, mostly men and foreigners. The total estimated number of cases in the island is 403, and taking the population of the island at 1,600,000, this gives 2½ cases for each 1,000 inhabitants. The author estimates that in Colombia there are 27,000 lepers, or about 50 for each 1,000 inhabitants. In Brazil, Venezuela and Ecuador he estimates 12 per 1,000. The Central American republics, as well as Chile, Peru, and Argentine, furnish abundant cases. In the Tierras calientes of Mexico and the Antilles cases are frequently met with. This is also true of Yucatan, Tabasco, and Campeche. The author pays generous tribute of praise to the splendid work that has been done in Cuba by the American sanitary commission, and suggests the need for the establishment of leprosy hospitals located in the country where the lepers may be segregated under the most favorable sanitary conditions and furnished with healthful and agreeable outdoor employment in farming and horticulture. He advocates the enactment of laws to prevent the immigration and the intermarriage of lepers. [C.S.D.]

The Relation of Metabolism to Lymph Formation.—Bainbridge,¹ pointing out that the lymph serves as a sort of middleman between the blood and the tissues, states that the question of lymph formation may be considered from two points of view, namely, the relation of the blood to the lymph and the relation of the lymph to the tissues. During the last few years an enormous amount of work has been done on the former aspect of the question, and the present position may be summed up in the statement of Starling that "lymph formation depends upon two factors—changes in the capillary blood pressure and changes in the permeability of the capillaries." Directing attention to the relation of the tissues to the lymph, to the relation of metabolism to lymph formation, he details the results of a number of experiments that go to show that the influence of metabolism on lymph formation is of very great importance. Any attempt to explain how metabolism increases lymph production, however, is beset with difficulties. There can be no doubt that in the course of metabolism metabolic products are set free by the tissues, that these metabolites have a comparatively small molecular weight, and that many of them are of a crystalloid nature. Any sudden increase of metabolism (for example, secretion of bile) would lead to the rapid formation of these metabolites in the tissue cells. Thence they pass most probably by diffusion into the surrounding lymph spaces, where they raise the osmotic pressure of the lymph. As a result water passes by osmosis from the blood to the lymph, whereby the former becomes more concentrated and the latter more dilute; at the same time the lymph flow becomes increased. Assuming this explanation to be true, the process is analogous to the hydremic plethora induced by the injection of strong sugar solutions. In the case of sugar, the blood and lymph take up fluid at the expense of the tissues; in metabolism, crystalloids are suddenly formed in the tissues, and the lymph and the tissues take up the fluid at the expense of the blood. [A.O.J.K.]

The Influence of the New Tuberculin on Cell Metabolism.—Mitulescu² has performed a number of experiments to test the influence of Koch's new tuberculin on cell metabolism and expresses his results as follows: If used as a therapeutic agent in small and cautiously increased quantities, and only in suitable cases, it does not produce cellular degeneration, but rather a beneficent cell irritation and a gradual formation of specific immune bodies, which diminish the vitality of the tubercle bacilli and neutralize their toxins and proteins. Locally is produced a perituberculous irritation favoring a limitation and encapsulation of the tubercle through sclerotic tissue. [E.L.]

Concerning Streptococci and Antistreptococccic Serum.—Aronson³ reviews the literature and reports his own

experiments on streptococci and antistreptococccic serum. Cultures were obtained from cases of scarlet fever, diphtheria, erysipelas and acute rheumatic fever. While many of these microorganisms originally possessed different characteristics, yet after repeated inoculations these differences were lost. After much experimentation Aronson obtained a culture of streptococci that was fatal to the larger animals, and he was then able to obtain an antitoxic serum. His serum shows the phenomenon of agglutination which is seen in none of the other antistreptococccic serums. He concludes that a very close relationship exists between the different varieties of this microorganism. He assumes this fact to be true since the serum from the horse will immunize against all forms of streptococci. He hopes soon to prove the value of his serum in immunizing the human body against streptococci. [W.E.R.]

The injurious influence of fast aniline black dyeing processes was the subject of a paper by Dearden¹ at the recent meeting of the British Medical Association. He pointed out in detail the injurious influences pertaining to the different stages of the process, as follows: 1. In the making of the "liquor" from aniline oil. 2. Impregnating and mangling the cloth. 3. Passing the impregnated material over drying cylinders. 4. Oxidation in the "ageing" room; and 5. "Chroming" or "fixing" the dye. [A.O.J.K.]

Uncinariasis in Cuba.—Aristides Agramonte,² having had his attention directed to the subject by the articles of Drs. Guitéras and Stiles in *American Medicine*, May 10 and July 19, 1902, undertook a more careful examination of the cases of persistent anemia of obscure origin which were admitted to Hospital No. 1, Havana, and encountered numerous cases of uncinariasis the existence of which had not been suspected. Of the 16 cases 5 were women and 11 men; the diagnoses, made before the discovery of the parasites in the feces were, in 3 cases paludic hydremia, in 2 cases chronic paludism, in 7 cases paludic cachexia, in 3 cases splenic anemia, and in 1 case intestinal tuberculosis. The article includes a description of the cases and illustrations of the parasites. [C.S.D.]

The Rhodan Reaction of the Saliva in Diseases of the Ear.—To determine the question whether the rhodan reaction of the saliva is of diagnostic and prognostic value in ear diseases, Alexander and Reko³ examined the saliva of 85 persons suffering from different varieties of ear disease at different periods. In middle-ear disease, either acute or chronic, they usually found rhodan absent, or there was only a trace of it present. Some time after the operation, usually about the fourth week, the reaction returned again, indicating an uncomplicated recovery. Diseases of the external ear and parotid gland did not affect the reaction. When the tympanic membrane was destroyed on both sides, rhodan was permanently absent. The cause of the diminution is believed to be due to an irritation of the nerves of the tympanic membrane, the unilateral irritation having a bilateral effect. There is no prognostic significance to be derived from the reaction. [E.L.]

The Heart in Diphtheria.—After mentioning the cardiovascular changes in ordinary cases of diphtheria, Girard⁴ considers at length the cases in which the heart lesions are so marked as to form really a cardiac type of the disease. Pallor of the face and the mucous membranes is of great value as a premonitory symptom of grave cardiac trouble. Vomiting of the cerebral type is present. The pulse becomes soft, arrhythmic, accelerated. In some cases there is cardiac erethism shown by the exaggeration of the intensity of the heart sounds as contrasted with the extreme feebleness of the pulse. Hemorrhages, as epistaxis, hematemesis and ecchymoses appear. Sometimes a singular apathy of the patient is a premonitory symptom of cardiac involvement. Pain is sometimes very violent, diarrhetic crises rarely occur. Convulsions and modifications of respiratory rhythm are frequent. Prognosis is most grave when these symptoms are marked. The pathologic anatomy of the heart is given, as also are the histologic lesions. Diphtheric endarteritis is exceptional. Nerve lesions play a capital role in the cardiac symptoms of diphtheria. The treatment is the early

¹ British Medical Journal, September 13, 1902.

² Deutsche medicinische Wochenschrift, September 25 and October 2, 1902.

³ Berliner klinische Wochenschrift, October 27, 1902.

¹ British Medical Journal, September 13, 1902.

² Revista Medica Cubana, September 1, 1902.

³ Wiener klinische Wochenschrift, October 16, 1902.

⁴ Gazette heb. de Médecine et de Chirurgie, October 2, 1902.

employment of large doses of antitoxic serum. The patient must be kept at absolute rest during the disease and during convalescence. For the symptoms cardiac tonics, especially caffeine, ergotin, and strychnin are indicated. [A.G.E.]

The Systematic Examination of Workers in Dangerous Trades.—Alcock,¹ opening a discussion on the value of systematic examination of workers in dangerous trades—lead, mercury, etc.—at the recent meeting of the British Medical Association, stated that we may assume the official aid in instituting these examinations to have been: 1. Elimination of the unfit. 2. Early recognition of dangerous symptoms, and consequent diminution in the amount and character of trade diseases. 3. Improvements in the treatment of lesions—in certain trades, for example, bichromate. 4. Accumulation of statistics. In actual practice, so far as his own district is concerned, the following results are being secured: 1. Gradual elimination of the unfit (whether from inherent debility, or from illness produced by occupation). 2. Better standard of hygiene, consequent upon repeated warnings, etc. 3. Accumulation of valuable statistics concerning the original and acquired characteristics of workers—for example, age limit, relation between pregnancies and miscarriages, order of development of symptoms of poisoning, etc. He believes that (1) the type of worker is decidedly improved; as a rule they are cognizant of danger, and some are glad to cooperate with the certifying surgeon in his search for warning symptoms; (2) that the rules governing personal hygiene are obeyed better and more automatically, it being significant, for instance, that neglect to clean the teeth and nails is held now to justify suspension; (3) that complaints from workers, treated confidentially, lead to improvements—for instance, the history of an illness has sometimes disclosed structural or other defects in a factory which can then be dealt with by the factory inspector. (The discussion was continued by a number of other wellknown members of the association.) [A.O.J.K.]

Productive Tuberculous Pleurisy.—Erben² reports the case of a woman of 24 in whom two years previously tuberculosis of the left apex had been diagnosed. Shortly afterward a left-sided pyopneumothorax developed. Since then the lung process remained quiescent, but the pleura became infected with tubercle bacilli; caseous granulation tissue formed, with the result of a productive tuberculous pleurisy, the necrotic cheesy masses of which became mixed with the pleural exudate. Ever since the development of the pleurisy (probably a year) the exudate was found to be rich in tubercle bacilli. The fluid was withdrawn four times, each specimen showing an enormous number of tubercle bacilli. At the point where the second puncture was made a small tumor the size of a walnut developed, which when excised was found to be a tuberculoma, the origin of which must be traced to an infection from the hypodermic needle while it was being withdrawn. [E.L.]

Syphilitic Pseudomembranous Angina.—Bellan³ considers at length the historical and clinical aspects of this condition, and gives points in the differential diagnosis between it and ten other anginal affections simulating it. Diagnostic characteristics of the syphilitic variety are the long duration of dysphagia, the constancy of ulceration beneath the false membrane, and the fact that the breath is not fetid. The principal diseases considered in the differential diagnosis are pultaceous angina, diphtheria and herpetic, streptococcal and pneumococcal anginas. In diphtheria, bacteriologic and clinical studies are equally important, though the latter is often sufficient, the bacteriologic findings only confirming the diagnosis already made. [A.G.E.]

Hematology of Cancer of the Stomach.—Mouisset and Tolot⁴ publish an extensive study of the blood in cases of cancer of the stomach. They find that the diminution in the number of the red corpuscles is proportionate to the general state of the patient's health. The diminution of the globular value (*i.e.*, the ratio of the hemoglobin percentage to the red corpuscle percentage) is an important sign of cancer of the stomach; but it may be absent, owing to the slow development of the lesion or

on account of a sudden disturbance in the number of red corpuscles. Leukocytosis is a late phenomenon, and does not appear until the period of cachexia, unless as the result of inflammatory complications. They note that it is impossible to base the diagnosis of cancer of the stomach upon the differential count. A detailed account of the clinical history and the blood studies of eight cases accompanies the article. [D.R.]

Transmissibility of Human Tuberculosis to Calves and Goats.—Moeller¹ has performed a number of experiments with calves and goats to test the transmissibility of human tuberculosis. He formulates his results as follows: Calves do not develop tuberculosis when human tuberculous sputum is fed to them or is given by subcutaneous injections; when tubercle bacilli are given in pure cultures by inhalation, by intraperitoneal and intravenous injection, or when rubbed into their skin; nor when human tubercle bacilli are injected into the peritoneal cavity after having been passed through goats. Goats are not made ill even if they are fed enormous quantities of sputum; if very large quantities are injected intraperitoneally, a nodular condition of the peritoneum resulted, but in no single instance was a spread of the disease throughout the entire body produced. [E.L.]

Paralysis of the Recurrent Laryngeal in Mitral Stenosis.—A patient of Hofbauer's² was ill for two months, complaining of a feeling of pressure within the chest, made worse by motion, and dyspnea upon exertion, when he developed hoarseness. This was more marked whenever the patient leaned forward or reclined toward the left, less marked when he would lie upon his back or right side. Examination showed the case to be one of very early mitral stenosis, without any of the ordinary causes of paralysis of the recurrent laryngeal. A Röntgen picture showed dilation of the auricles, and upon the strength of that and the fact that the case was a very early one, Hofbauer believes the paralysis to be due, not to compression by the auricles, but rather to crossing and pulling of the recurrent nerve by the ligamentum Botalli, this being worse when the heart falls forward, better when it falls backward. [E.L.]

A Leukemic Lymphatic Lymphadenia.—Under this title Weil and Clerc³ discuss adenia and its nosologic relations. They consider briefly four cases in which the findings were analogous, *viz.*, glandular tumors, localized in one; general in three cases, inconstant splenic hypertrophy, and alterations in the blood characterized by anemia and a notable lymphocytosis, ranging from 66% to 92% of the leukocytes. The total number of leukocytes were from 2,400 to 20,000, thus ruling out leukemia. With these cases are compared cases of sarcoma and tuberculosis of glands which resemble lymphadenia clinically but which show an increase of polynuclear leukocytes. Hence cases of generalized glandular tumors not showing leukemia or cancer are placed by the writers in two classes: (1) for those showing lymphocytosis is reserved the term adenia. This is closely related to lymphatic leukemia, but the blood lesions are incomplete, due either to abortive processes or to the fact that the condition is an early stage of leukemia which will develop later on; (2) those which do not show lymphocytosis but in general an increase of polymorphonuclear leukocytes are not lymphadenia but sarcoma tuberculosis, or other chronic infections. [A.G.E.]

Lactophenin in Typhoid Fever.—Schuler⁴ reports his experience with the use of lactophenin in an epidemic of typhoid fever. On account of circumstances baths could not be given to lower the temperature. The author resorted to lactophenin with excellent results in 450 cases. The temperature was decreased from two to four degrees in a few hours. This drug had no untoward effects on the pulse and respiration, nor did it show any of the bad results following the use of other antipyretics. It is administered in 15 grain doses three times a day. Lactophenin is also useful in the treatment of the nervous and abdominal symptoms in typhoid fever. [W.E.R.]

A Contribution to Pentosuria.—Kaliski's⁵ experience

¹ British Medical Journal, September 13, 1902.

² Wiener klinische Wochenschrift, October 16, 1902.

³ Gazette heb. de Médecine et de Chirurgie, October 23, 1902.

⁴ Rev. de Méd., October, 1902.

¹ Deutsche medicinische Wochenschrift, October 2, 1902.

² Wiener klinische Wochenschrift, October 9, 1902.

³ Gazette heb. de Médecine et de Chirurgie, October 19, 1902.

⁴ Berliner klinische Wochenschrift, October 13, 1902.

⁵ Deutsche medicinische Wochenschrift, October 9, 1902.

teaches him that to determine the question whether a pentosuria or glycosuria exists, the fermentation test is not alone sufficient; to make the diagnosis of pentosuria a certainty, tests with phloroglucin hydrochlorate and orcin must be performed. Bial's modification of the orcin test is especially appropriate, as it can be performed in a few minutes. In addition he permits the boiled urine solution to cool down somewhat; at this stage he adds ether in considerable quantity, when even small quantities of pentose give a marked orcin reaction. [E.L.]

A Study on Diphtheria.—Josias and Tollemer¹ give statistics of 580 cases of diphtheria treated in the hospital Bretonneau during 1901-02. The great majority of the cases corresponded clinically and bacteriologically. Attention is called to the necessity of making inoculations from the nasal mucosa in doubtful cases. Of 196 cases in which the bacillus of diphtheria existed in the throat, it was found in the nasal mucosa of 78. Among the complications were slight albuminuria in 95 cases; severe in 18; cardiac involvement in 14; diphtheric paralysis in 16; convulsions in 9; slight otitis in 2; neither pericarditis nor endocarditis occurred. Treatment consisted in the use of the serum of Roux, 10 cc. to 30 cc. on admission. This was repeated the following day if necessary. It is considered deplorable that only 33 of the 580 children had received serum at home before the attending physician had sent them to the hospital. No complication imputable to the serum was observed, except serum erythema, which appeared in 102 cases. The value of preventive inoculations is strongly emphasized. The mortality in the series of cases reported was 76 or 13.1%. Of these 18 were *in extremis* when admitted, making the mortality of the remaining cases 10%. The writers conclude that the only way to lessen this deathrate is for physicians to use serum early in every suspected case. [A.G.E.]

Is the Active Agent of Hemolytic Fluids Derived from the Mononuclear Leukocytes?—Metschnikoff's theory that hemolysins originate in mononuclear leukocytes is reexamined by Doemeny² in a series of experiments. He made use of the methods prescribed by Tarrassewitsch, who worked under Metschnikoff's guidance and upon whose results the hypothesis was based. Extracts were made of organs (pancreas, spleen, retina, mesentery glands) rich in mononuclear cells and they were brought in contact with a concentrated mass of red blood-cells. In the greater number of experiments there was no hemolysis, and in the remainder the hemolytic action was so inconstant as to rob it of all its value. He concludes that Metschnikoff's hypothesis is not aided by his experiments and that the origin of the substances producing hemolysis is still veiled in obscurity. [E.L.]

Carbolic Acid in Erysipelas and Acute Osteomyelitis.—Mencièrè³ has employed carbolic acid in two cases of erysipelas and one of acute osteomyelitis, with very satisfactory results. A 5% solution was applied to the involved areas in the first cases for three or four minutes, followed by washing with alcohol. Cotton saturated with alcohol was then applied and covered with oiled cloth, this dressing being left on for two days. In the osteomyelitis pure carbolic acid was used, with the result of limiting the infection, as the author believes, better and more rapidly than could have been done by the chisel and mallet. [A.G.E.]

Chronic Pharyngeal Diphtheria.—Nelsser⁴ traced a house infection of diphtheria to the throat of a girl of 22, who had been more or less hoarse and afflicted with cough ever since her eighth year, when a brother had diphtheria. She had never had the disease. The mucous membrane of her throat was dry, shiny, somewhat atrophic, and covered with some glairy mucus. Cultures from this mucous revealed true virulent diphtheria bacilli. She was employed as wetnurse to a child in the house for one month, then artificial feeding was instituted, she being retained as an attendant to the child. Three months later, during an exacerbation of her sore throat, her charge and another child in the family developed diphtheria. When the children recovered the house was thoroughly disinfected and the family left the house in charge of this nurse and another

servant. Upon their return the girl's duties consisted in caring for a third child. After a short time this child as well as the girl's bedfellow developed diphtheria. This was followed by an examination of the throats of everybody in the house and the discovery of the innocent culprit. She was isolated and subjected to a rigid treatment for two months, but she could not be freed of the bacilli. Examination of her blood showed the presence in it of 2,000 units of antitoxin, which explains her immunity to the disease. [E.L.]

Contraction of Pulmonary Tuberculosis in Hospital Wards.—Parisot¹ has observed patients showing chronic affections, as pulmonary emphysema, myocarditis, paraplegia, and rheumatism, who before their entrance to the hospital Saint Julien had been for six months to five years in medical wards of civil hospitals, where they were in more or less direct contact with tuberculous patients. Of seven patients not exposed before admission to civil hospitals, three were found to have pulmonary tuberculosis when admitted to the Saint Julien. The conclusion is that medical wards containing the tuberculous are foci for the contraction of the disease by chronic cases, who afterward carry it to homes for the incurable where they are admitted. [A.G.E.]

The Treatment of Scarletina with Scarletina Streptococcic Serum.—To treat scarlet fever patients with animal serum Moser² immunized horses with streptococci coming from the blood of such patients. After some months' treatment the horses were bled, and the serum used in the treatment of 84 patients suffering from all grades of the disease. Of these 22 were light cases, 28 grave, and 34 malignant; 16 died, 15 of which belonged to the last class. The best results were derived in cases where the serum was injected early and the doses were large; all symptoms, but especially those of intoxication, improving very quickly. Normal horse serum and Marinorek's antistreptococcic serum were tried without result. [E.L.]

Agglutination of Streptococci.—Meyer³ has experimented with streptococci obtained from a large number of various diseases regarding their agglutinating property with antistreptococcic serum. He has made a number of important discoveries, and promises a detailed account of them shortly. In the meantime he has formulated his results as follows: 1. Streptococci may be agglutinated in the same manner as other bacteria, with their corresponding immune serums. 2. By means of this phenomenon we are able to differentiate absolutely between human streptococci occurring in anginas and pyogenic infections. Even those of the first variety may be separated into classes showing differences, depending upon the severity and variety of the disease. 3. Bactericidal serums which are to be made use of in the treatment of diseases must not be manufactured with bacteria which have been made virulent by passing them through animals, as has been the custom. [E.L.]

GENERAL SURGERY

A. B. CRAIG

MARTIN B. TINKER

C. A. ORR

REVIEW OF LITERATURE

Janet's Method in the Treatment of Urethral and Vesical Diseases.—Spitzer⁴ has modified Janet's method of irrigating the urethra and bladder by substituting for the catheter a Y-shaped glass cannula, the single limb of which is separated into two parts by a glass septum, each half communicating with one limb of the "Y." One is connected with the irrigator, the other serves to carry the fluid away. The fluid is easily controlled and all parts of the urethra are brought in contact with the irrigating solution. In other respects Janet's method is followed. Spitzer has experimented with a number of different solutions, but has found potassium permanganate by far the best. He uses it lukewarm in a strength of 1-3,500; to wash out the anterior urethra, a fall of 20 inches; for the posterior urethra and bladder, of 60 inches is sufficient. A

¹ La Médecine Moderne, October 8, 1902.

² Wiener klinische Wochenschrift, October 2, 1902.

³ Gazette Medicale de Paris, October 25, 1902.

⁴ Deutsche medicinische Wochenschrift, October 2, 1902.

¹ La Médecine Moderne, October 29, 1902.

² Wiener klinische Wochenschrift, October 9, 1902.

³ Deutsche medicinische Wochenschrift, October 16, 1902.

⁴ Wiener klinische Wochenschrift, October 16, 1902.

liter is permitted to flow through, and should not take longer than five minutes to do so. Daily irrigations should be started as soon as the infection is diagnosed, and good results may be expected after from 12 to 15 irrigations, much better results than any other method will give. If after four or five irrigations no improvement is noticed, other methods are substituted. Should periurethral inflammation be present, should the irrigation give the patient much pain, or the gonorrhoea be getting visibly worse, contraindications exist; they are, however, the only contraindications against its use. It is also a useful method of treatment in chronic anterior urethritis, but always in conjunction with other agents. It is contraindicated in acute posterior urethritis if blood appears in the urine, and if it inflicts much pain. Prostatitis and epididymitis are not necessarily contraindications. Both chronic urethritis and cystitis require much longer treatment than acute anterior and posterior urethritis. [E.L.]

Abdominal Wounds in War.—From a study of results in the Spanish-American and Boer wars Charles Roberts¹ concludes that, as a rule, the conditions in a field hospital are not suitable for laparotomy, that many recover without laparotomy, that in those who die the nature of the injury is such that death must result whatever be the conditions of operation, and exploration may add fresh danger. When the conditions of operation approximate those in civil practice laparotomy should be undertaken for intraperitoneal hemorrhage endangering life, and for probable perforation of the stomach or bowel, provided that the patient is seen early. [H.M.]

Treatment of Gangrenous Noma by Excision.—Ranke² reports his fourth case of noma after measles, with recovery after extensive operative interference. It concerned a child of 3½ years, which on the fourth day of measles developed noma of the genitalia and rectum. The ulcers were excised, the operation going for some distance on all sides through healthy tissue. Recovery was uninterrupted and associated with but slight disfigurement. [E.L.]

Tetanus Following Injection of Gelatin.—The case reported by Eigenbrodt³ was a girl of 19 with hemorrhage after a nasal operation. Hemophilia being suspected, 75 cc. of a 2% solution of gelatin was injected under the skin of the thorax. The next day pain was felt at the points of injection, and 48 hours later the parts became gangrenous. On the fifth day symptoms of tetanus appeared and death followed in 19 hours. Bacteriologic examination of specimens from the autopsy revealed the tetanus bacillus in different parts of the body. Examination of the remainder of the gelatin showed no bacilli, nevertheless Eigenbrodt is convinced that the gelatin was the source of the infection. [A.G.E.]

When to Operate for Appendicitis.—Dieulafoy⁴ reports the case of a man of 23 with a history typical of acute appendicitis; peritonitis did not play a very important role, the behavior of the kidneys and liver pointed to gangrene of the appendix, and autointoxication. The urine contained large amounts of albumin, granular casts, leukocytes, and biliary pigment. Operation was performed on the fourth day. Behind the cecum was a small collection of fetid pus, and in it the gangrenous appendix; there was no sign of peritonitis. The patient sank gradually; on the fourth day hematemeses occurred repeatedly, and he died in a condition of coma. At the autopsy many small hemorrhages were seen distributed over the mucosa of the stomach and intestine; the peritoneum was almost normal, the heart, lungs, spleen, kidneys and liver seemed normal to the naked eye. A histologic examination of the kidneys revealed a subacute degenerative nephritis, caused most likely by a toxin eliminated by the renal secretory substance. The centrolubular liver cells were the seat of a granulofatty degeneration, the result of a subacute intoxication. As in this case so in many others, the infection and its complications are very light, but the toxin evolved at the point of infection produces the gravest complications, and in the author's opinion this intoxication is even more important than the infection. To protect against these grave complica-

tions he insists on the early operation in all cases of appendicitis. An operation in the interval is of benefit because it protects the patient against future attacks. The only rational way, however, is to operate so early that symptoms of infection and intoxication have not had time to appear. All cases operated on by the author before the third day have recovered; those operated on on the third day have also gotten well, but in some of them grave complications have arisen. If operated on later, the failures are many, due primarily to the results of infection and intoxication. [E.L.]

Intestinal Anastomosis: Comparative Methods.—In cases of bad obstruction unassociated with gangrene of the bowel, it is considered by Archibald MacLaren¹ the safer method to practise complete or partial eventration, with stripping of the intestines, according to the method suggested by Maylard, by means of one or more openings in the intestine. A fecal fistula may be allowed to form, leaving resection to a later operation. There are certain parts of the bowel in which it is better to employ the Murphy button, on account of the difficulty of accurate suturing. These are the duodenum, under certain circumstances the ileocecal regions, and the stomach; but particularly the lower sigmoid and rectum. For the purpose of uniting the bowel after resection of the upper part of the rectum, the Murphy button has especial advantages. The Connell mattress suture, with all the knots on the inside of the bowel, is also of the same type, and is, he believes, the best intestinal suture yet offered. The only possible objection is that the suture line might be infected by the contact of the suture material with the intestinal mucous membrane during the suturing and tying of knots. [F.C.H.]

A Case of Stenosis of the Duodenum.—Reach² reports the case of a woman who, following upon repeated attacks of cholelithiasis and localized peritonitis, developed a stenosis of the duodenum as the result of rupture into it by the calculi containing gallbladder and pericholecystitis. The symptoms of the case pointed to the existence of a carcinoma engrafted upon an old ulcer. A large mass could be felt in the epigastrium; a test-meal showed the absence of free hydrochloric acid and the presence of lactic acid; the peristaltic waves were reversed; there was melana and cachexia. For several years symptoms pointing to gastric ulcer had preceded. Gastroenterostomy was followed shortly after by death. [E.L.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Craniotomy.—Voorhees³ believes that craniotomy remains a proper procedure in certain cases, as in dealing with a monstrosity; or when the fetus is larger than the parturient canal and is dead when first seen by the physician; it may also be proper in case of a nonviable child when the mother's life is in danger and she is not in a condition to bear a cutting operation. He describes the technic of the operation and gives the statistics of the Sloane Maternity Hospital showing that since the founding of that institution, out of 11,796 obstetric cases there were 96 craniotomies with a mortality of 26. In 64 cases the mother's condition was such as to warrant no other procedure. There were at least 11 in which today there would be no hesitation in performing either a symphysiotomy or cesarean section, more probably the latter. Voorhees concludes that the operation of itself should be attended with practically no mortality in the hands of the careful operator, and that the cutting operations, especially cesarean section, should be done more frequently in proper cases, inasmuch as the maternal mortality has been reduced almost to nothing by the improvement of the technic of these operations, and inasmuch as almost every baby can be saved. [v.k.]

Chloroform in Gynecologic Practice.—In the University clinic of Munich the results in 500 cases of pure chloroform narcosis have been tabulated with the greatest accuracy, says

¹ Medical Press and Circular, September 10, 1902.

² Münchener medicinische Wochenschrift, October 28, 1902.

³ Gazette heb. de Médecine et de Chirurgie, October 16, 1902.

⁴ Bull. de l'Acad. de Med. de Paris, July 8, 1902.

¹ St. Paul Medical Journal, October, 1902.

² Wiener klinische Wochenschrift, September 25, 1902.

³ American Journal of Obstetrics, December, 1902.

Evelt,¹ with the object of demonstrating how to anesthetize with the smallest amount of chloroform and the least possible danger. The longest duration of the anesthesia was 216 minutes with the use of 143 grams ($4\frac{1}{2}$ oz.) in a radical abdominal operation. The smallest measure of chloroform used was 4 gm. (1 dram) with a narcosis of 18 minutes, for a curetment. The briefest duration was 10 minutes, for an examination. In 36 cases where there were signs of heart weakening oleum camphoræ was injected subcutaneously. In 10 cases asphyxia and collapse were observed, but no death resulted. A half-hour before administering the chloroform, $\frac{1}{2}$ gr. of morphia was injected subcutaneously. Each patient during the entire operation was in a state of complete anesthesia. The high efficiency of chloroform as an anesthetic in laparotomy was especially noted, because the tension of the parietal peritoneum in such operations is exceedingly painful. In the necessarily high pelvic position in laparotomy and the consequent hyperemia of the brain, the patient comes very readily into a state of complete anesthesia. Evelt describes the method of administering chloroform, its action upon the patient, and the after-treatment. He also quotes the statistics of other clinics and operators, showing that chloroform is extensively and satisfactorily used by many operators in gynecologic practice. [w.k.]

Puerperal Eclampsia: Treatment by Thyroid Extract.
—H. O. Nicholson² notes that when eclampsia threatens the walls of the radial arteries are contracted, there is pronounced and permanent rise in arterial pressure, which increases as convulsions become imminent; the urine is markedly diminished, as also the urea excreted, this pointing to disturbed nitrogenous metabolism. A larger supply of iodothyronin is needed in the pregnant than nonpregnant state and the gland undergoes enlargement. When the supply becomes suddenly insufficient toxic substances, which may be intermediate or imperfectly converted products of nitrogenous metabolism, enter the blood, causing arterial contraction, especially in the kidneys. Thyroid extract favors complete metabolism and relaxes spasm of the arterioles, reestablishing secretion of urine. It is very valuable as a prophylactic. With diminished urine, edema, headache, and vomiting .3 gm. (5 grains) should be given twice daily. In suppression of urine the dose must be pushed to thyroidism, 10 or 15 grams by mouth or hypodermics of liquor thyroidei being given every hour if necessary. [H.M.]

Management of Breech Presentation.—Porter³ estimates that breech presentation occurs once in about 50 cases of labor, and the fetal mortality is estimated at from 10% to 35%. Breech cases require careful supervision, and are usually tedious. Serious delay is likely to occur with the breech at the brim, in the pelvis, or with the delivery of the head. The first condition may become a serious matter, particularly if the membranes are ruptured, since retraction of the uterine walls may interfere with uteroplacental circulation. With the breech delayed at the superior strait, the usual teaching is to bring down one or both legs and make traction. This plan is excellent if the cervix is well dilated or easily dilatable; but if the dilation of the cervix is imperfect, requiring considerable force for its completion, it is a questionable procedure. The legs in advance may form a powerful dilator, but the maximum diameter is insufficient to prepare the soft parts for the prompt passage of the head. Greater dilation is inevitable if the thighs be allowed to remain flexed and the legs extended along the body of the child. If the breech is carried through the cervix and over the perineum, with the legs in this position, the dilation is generally sufficient to permit the ready extraction of the head. Hunter originally advised bringing down the legs in the above condition, but he later admitted the danger and advised against it, as in nearly every such case in which he brought down the legs he lost the child. When the shoulders appear the arms should be swept down over the face, and as the head enters the pelvis it should be crowded down with the hand, keeping the pelvic curve in mind. Pressure over the fundus with the other hand is a valuable aid. The proper axis in which to make traction may best be made by the bimanual method, and failure, if it comes, will be due to traction in the

wrong axis, rather than lack of sufficient flexion. Have the forceps always in readiness. If in a given case it is possible to deliver the after-coming head, it can and must be done with promptness. [w.k.]

Causes, Symptoms, and Treatment of Muscular Insufficiency of the Nonpregnant Uterus.—Theilhaber¹ has made a special study of cases of prolonged menstruation, of menorrhagia, and metrorrhagia, and concludes that in very many of the cases the condition is analogous to the hemorrhage after parturition, *i. e.*, it is due to an inability of the weakened uterine muscle to contract sufficiently. From a pathologic study of 61 uteri, and from numerous clinical observations, he distinguishes between six different types of insufficiency of the uterine muscle: 1. Hypoplasia of uterine muscle occurring in young girls; the uterus is often larger than normal, due to hyperplasia of the connective tissue; the bloodvessels are abnormally well developed. 2. Degeneration of the uterine muscle, the result of infections, of anemia, and chlorosis. 3. Myofibrosis, a sign of the approaching menopause. 4. Congested, enlarged uterus, the result of adnexal and peri-uterine disease. 5. Myomatous uterus; the profuse bleeding is caused by an increased arterial blood supply and venous stasis. 6. Subinvolved uterus. In most of these the uterus is larger and thicker than normal, its mucous membrane hyperplastic, its contractions are weak, and there is venous stasis; leukorrhœa results on account of the increased blood supply, and the connective tissue increases in quantity at the expense of the muscular tissue. During menstruation the contractions become more severe, and the bleeding becomes profuse. The treatment consists of tonics to improve the general condition of the patient, abdominal massage, intrauterine irrigations, local application of irritants to the uterine cavity, the introduction of specially devised instruments, the galvanic current, vaporization, hot and sometimes cold vaginal irrigations, and ergotin, to incite contractions; cool sitz baths, hydrastis canadensis, stypticin, and scarification glycerin tampons diminish the blood supply and lower the blood-pressure. Many cases are greatly improved by a change of climate, baths of different kinds, regulation of diet, and other similar factors. [E.L.]

Interpretation of the Histology of the Villi from Early Intrauterine and Extrauterine Specimens: The Syncytium.—Stahl,² from the study of eight specimens, six intra- and two extrauterine, concludes that the syncytium with its cells, both layers, is fetal in origin. It is the peripheral, muciparous stroma of the chorion or the villus as modified and added to by the ameboid activities of the nuclei (Langhans) upon their surrounding environmental tissues. There is no distinct or technical cell structure presented in the so-called Langerhans cell; there is only a characteristic nucleus present. Part of the nuclei in the syncytium become corpuscles of the blood, and this seems not an untoward ultimate function for the nuclei. Again, in a specimen, maternal blood corpuscles are seen to penetrate through, or are absorbed by, the outer layer of the syncytium and nuclei; they extend unaltered to the inner row, but not beyond. The early chorion presents externally a protoplasmic periphery, containing nuclei, the so-called Langerhans cells, forming the early or primal syncytium. To the syncytium, with its nuclei, are given as physiologic function the properties of attacking, dissolving, and assimilating its environmental tissues, to furnish nutrition to the growing ovum. The villus is a bud, a sprout of the chorion. There is a great difference in function between the decidual cell with its apparent distinct limiting membrane and the nuclear cell without such limiting membrane. The large white decidual cell is essentially a defender of maternal tissue; the syncytial nucleus, on the contrary, is a rover, a freebooter cell, which, before it consumes maternal tissue, must paralyze, hence the necessity for a free surrounding neutralizing plasma. The picture of the early villus suggests a gelatinous tissue, expansion and rapid growth, with great nuclear activity. The picture of the mature villus suggests a connective tissue, consolidation (fibrosis) and early decadence, with little nuclear activity. [w.k.]

¹ Münchener medicinische Wochenschrift, December 2, 1902.

² Medical Press and Circular, September 10, 1902.

³ American Journal of Obstetrics, December, 1902.

¹ Münchener medicinische Wochenschrift, October 14 and 21, 1902.

² American Journal of Obstetrics, December, 1902.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

EDITORIAL COMMENT

Magnesium Dioxid.—Hatch¹ describes the wonderful properties of magnesium dioxid, known under the senseless and misleading trade name of biogen. According to this author, magnesium dioxid gives up an atom of oxygen when brought in contact with any substance electrochemically more positive than magnesium. He says, without supporting his statement, however, by statement or citation of experimental proof, that this liberation of oxygen takes place in the blood after the internal administration of magnesium dioxid. It is quite true, as Dr. Hatch says, that any substance that can be introduced into the blood through the ordinary channels and there liberate oxygen has a very valuable place in therapeutics. Theoretically, however, there are a number of difficult and apparently insurmountable chemico obstacles in the road of such action, and one naturally wishes other evidence of the existence of such virtues in a new compound than the mere statement that it will decolorize urine stained with methylene blue. Dr. Hatch further asserts that the underlying etiologic factor of pernicious anemia and chlorosis is a lack of oxygen in the system, and that consequently the most rational treatment is an oxygen-furnishing substance such as magnesium dioxid. We cannot bring ourselves to accept his idea of the pathogenesis of these affections. We are firmly convinced that the blood can obtain more oxygen from a lung filled with fresh air than from all the oxygen-liberating drugs in creation, and if oxygen was all that was necessary to remove the underlying process of diseases, they would never have existed.

REVIEW OF LITERATURE

Treatment of Tuberculous Peritonitis by Gelatinized Serum.—Lafond-Grellety² reports the case of a woman aged 36, the victim of tuberculous peritonitis with a tendency to ascites, who was cured by the injection of gelatinized serum into the peritoneal cavity. He employed 20 cc. (5 drams) of a 5% solution of gelatin at the temperature of 98.6° F. The injection caused pain lasting about an hour, but caused no rise in temperature or cutaneous reaction. After a few days the hypogastric enlargement had entirely disappeared. However, since the hypogastrium remained tender to pressure, Lafond-Grellety made another injection under the same conditions as the first. In less than a week all painful phenomena had ceased and four months later the patient was considered cured; neither gait nor position produced the least painful sensation in the abdomen, and the general health was good. [L.F.A.]

Clinical Experiences with Iodothyryn.—Roos³ has used iodothyryn with good results in parenchymatous goiter and cretinism of children, and also in fibrous struma, when associated with iodine locally. Cystic goiter and cretinism in adults are not improved appreciably by the remedy. He advises it in obesity and uncomplicated cases of arteriosclerosis because of favorable experimental evidence; his clinical successes have been less evident. Several cases of long standing psoriasis have improved considerably under its use. The dose of iodothyryn for adults is from 1 to 2 grams (15-30 grains) daily; for children in proportionate doses. An interval of several days should elapse after it has been administered for from five to seven days. [E.L.]

Subconjunctival Injections of Sodium Cinnamate.—A. K. Letzenious² obtained good results from the employment of subconjunctival injections of sodium cinnamate in various forms of keratitis, ulcers of the cornea, iritis, iridochoroiditis, iridocyclitis, scleritis and episcleritis. In all these affections the drug reduces very materially the pain which is usually

present. The effects on the lesion itself are more marked in corneal affections; alterations of the iris and choroid are less influenced by the treatment. In suppurative lesions the injections do more harm than good. Before giving the injections, the eye is first rendered aseptic and anesthetized with a cocaine solution; about .3 cc. (5 minims) of a 1% solution of chemically pure sodium cinnamate is then injected beneath the conjunctiva. These injections are but slightly painful and may be repeated every two days, or even daily, without producing any reaction, excepting a slight hyperemia. [L.F.A.]

Turpentine in Diseases of the Urinary Tract.—Liégeois¹ recalls that Oesterley employs turpentine as a diuretic in edema due to Bright's disease, as follows:

Digitalis leaves	1 gram (15 grains)
Extract of squill	1.4 grams (22 grains)
Turpentine	1.4 cc. (22 minims)
Powdered licorice	a sufficient quantity

For 50 pills. One to 10 daily.

Lépine employs terpin or turpentine bihydrate in the same condition, but in smaller dose, usually about .4 gram (6 grains). In cases of chronic pyelitis turpentine has given good results when combined with quinin in order to overcome the tendency of turpentine to upset the stomach. It may be given as follows:

Venice, Bordeaux or Canada turpentine, } of each . 0.1 gram (1½ grains)
Extract of quinin,

For one pill. Three may be taken during the principal meals.

In cases of chronic pyelitis with formation of calculi, the following may be used:

Canada balsam } of each . . . 0.1 gram (1½ grains)	
Balsam of Peru	
Calcined magnesia	a sufficient quantity

For one pill. Three may be taken during the principal meals.

The balsam of Peru in this prescription is somewhat eupeptic in character; it increases the anticatarrhal properties of the turpentine, it prevents ammoniacal fermentation of the urine following the transformation of the cinnamic and benzoic acids which it contains into hippuric acid, and it is also said to aid in the expulsion of the calculi. Turpentine produces good results and sometimes a cure in chronic mucopurulent catarrh of the bladder in old people. Martinet administers .5 cc. (8 minims) of the spirit of turpentine daily, increasing the dose gradually. In the author's experience 10 drops of the spirit of turpentine daily has given the best results. In hematuria turpentine may be used only in those cases of chronic pyelitis in which the hemorrhage arises from the pelvis of the kidney. Under these circumstances Albert Robin employs

Ergotin	4 grams (1 dram)
Gallic acid	0.5 gram (7½ grains)
Syrup of turpentine	31 grams (1 ounce)
Solution of lime-juice	124 grams (4 ounces)

One dessertspoonful every two hours. [L.F.A.]

Treatment of Ozena.—Bordier and Collet² report that they have used electric currents of high frequency in the treatment of two cases of ozena, with very good results. The current was applied by means of a special electrode with which it could penetrate far into the nasal cavities. The applications were given twice a week for a period of about two minutes at each application; later they were given once every eight days. Bordier and Collet consider the application of electricity in this form one of the best and most energetic methods of treating ozena. [L.F.A.]

Balsam of Peru in the Treatment of Bronchitis.—Huchard³ employs balsam of Peru in the treatment of chronic bronchitis, as follows:

Balsam of Peru	0.05 gram (.8 grain)
Balsam of Tolu	0.05 gram (.8 grain)
Venice turpentine	0.05 gram (.8 grain)
Powdered opium	0.02 gram (.3 grain)

For one pill. Five or six daily. [L.F.A.]

The Turkish Bath in the Treatment of Tetanus.—S. Zlotovsky² states that the Turkish bath is an excellent means

¹ Med. Examiner, 1902, 12, 569.

² La Semaine Médicale, No. 38, September, 17, 1902, p. 312.

³ Münchener medicinische Wochenschrift, September 30, 19 .

¹ Journal des Praticiens, Vol. xvi, No. 40, 1902, p. 625.

² La Semaine Médicale, No. 38, September 17, 1902, page 312.

³ Journal des Praticiens, Vol. xvi, No. 21, 1902, page 332.

of combating tetanus of traumatic origin when antitetanic serum is not obtainable. The temperature must be maintained at from 102° to 120°, night and day, and the patient must take a hot bath every three hours lasting 30 minutes. This treatment must be continued for at least 15 days. By this means the trismus and opisthotonos soon disappear and the patient recovers gradually. [L.F.A.]

Treatment of Soft Chancre with Salicylic Acid.—Szanto¹ employs the following ointment of salicylic acid in the treatment of soft chancre:

Salicylic acid 1 gram (15 grains)
Tincture of benzoin 2 grams ($\frac{1}{2}$ dram)
Vaselin 30 grams (1 ounce)

The diseased area is first washed with a solution of corrosive sublimate, then the ointment is applied on a piece of gauze, and this is covered with a dry dressing, which must be changed every two days or oftener, depending on the amount of secretion. In five cases thus treated the secretion ceased, and the wound healed very rapidly. [L.F.A.]

The Soziodolates in the Treatment of Conjunctivitis.—A. Chtchepinsky² employs the soluble salts of soziodolic acid (biiodoparaphenolsulfonic acid), especially sodium soziodolate or zinc soziodolate, in acute or chronic conjunctivitis in a 2% to 6% solution. In mild cases he confines himself to simple lavage, at first with a medicated solution, then with water; in the graver forms he begins by freeing the lids and conjunctiva from pus and the products of secretion, then he drops two or three minims of the soziodolate solution into the conjunctival sac. Usually this is done once a day, but it may be repeated morning and evening. In the majority of cases it causes a burning sensation which diminishes in five minutes, to disappear completely at the end of about 15 minutes, without causing an increase in the hyperemia or photophobia. In some cases it is not accompanied by any disagreeable sensations. Under this treatment the inflammatory phenomena quickly disappear; the purulent secretions become purely catarrhal. In Chtchepinsky's experience, zinc soziodolate is particularly efficacious against acute conjunctivitis, as well as in subacute outbreaks of chronic conjunctivitis. [L.F.A.]

Traumatic Tetanus Treated by Baccelli's Method, Resulting in Death.—Chauffard³ reports the case of a man, aged 40, who was seized with grave tetanus as the result of getting dirt in a wound while intoxicated. Injections of carbolic acid, although practised from the beginning, according to the method of Baccelli, and associated with injections of antitetanic serum, caused no improvement. Death occurred 29 hours after onset of the symptoms. [L.F.A.]

Mercurial Injections in the Treatment of Locomotor Ataxia.—Leredde⁴ believes that much benefit can be obtained by mercurial injections in locomotor ataxia, and cites one case in which this treatment resulted in marked diminution of the painful phenomena of the disease. Any mercurial preparation may be employed, but it should be given hypodermically in doses sufficient to produce almost the full physiologic effects of the drug. He states that in his opinion the failures reported from this treatment have been due to insufficient dosage. [L.F.A.]

Sulfur as a Substitute for Iodoform.—L. A. Kharitonov⁵ finds that sulfur exercises a similar action to iodoform on diseased tissues, without the least danger of accident by absorption. It is also odorless and inexpensive. He first washes the wound with a 0.5% solution of potassium permanganate, then dusts it with crystallized or precipitated sulfur. In the treatment of soft chancres sulfur seems to produce a much more rapid and energetic effect than iodoform. [L.F.A.] [There is only one substitute for iodoform—another substance of the same appearance, odor, composition, and name. s.s.c.]

Hot-air Baths in Dermatology.—Dauban⁶ recommends the use of hot-air baths in disturbances of cutaneous secretion, acute inflammatory dermatoses and all forms of dermatitis

induced by external causes. It has also been used successfully in the treatment of lupus and soft chancre. By this means the local circulation is stimulated, diapedesis is facilitated and phagocytosis is increased. Certain microorganisms are also destroyed by high temperatures. The local pain and itching are relieved. The baths should last from 15 to 30 minutes, care being taken that the patient is not burned by direct contact with the apparatus. [L.F.A.]

Treatment of Nervous Diabetes.—Malbec¹ directs that patients receive the usual diet for this disease. He also prescribes a daily cold douche lasting 15 to 20 seconds, followed by brisk friction of the entire body with a coarse towel. For eight consecutive days the patient should be given the following:

Antipyrin 1 gram (15 grains)
Sodium bicarbonate 1.5 grams (22 grains)

For 20 cachets; one cachet before the two chief meals.

During the next eight days one of the following pills should be taken with each meal:

Extract of valerian 0.2 gram (3 grains)
Extract of belladonna 0.01 gram ($\frac{1}{8}$ grain)
Strychnin arsenate 0.001 gram ($\frac{1}{81}$ grain)

[L.F.A.]

Treatment of Epistaxis by Penghawar Djambi.—A. Weber² reports the case of an old woman suffering from epistaxis which was rebellious to all treatment. Her physician was in the habit of tamponing the anterior and posterior nasal fossas, after having tried all other hemostatic measures. When first seen by Weber the patient was very anemic, the nares were closed with an enormous tampon of gauze, which had not stopped a continuous slow oozing of blood over the upper lip for more than 10 days. This tampon was reinforced, but as the hemorrhage was not controlled when seen the following day, the tampons were removed and the nasal fossas washed thoroughly. By the aid of a forceps a quantity of penghawar djambi about the size of a pea was introduced into the nostril to the apparent origin of the hemorrhage. The bleeding ceased instantly and did not occur again. Since this case Weber has used the drug exclusively in the treatment of epistaxis and it has never failed him. Penghawar djambi belongs to the fern family and grows in Java, Sumatra, and Borneo. The yellowish, silky hairs of the plant are used as a hemostatic. [L.F.A.]

Treatment of Epilepsy by the Calcium Salts.—E. Audenino and A. Bonelli³ have noticed a decrease in the absorption of calcium in a certain number of epileptic patients. By reason of this they have treated the disease by various preparations of calcium. Ten patients, varying from 14 to 37 years of age, were given either lime-water, calcium bromid, calcium carbonate or lactophosphate for a certain length of time. In almost all cases this was followed by a diminution in the gravity and the frequency of the convulsive attacks; in one case the attacks disappeared entirely for a period of 40 days, and in another for 56 days. The absorption of calcium by the intestines being sometimes very insufficient, the authors treated a second series by the hypodermic injection of a 1% solution of calcium chlorid in the daily dose of from .02 to .06 gram ($\frac{1}{2}$ to 1 grain) of the salt, or by the injection of a 1-30 solution of calcium lactophosphate in the dose of from .3 to .6 gram (5 to 10 grains) daily. Of four patients thus treated, in three the convulsions disappeared during the course of treatment. Audenino and Bonelli believe that the administration of the calcium salts distinctly reduce the number of epileptic seizures. [L.F.A.]

FORMULAS, ORIGINAL AND SELECTED.

An Ointment for Painful Rheumatic Joints.—Mau-range⁴ recommends the following:

Methyl salicylate 23 grams (6 drams)
Guaiaacole } of each . 5 cc. (80 minims)
Spirit of turpentine }
Lanolin 15 cc. (4 drams)
Vaselin 23 grams (6 drams)

This should be applied rapidly to the painful joint and covered immediately with a layer of taffeta. The application may be renewed twice daily. [L.F.A.]

¹ La Médecine Moderne, Vol. xiii, No. 37, 1902, p. 297.

² La Semaine Médicale, No. 31, July 30, 1902, p. 256.

³ La Revue Médicale, No. 435, 1902, page 713.

⁴ Bulletin Général de Thérapeutique, Vol. cxliiv, No. 12, 1902, page 437.

⁵ La Semaine Médicale, No. 38, September 17, 1902, page 312.

⁶ Journal des Praticiens, Vol. xvi, No. 36, 1902, page 570.

¹ Bulletin Général de Thérapeutique, Vol. cxliiv, No. 9, 1902, p. 352

² Journal des Praticiens, Vol. xvi, No. 44, 1902, p. 702.

³ La Semaine Médicale, No. 38, September 17, 1902, p. 311.

⁴ Bulletin Général de Thérapeutique, Vol. cxliiv, No. 13, 1902, p. 512.

For Hives.—

Picrotoxin002 to .003 gram ($\frac{1}{30}$ to $\frac{1}{20}$ gr.)
 Ergotin13 gram (2 grs.)
 Mix. One pill or capsule every 2, 3, or 4 hours. [s.s.c.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended January 3, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
California:	San Francisco.....Dec. 14-21.....	7	
Colorado:	Denver.....Dec. 6-20.....	11	
Illinois:	Chicago.....Dec. 20-27.....	3	
Indiana:	Evansville.....Dec. 20-27.....	1	
	Indianapolis.....Dec. 20-27.....	37	4
	Kokomo.....Dec. 20-27.....	1	
	South Bend.....Dec. 20-27.....	1	
Kentucky:	Lexington.....Dec. 20-27.....	1	
Maine:	Portland.....Dec. 20-27.....	1	1
Massachusetts:	Boston.....Dec. 20-27.....	13	6
	Somerville.....Dec. 20-27.....	1	
Michigan:	Detroit.....Dec. 13-27.....	93	1
	Grand Rapids.....Dec. 20-27.....	8	
Mississippi:	Natchez.....Dec. 23.....	10	
Missouri:	St. Louis.....Dec. 14-21.....	26	
Nebraska:	Omaha.....Dec. 20-27.....	9	
New Hampshire:	Manchester.....Dec. 20-27.....	7	
	Nashua.....Dec. 20-27.....	8	
New Jersey:	Camden.....Dec. 20-27.....	1	
	Jersey City.....Dec. 2-28.....	1	
New York:	Binghamton.....Dec. 20-27.....	1	
	Buffalo.....Dec. 13-20.....	2	
Ohio:	Cincinnati.....Dec. 19-26.....	15	
	Cleveland.....Dec. 20-27.....	7	4
	Toledo.....Dec. 6-27.....	24	2
	Warren.....Dec. 6-27.....	5	1
Pennsylvania:	Altoona.....Dec. 20-27.....	1	
	Erie.....Dec. 20-27.....	3	
	Philadelphia.....Dec. 20-27.....	25	3
	Pittsburg.....Dec. 20-27.....	23	3
	Warren, Borough and County, Dec. 10-17.....	5	
South Carolina:	Charleston.....Dec. 13-27.....	4	
South Dakota:	Sioux Falls.....Dec. 20-27.....	1	
Tennessee:	Memphis.....Dec. 20-27.....	4	
Utah:	Salt Lake City.....Dec. 11-27.....	20	
Washington:	Tacoma.....Dec. 15-21.....		3
Wisconsin:	Green Bay.....Dec. 21-28.....	1	
	Milwaukee.....Dec. 20-27.....	5	

SMALLPOX—FOREIGN.

Austria:	Prague.....Nov. 29-Dec. 6.....	24	
Belgium:	Brussels.....Nov. 29-Dec. 6.....		1
	Ghent.....Nov. 22-29.....		3
Canada:	Winnipeg.....Dec. 13-20.....	1	
Great Britain:	Leeds.....Dec. 6-13.....	6	1
	Liverpool.....Dec. 6-13.....	34	1
	Manchester.....Nov. 29-Dec. 6.....	3	
	Sheffield.....Nov. 29-Dec. 6.....	5	
India:	Bombay.....Nov. 25-Dec. 2.....		2
	Karachi.....Nov. 23-30.....	1	
Italy:	Palermo.....Nov. 29-Dec. 6.....	6	2
Malta:	.....Nov. 23-30.....	1	
Mexico:	City of Mexico.....Dec. 7-14.....	2	3
Russia:	Moscow.....Nov. 22-29.....	5	2
	Odessa.....Nov. 29-Dec. 6.....	13	2
	St. Petersburg.....Nov. 29-Dec. 6.....	5	2
Straits Settlements:	Singapore.....Nov. 1-13.....		5

YELLOW FEVER.

Colombia:	Panama.....Dec. 8-22.....	9	2
Ecuador:	Guayaquil.....Dec. 6-13.....		10
Mexico:	Veracruz.....Dec. 13-20.....	14	3

PLAGUE.

India:	Bombay.....Nov. 25-Dec. 2.....	120	
	Calcutta.....Nov. 22-29.....	12	
	Karachi.....Nov. 22-30.....	11	10
	Madras.....Nov. 22-28.....	1	

CHOLERA.

India:	Calcutta.....Nov. 22-29.....	42	
Japan:	Osaka and Hogo.....Nov. 8-23.....	3	2
Straits Settlements:	Singapore.....Nov. 1-15.....		22

Changes in the Medical Corps of the U. S. Army for the week ended January 3, 1903:

The following named officers now at San Francisco, Cal., will proceed to their respective homes, where they are authorized to await their honorable discharge from the service on February 1, 1903: Captains Elmer S. Tenney, William E. McPherson, Francis J. Pursell, assistant surgeons United States Volunteers.

DESHON, Major GEORGE D., surgeon, United States Volunteers (captain, assistant surgeon, United States Army), is relieved from further duty in the division of the Philippines, and will proceed to San Francisco, Cal., and report by telegraph to the adjutant-general of the Army for orders.

BROWNLEE, First Lieutenant CHARLES Y., assistant surgeon, is granted leave for twenty days. So much of orders of December 20 as direct Lieutenant Charles Y. Brownlee, assistant surgeon, to sail from San Francisco, Cal., January 1, is amended so as to direct him to report to the commanding general, department of California, for transportation to the Philippine Islands on the transport to leave San Francisco, Cal., February 1, and upon arrival at Manila to report to the commanding general, division of the Philippines, for assignment to duty.

REYNOLDS, First Lieutenant CHARLES R., assistant surgeon, now at San Francisco, Cal., will proceed to Fort Washington for duty, to relieve First Lieutenant Frederick F. Russell, assistant surgeon, who will proceed to Fort Wingate for duty.

THORP, CHARLES W., contract surgeon, now at Marcellus, Mich., will proceed to Fort Grant for duty, to relieve Captain Charles E. B. Flagg, assistant surgeon, who will proceed to San Francisco, Cal., for assignment to duty with troops en route to the division of the Philippines, and upon arrival at Manila, P. I., will report for assignment to duty.

POWELL, DWIGHT C., contract surgeon, now at Logansport, Ind., will proceed to Fort Barancas for duty, to relieve Captain Thomas J. Kirkpatrick, assistant surgeon, who will proceed to San Francisco, Cal., for assignment to duty with troops en route to the division of the Philippines, and upon arrival at Manila, P. I., will report for assignment to duty.

The following changes in stations and duties of officers are ordered: Major Charles Willcox, surgeon, now at San Francisco, Cal., will proceed to Fort Totten for duty, to relieve Major Edwin F. Gardner, surgeon; Major Gardner will proceed to Fort D. A. Russell for duty, to relieve Captain William F. Lewis, assistant surgeon; Captain Lewis, upon the expiration of the leave heretofore granted him, will comply with the provisions of orders of November 24.

WELLS, Captain GEORGE M., assistant surgeon, is relieved from further duty at Fort Wadsworth, to take effect upon the expiration of his present leave, and will then proceed to Fort Bayard for duty, to relieve First Lieutenant Horace D. Bloombergh, assistant surgeon, who will proceed to San Francisco, Cal., for assignment to duty with troops en route to the division of the Philippines, and upon arrival at Manila, P. I., will report for assignment to duty.

LYSTER, First Lieutenant WILLIAM J., assistant surgeon, will proceed to Fort Wayne for duty.

Orders of November 21 are so amended as to direct Major WILLIAM H. CORBUSIER, surgeon, upon the expiration of his present leave to proceed to Fort Crook for duty, to relieve Captain Paul F. Straub, assistant surgeon, who will proceed to San Francisco, Cal., for duty to accompany troops to the Philippine Islands, where he will report for assignment to duty.

CATERMOLE, Captain CHARLES A., assistant surgeon, United States Volunteers, now at San Francisco, Cal., will proceed to his home, where he is authorized to await his honorable discharge, February 1, 1903.

BEATTY, WALTER K., contract surgeon, is granted leave to include January 31, on account of sickness.

Changes in the Medical Corps of the U. S. Navy for the week ended January 3, 1903:

BRISTER, J. M., assistant surgeon, detached from the Frolic and ordered to the El Cano—December 24.

WEBB, U. R., assistant surgeon, detached from the Iris and ordered to the Naval Station, Cavite, P. I.—December 24.

DUNN, H. A., assistant surgeon, detached from the Vicksburg and ordered to the Frolic—December 24.

CRAWFORD, C. A., passed assistant surgeon, detached from recruiting duty and ordered home to wait orders—December 29.

ANGENY, G. L., passed assistant surgeon, detached from the Lancaster and ordered to the Essex—December 29.

PLUMMER, R. W., assistant surgeon, detached from the Naval Hospital, Chelsea, Mass., and ordered to duty at Chattanooga, Tenn.—December 29.

FREEMAN, G. F., assistant surgeon, detached from the Essex and ordered to duty at Naval Hospital, Chelsea, Mass.—December 29.

ULSH, W. H., assistant surgeon, retired from active service by reason of disabilities incurred in the line of duty—December 19.

CURL, H. C., passed assistant surgeon, ordered to the Naval Hospital, Mare Island, Cal., for treatment—December 30.

Changes in the Public Health and Marine-Hospital Service for the week ended January 1, 1903:

BAILHACHE, PRESTON H., surgeon, leave of absence for seven days on account of sickness, under paragraph 179 of the regulations.

MATHEWSON, H. S., passed assistant surgeon, granted leave of absence for seven days from December 2, 1902.

GRUBBS, S. B., passed assistant surgeon, detailed to represent the service at meeting of the American Public Health Association at New Orleans, La., December 8-12—December 6, 1902. To proceed to Ensenada, Cal., for special temporary duty—December 12, 1902. To proceed to Mazatlan, Mexico, for special temporary duty—December 30, 1902.

KORN, W. A., assistant surgeon, granted leave of absence for seven days from December 25, 1902, under paragraph 181 of the regulations.

SCHERSCHESKY, J. W., assistant surgeon, to proceed to Charleston, S. C., and assume temporary command of the service during absence, on sick leave, of Acting Assistant Surgeon F. F. Sams—December 31, 1902.

ROBERTSON, H. MCG., assistant surgeon, relieved from duty at Chicago, Ill., and directed to proceed to New York, N. Y. (Stapleton), and report to medical officer in command for duty and assignment to quarters—December 30, 1902.

Promotions.

ACHENBACH, JOHN, to be pharmacist of the first class—December 18, 1902.

MAGUIRE, E. S., to be pharmacist of the first class—December 18, 1902.

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The expense of tuberculosis to the people of the United States after careful estimation by Dr. Biggs, of New York, is placed at \$330,000,000. He first calculates the loss to New York City by putting a value of \$1,500 upon each life at the average age at which deaths from tuberculosis occur. This gives a total value of the lives lost annually of \$1,500,000. But this is not all, for at least nine months prior to death these patients cannot work, and the loss of service at \$1.00 a day, together with food, nursing, medicines, attendance, etc., at \$1.50 a day, results in a further loss of \$8,000,000, making a yearly loss to the municipality of \$23,000,000. For the whole country the 150,000 deaths from tuberculosis represent in the same way a loss of \$330,000,000. Dr. Biggs also says that the total expenditure in the city of New York in the care of tuberculous patients is not over \$500,000 a year, *i. e.*, not to exceed 2% of the actual loss by death, etc. "If this annual expenditure were doubled or trebled it would mean a saving of several thousand lives annually, to say nothing of the enormous saving in suffering." Further evidence of this is shown in the fact that in the last 20 years the total deaths from tuberculosis in New York have decreased instead of increased, notwithstanding that there has been an increase of 70% in the general population.

Dr. Robin and the Crusade Against Tuberculosis.—The New York *Tribune* of last Sunday contained an account sent by cable of a lecture delivered at the Sorbonne by Dr. Albert Robin, of Paris. The account is of course not to be absolutely relied upon, but the conclusion of the lecturer seems to have been that when tuberculosis is once established in the system it is incurable, and that medical science and philanthropy are on the wrong tack, and all that has been previously done in the crusade against tuberculosis is in vain. Robin says that the early stage of predisposition can be determined by "the excess of respiratory consumption and daily organic demineralization or loss of mineral elements of the system." In proof, 36 cases of tuberculosis are summarized, 10, he says, relapsing in six months, 10 in a year, only 5 out of 36 being saved. Then about 14% after all are admittedly cured? In his haste to be dramatic the French scientist forgets that from 25% to 33½% of all postmortems show healed tuberculosis lesions. He also forgets that perhaps as great good

is done the community by the educative influence of those who have been in sanitariums.

We have asked Professor Welch, of Baltimore, to give our readers his opinion in the matter, and he courteously replies as follows:

It is not probable that the newspaper account, to which your telegram calls my attention, of Robin's views is either complete or accurate. He is made to take the position that the modern crusade against tuberculosis is occupied exclusively with the establishment of sanatoria. This of course entirely misrepresents the matter. The establishment of sanatoria is only a part, and a relatively small part, of the prophylactic measures recognized as essential to check the spread of tuberculosis. Dr. Biggs can tell of the other measures, mainly of a preventive nature, which have already made a distinct impression upon the occurrence of tuberculosis in New York. I have no doubt that these other measures taken together outweigh in importance the foundation of sanatoria.

Furthermore Robin is made to assign to sanatoria a function which no enlightened person attributes to them. There is nothing particularly novel in pointing out, as Robin seems to have done, and as many before him have done, that sanatoria are not an agency of prime importance in checking the spread of tuberculosis in the community. More important in this respect and greatly needed in our cities are hospitals for the accommodation of poor patients in more advanced stages of tuberculosis than are suitable for treatment in a sanatorium.

I am absolutely skeptical concerning Robin's claims, as reported in the newspaper, to have discovered a method of positively recognizing a bodily state antedating but essential to infection with the tubercle bacillus. All efforts, he is made to say, should be concentrated upon the cure of this state. It is of course in the management of cases of tuberculosis recognized at the earliest possible date after the occurrence of infection that the greatest benefits of sanatoria are to be expected and have, I believe, been demonstrated. It will be interesting to hear what Dr. Trudeau and others with similar experience have to say concerning Robin's statements as to the large percentage of quick relapses following sanatorial treatment.

The really effective prophylactic measures against tuberculosis are based upon the recognition of the tubercle bacillus as the cause of the disease and upon efforts to prevent infection by removal or destruction of the various sources of infection, of which the most important is the sputum of consumptives. Of the importance of all this nothing appears in the newspaper reports of Robin's communication, but it is hardly conceivable that he fails to recognize it.

It would be a great pity if the sensational and probably misleading statements in the newspaper should check the movement to establish sanatoria and hospitals for tuberculous patients. Mr. Phipps' magnificent donation which seems to contemplate provision both for prevention and for cure of tuberculosis is sure to do an immense amount of good.

Communicability of Tuberculosis by Milk.—Criticism of the ground taken by Koch at the London Congress has been so widespread, and in most instances so acrid, that a careful consideration of the view held by him is really obligatory, since Koch has done too much of value to justify hasty criticism. The *Deutsche medizinische Wochenschrift*, No. 48, 1902, reprints the address by Koch before the Berlin International Congress for Tuberculosis. Koch takes up first the question of the so-called "primary intestinal tuberculosis" in children, and shows that they are by no means so frequent as is claimed by some writers. One and one-quarter years ago the Prussian "Kultusministerium" sent an order to all the Prussian universities to send all cases of primary intestinal tuberculosis which could be considered as due to the use of milk or meat from tuberculous cattle to Koch, and the same order was sent to Heller, of Kiel, who has reported 37.8% of primary intestinal tuberculosis in tuberculous children. But not a single case has been reported to him. The second point made is that if the disease were really transmitted by the products of tuberculous cattle, we should observe epidemics instead of single cases, for the milk of tuberculous cattle as well as the meat is most often consumed by a number of people. Koch calls attention to the fact that the classic case of an epidemic reported by Olliver was later corrected by Olliver himself, who found that the suspected milk had not been consumed by the young persons who had contracted tuberculosis, but by the servants in the institution, none of whom had developed symptoms. None of the single cases reported are, according to Koch's opinion, of any great value, for in not all was an autopsy made, nor were other possibilities of infection excluded. Koch concludes that the harmful effect of the products of tuberculous cattle has not yet been proved. Whether "Perlsucht" and tuberculosis of man are identical is a question not taken up in this paper.

Medicine and the Isthmian Canal.—In our issue of August 16 we called attention to the profession's responsibility in the construction of the Isthmian canal, and the duty of our government to see to it that a good force of medical men, hospitals, etc., should be provided for the thousands of men to be employed in this great work. We are glad to see that the thought has been taken up by the American Association for the Advancement of Science, and the following resolutions, drawn up by Professor Welch, of Baltimore, at the suggestion of General Leonard Wood, were adopted on January 2, 1903:

Inasmuch as the construction of the Isthmian canal is through a region in which without energetic sanitary control there is sure to be enormous loss of human life from preventable diseases, particularly from pernicious malaria and yellow fever, as well as great waste of energy and of money from disabilities caused by such diseases, and

Inasmuch as the measures for the restraint of these diseases, which have already achieved even their partial extermination in Cuba under American administration, require expert knowledge based upon practical familiarity with tropical diseases, experience in the application of these measures, and large authority in their administration,

Resolved, That the American Association for the Advancement of Science begs most respectfully and earnestly to call to the attention of the President of the United States the importance of appointing as a member of the Isthmian Canal Commis-

sion a medical man possessed of the qualifications indicated. The Association is convinced that the mere employment of such a sanitary expert by the Commission will not be likely to secure the desired results.

Resolved, That the permanent secretary of the Association transmit a copy of these resolutions to the President of the United States.

In General Wood's opinion the only serious problem connected with the construction of the canal is the sanitary one—malaria, yellow fever, and perhaps uncinariasis being the gravest dangers. But in the present state of medical science these diseases are wholly preventable. Our professional record in Cuba is so splendid that every physician will demand that it shall be equaled on the isthmus. Let there be a sanitary expert appointed on the Commission. If in addition to this General Wood himself should be placed at the head of the Commission, every safeguard and assurance both of administration, efficiency and hygienic security would be assured.

The Lowering Deathrate.—In England the death-rate has been reduced more than 11% in the last thirty years. This is shown in a table taken from *Public Health*, which gives the mortality in comparison, for five-year periods, at all ages and of infants, as follows:

Years Included.	Deaths at all Ages per 1,000 Living.	Death under One Year per 1,000 Births.
1851-1855	22.7	157
1856-1860	21.8	152
1861-1865	22.6	151
1865-1870	22.4	157
1870-1875	22.0	153
Average	22.3	154
1876-1880	20.8	144
1881-1885	19.4	139
1886-1890	18.9	145
1891-1895	18.7	151
1896-1900	17.7	156
Average	19.1	147

In the United States the rule holds as well in all except two cities, Baltimore and San Francisco. It is believed that the explanation of this anomaly lies in the fact that the statistics of fifteen years ago in Baltimore were inaccurate, and in San Francisco the higher rate is due to the lessened number of Chinese. The *New York Sun* is responsible for the following table:

City.	1887.	1902.
Manhattan	26.27	19.73
Brooklyn	22.71	18.14
Philadelphia	22.04	17.67
Chicago	20.21	13.88
Boston	24.97	19.70
St. Louis	20.71	17.72
Baltimore	19.16	19.63
San Francisco	18.27	19.06
Washington	22.40	21.83
New Orleans	25.34	21.24
Pittsburg	22.04	19.70
Louisville	23.30	16.02
Savannah	23.77	15.21
Cincinnati	19.97	18.88
Albany	23.81	17.59
Denver	17.10	14.30
Detroit	18.65	13.85

Gratifying as these figures are it should not be forgotten that the mortality would be at least one-half less if the knowledge of the prevention of disease gained by medical science were realized in our social life.

Nontaking Vaccinations.—Dr. Eugene Stadelman, of Descubridora, Dgo., Mexico, writes:

Vaccination is compulsory in the Republic of Mexico, and each spring we receive notice to vaccinate all children who have

not been successfully vaccinated. Two years ago I vaccinated among several hundred children an American child about a year old. This attempt proved unsuccessful, as did eleven others which were made upon this child during the six months following, although I took special care to procure the best vaccine virus. The father of the child had seen considerable smallpox during his residence in this country and was very much alarmed lest the baby should contract the disease. It was due to his earnest entreaty that I sent to the United States for a fresh supply of virus. One week after the twelfth vaccination the child's body broke out in the most beautiful eruption of vaccinia; beginning on the chest it spread during one night to the arms, face, legs, feet, and hands. The eruption was pustular all over the body but was not umbilicated, and it entirely disappeared by drying and desquamation within six days after the appearance of the first pustule. The site of the vaccination became slightly edematous but did not cause much trouble. It did, however, leave a very well marked cicatrix.

Dr. George W. Sargent, of Seneca Castle, N. Y., writes that after four or five unsuccessful vaccinations by others he has recently repeated the operation four times without result upon a blacksmith 50 years of age.

Dr. C. W. Fenn, of San Diego, says that "if the statement and memory of an adult female may be relied on, mine was the eighteenth and the only successful vaccination."

A new field of work for nurses has been opened in New York City. It was found that the rules of the Board of Health when thoroughly executed by the physicians who visited the schools periodically resulted in keeping away a large number of pupils afflicted with epidemic disorders. Sending them home did not cure them and many fell behind their classes or did not return at all. It seemed as if the sanitary regulations or the school attendance must be sacrificed. Then a nurse suggested that two trained nurses should be assigned to school buildings in the neglected districts, and should treat in the schools all minor disorders, and visit the homes of children requiring more serious attention to instruct their mothers as to what should be done for them—how, for instance, boric acid should be used in sore eyes, and simple remedies administered for colds and other troubles. The results of this plan, it is said, have even exceeded the expectations and in a few weeks nearly all the children who were out of school on account of various disorders were back. It was also shown that one nurse who took hold of this work sympathetically could look after the children in three or four great buildings, teaching the foreign-born mothers to do most of the work without calling in physicians. The plan has worked so well that the educational authorities have decided to engage nearly a dozen trained nurses to look after some forty buildings, and the innovation promises soon to become an institution. Two considerations should be rigidly observed, first, that the nurses thus detailed shall have been thoroughly instructed in such work by practical physicians, and secondly, that the work itself should have the supervision of the visiting physicians of the schools.

The Cry of the Cripples.—Dr. Newton M. Shaffer in a recent number of *Charities* tells of the cripples of New York, of their sudden emergence, and of the hopes aroused by the visit of Dr. Lorenz. It was thought that

possibly 100 applications might be received at the Cornell University clinic. Instead of this within a month 2,000 patients were received, examined, classified, and entered for treatment. The sudden appearance of this army of crippled and deformed was an astonishing revelation even to those supposed to be familiar with the facts. In the entire city Dr. Shaffer estimates that nearly 8,000 such child patients were brought under observation in the various hospitals by the interest excited by Dr. Lorenz's visit, "the most of whom for various reasons were not receiving proper care or attention." Dr. Shaffer divides the cripples into four classes: 1, those allowed to go on without treatment; 2, the disappointed and those unsuccessfully treated because of imperfect dispensary treatment; 3, the relapsed patients; 4, the small class of the "floaters."

"Lorenz has gone, but the sufferers remain."

The gifts in 1902 of the charitable, according to the annual cyclopedia of Appleton, amounted to over \$85,000,000, but the amount that can be distributed is a little less than \$70,000,000. The precise figures given are as follows:

Colleges and educational institutions, including schools for manual training	\$20,127,525
Church work, Sunday-schools, and Young Men's Christian Association	7,588,220
Foreign missionary work	263,500
Benevolent societies	4,364,724
Hospitals, nurseries, and asylums	26,480,958
Museums and art institutes	6,372,422
Libraries	2,157,000
Cooper Union	942,440
New York Historical Society	50,000
Total	\$68,346,789

Of the immense amount given for educational purposes five-sixths were contributed by persons still living, while six-sevenths of the total for foreign missionary work came to the boards through bequests of deceased friends. Hospitals and kindred institutions received about half of their increase from persons still living, and half as beneficiaries under wills.

The Drug-store Replacing the Saloon.—The history of much of the prohibition movement shows that radical laws may change the places and the methods of selling liquors, but not the amount. It may also compel the intemperate to change the kinds of drinks and substitute for them various poisons and narcotics. In other words, the drug-store and the grocery-store replace the rum-shop, bad and impure concoctions are used for those more or less pure, and morphin, cocain, etc., are consumed instead of whisky and beer. H. P. Hynson (Am. Pharmaceutical Association) has examined the statistics of the importations of cocain and morphin, and finds that those of cocain have increased over 400% since 1898, and those of morphin and opium over 600%. The medical uses of these drugs have probably lessened. Hynson also investigated the number of customers of the drug-stores addicted to the use of these drugs and he estimates that there are five known to each pharmacist. The W. C. T. U. should work for laws making it a criminal offense to sell such things except upon a physician's prescription.

Pseudoscientific Nonsense.—There was recently received into one of our Philadelphia psychopathic institutions an individual who had for years made a

comfortable living by cooking up nonsensical yarns concerning nonexistent scientific discoveries for the Sunday newspapers. He could give his descriptions such an air of plausibility that the newspaper editors were as completely fooled as the readers. It is suspected that members of his secret brotherhood are today actively at work in the newspaper world. But it is scarcely credible that they have penetrated the universities and are playing there the part of solemn and erudite teachers. The *New York Times* states that "one of Harvard's science staff" is experimenting upon an untutored Indian lad of the forest, with the view of transforming him into "a person of culture and blameless morals," all without effort upon the child's part, and solely by means of the impressions on his mind made during hypnotic trance. The practicability of this miracle is said to be vouched for by a professor of Columbia University, who, we are assured, also holds that the whole world of sinners may be hypnotized past all possibility of backsliding into a state of religious fervor. Blockheads and criminals need only hypnotic suggestion to transform them into paragons of perfect intellectuality and morality. To stop all this and bring this mad professorial world back to sanity, we have need only that a whisper and a wink should be given the S. P. C. A. and the anti-divisionists. Verbum sap!

The Phipps Institution.—For his gift of a million dollars the medical profession will as a unit rise up and call Mr. Phipps blessed! It is, we believe, the greatest single bequest made in the almost universal crusade of civilized nations against tuberculosis. To have been the means of securing it we shall also be delighted to honor Dr. Flick. No less an authority than Dr. Biggs, of New York, has declared that more than one-half of the entire adult population acquires the disease at some time in life. That only about one-seventh die of it shows that Dr. Robin's statements as to the curability of tuberculosis are erroneous, and is a hint to us that in this case cure is demanded as much as prevention. Indeed, cure is prevention, because the sanatorium treatment has a double function, the removal of a source of infection and in this way lessening the spread of the disease, and secondly, returning a cured patient later to the community who will act as an educator in the community in the great principles of prophylaxis. The sanatorium must be looked upon as an educative institution, and this is not the least of its duties, and there is no danger that this aspect will be forgotten either by Mr. Phipps or Dr. Flick. Germany today has sanatoriums for over 20,000 patients, and such institutions are multiplying in every country. Let the good work go on!

Making sewers of our rivers should never have been allowed and so soon as possible should be stopped. There are other ways better and cheaper of the disposal of sewage well known to science which should be put into use. Perhaps the most striking illustration of this folly is the expenditure of \$40,000,000 or \$50,000,000 by Chicago on the drainage canal. It has been demonstrated that the disposal of sewage does not only not require the contamination of running streams, and at an enormous

expense, but that rightly utilized sewage may be made a source of profit. The recent increase of the number of cases of typhoid fever in Chicago is evidence of the egregious sanitary blunder of the drainage canal. It is true that of all the large cities of the world Chicago has the lowest deathrate, but this fact only shows how much the deathrate might be lessened if the mortality were not needlessly increased by typhoid.

A Physician's Aspiration.—As a Christmas card a wellknown busy physician sends to his personal friends a leaflet, signed by himself, reading as follows:

"To do without thought of winning or achievement; to serve without hope of gratitude or recognition; to accept the task and opportunity of the day and ask only strength to do it well; to complain of nothing; to live openly and self-containedly a life of moderation free from ambition—let this and these things be my daily aspiration."

What an exquisite fusion of religion and ethics! In his case love and right do not guide character, but have become character. And words never better expressed the ideal of the true physician. In these days when even our calling is becoming commercialized, when success and fame are illogically sought through the healing office, when men so often write of disease for the sake of their own selfish aims, it is helpful to know that there are doctors free from ambition.

EDITORIAL ECHOES

"Original Articles."—There are some medical writers who seem to be in the habit of having two or more copies made of everything they write and submitting them at the same time to several journals, to be published under the heading of "Original Articles." Such articles are certainly original so far as the authors are concerned, but when published in several journals at the same time they cease to be original as far as the journals which publish them are concerned. Important addresses delivered on important occasions may with perfect propriety be published simultaneously in a number of journals, but papers read before medical societies and papers written for medical journals should, as a general rule, be submitted to that particular journal which the author desires to have publish his paper, and to no other. If for some special reason the author desires to have his paper appear simultaneously in another journal, the editor of the journal to which the article has been first submitted may be requested to send a galley proof to the other journal, with the request that with the article shall be printed a notice that the article is published simultaneously with, and through the courtesy of, the editor of that journal to which it was originally submitted. Our views on this subject are those of the editors of all the best medical journals, and also, we are happy to say, they are the views of the better class of medical writers, those whose contributions we are most desirous of receiving.—[*St. Paul Medical Journal.*]

To Assist Medical Research.—The *New York Times* makes the following announcement: A new fellowship in medicine of the annual value of \$1,200 and tenable two years has been established at Columbia University. The fellowship is to be known as the Proudfit Fellowship, in honor of the late Alexander Moncrief Proudfit, of the class of '92, who left a large bequest to the University. It is established distinctly for research work, and is to be offered to graduates of the College of Physicians and Surgeons to enable them to pursue advanced study and research in internal medicine either in this country or in Europe. Awards will be made once in four years.

AMERICAN NEWS AND NOTES.

GENERAL.

Cholera in the Philippines.—News comes from the War Department at Washington that since the appearance of the plague in the Philippine Islands, September, 1902, the total recorded number of cases was 52,536, of which 37,473, or 71%, resulted fatally.

Army Bill.—One of the interesting features of the measure is a proposition to muster out a Porto Rican regiment on July 1, 1903, with two months' extra pay for each officer and private. The bill also carries with it an appropriation for \$60,000 for a hospital building to be erected at Vancouver barracks.

Vacancies for Assistant Surgeons in the Army.—There are now 35 vacancies in the grade of assistant surgeon in the United States Army. The next examination will be held in Washington next April. After this examination these vacancies will be filled, though it is asserted that some of the vacancies are to be filled by men now passing an examination in the Philippine Islands.

Reorganization of Army Hospital Corps.—Secretary Root has submitted to the House Military Committee a plan for the reorganization of the hospital corps. It is proposed that the titles of hospital steward and acting hospital steward be abandoned and the titles of sergeants, first class, and sergeants be substituted. The grade of corporal is established and privates divided into two classes. It is believed that the proposed legislation will be of material benefit to the medical department.

Precautio[n] to Bar Out Bubonic Plague.—Surgeon-General Walter Wymann, of the Marine Hospital Service, has taken active measures to prevent the introduction of bubonic plague into the ports of the United States. An assistant surgeon of the service has been dispatched to Mazatlan and another to Ensenada, both Mexican shipping ports, the latter situated in Lower California, where the disease is said to be in epidemic form. An effort will be made to prevent the inhabitants of these cities from embarking on ships bound for ports in the United States.

Athletics in the Army.—Major General Bates, commanding the Department of the Lakes, has issued an order to encourage athletics and field sports among soldiers of the United States Army. A part of the order reads as follows: "In order to promote interest among enlisted men in athletic training, one day in each month will be designated as Field Day at each post in this department, and will be devoted to athletic games and exercises. At each post an officer designated by the post commander will superintend the program of exercise, which will be as interesting as possible."

Medical Licenses in the Hawaiian Islands Illegal.—Because of errors of those in office some 29 physicians of Hawaii, 16 of whom are from Japan, must now pass new examinations. It appears that the error occurred in allowing the board of examiners to hold office for three instead of two years, as the law provides. During their false tenure of office many licenses were granted which are now declared to be illegal. A disputed point was the admission to practise of Japanese and the requirement that they should be examined in English. The new board, it is asserted, will conduct more rigid examinations than those held heretofore.

Meeting of the American Medical Association, New Orleans, La., May 5-8, 1903.—For this occasion the Southern Railway has authorized a rate of one fare for the round trip from Washington and all prominent points throughout the entire South. Dates of sale will be May 1, 2, 3, and 4, tickets being good for a continuous passage in each direction, with a final limit of 10 days from the date of sale. Tickets can be extended for a longer period, however, provided they are deposited in person by the original purchaser with the special agent at New Orleans not later than May 12, 1903, and a fee of 50 cents is paid at the time of deposit, when the final limit will be extended to a date not later than May 30, 1903.

Hospital Benefactions.—PHILADELPHIA: In adjudicating the estate of the late Thomas Elkinton legacies were bestowed to hospitals as follows: Jefferson Hospital, \$5,000; Orthopedic Hospital, \$5,000; Polyclinic Hospital, \$5,000; University of Pennsylvania Hospital, \$5,000.—The German Hospital and the Mary J. Drexel Home will each receive the sum of \$569,883 from the estate of the late John D. Lankenau, who was formerly president of these institutions. HACKENSACK, N. J.: The late Jacob B. Berdan, of Paterson, bequeathed \$50,000 to the Hackensack Hospital. WEST CHESTER, PA.: Under the will of the late Susanna H. Thomas, of this city, the Chester County Hospital will receive \$1,000. CHAMPAIGN, ILL.: The late Mrs. Isabella D. Harwood, of this city, bequeathed \$2,000 to the Julia F. Burnham Hospital. DETROIT, MICH.: According to the will of the late Dr. George S. Elliott, a prominent dentist of Detroit, his entire estate of \$15,000 will go to the Children's Free Hospital.

EASTERN STATES.

Foot-and-Mouth Disease Stamped Out.—News comes from Boston that the foot-and-mouth disease is now practically eradicated from New England. Those States in which the disease prevailed, namely, New Hampshire, Rhode Island, Maine, Massachusetts, and Vermont, are said to be entirely free from the disease.

Compulsory Vaccination in Melrose, Mass.—According to an announcement made by the Melrose Health Board all persons who cannot show evidence of having been vaccinated within 14 months must submit to vaccination at once or pay a fine of \$5. Ten physicians have been employed for the work and have begun a house-to-house canvass. At present there are no cases of smallpox in the city.

NEW YORK.

Lorenz Orthopedic Charity Hospital.—The *New York Tribune* states that application has been made to the State Board of Charities for approval of the certificate of incorporation for the proposed Lorenz Orthopedic Charity Hospital. The object is to establish a hospital or dispensary for the free treatment of all persons afflicted with deformities, especially congenital dislocation of the hip, to be treated according to the Lorenz method.

Street Car Sanitation.—A sanitary expert employed by a committee of the Merchants' Association of New York City in a letter to that body enumerates the measures which he considers essential to the public health with reference to proper sanitation in street car traffic: "They are the prevention of expectoration; improvement in the existing means of ventilation by means of screens outside the transoms to exclude gusts of wind, and a device whereby the transoms may be operated from the ends of the car; the use of movable floor grating of a nonporous nature and of leather or some other smooth-faced material for seat coverings; electric lights to be placed at the sides of cars above the windows so as to furnish a proper light for reading; cuspidors of ample size to be placed in stations of the elevated railroad, and public toilet-rooms in elevated stations to be kept clean and in order."

Sickness Among Street Cleaners of New York.—It is stated that 40 street cleaners on an average are laid off every day on account of sickness in New York City. A physician acquainted with the circumstances states that their maladies are attributable to their duties, and a large percentage of the diseases that they contract consist of affections of the respiratory organs, tuberculosis being not infrequent. The prevalence of respiratory diseases accounts to a large degree for the using of pipes by the street cleaners, who are permitted by the authorities to smoke while at work. It is claimed that this in many cases prevents the contracting of disease. Since the street cleaners when laid off for illness receive no compensation or remuneration whatever, it is stated that the officials are endeavoring to arrange for the setting aside of the fines of the cleaners for the purpose of creating a fund for the benefit of those who are incapacitated by illness similar to the arrangement which exists in the police department of the city. The majority of those contracting the diseases are cleaners in the downtown districts, especially on the East side, the West side being comparatively free.

PHILADELPHIA, PENNSYLVANIA, ETC.

New Dispensary for Episcopal Hospital.—The Board of Managers of the Protestant Episcopal Hospital at their fifteenth annual meeting decided to erect a separate dispensary building at the cost of \$75,000. A ward for contagious diseases is also to be provided for.

Lectures on Tropical Diseases.—A series of lectures on tropical diseases is being given by Captain Charles F. Kieffer, Surgeon United States Army, at Jefferson Medical College. This is the first series of lectures on tropical diseases which has ever been given in this country. Captain Kieffer has had a wide experience in the West Indies and in the Philippine Islands, and is therefore qualified to speak with authority on this interesting subject.

Prospective Appropriations for Hospitals of Pennsylvania.—An exchange states that one of the features of the present session of the Legislature will be the contest for increased appropriations for State institutions, particularly hospitals. A point is made that new members especially are anxious to secure appropriations for their home hospitals, and of the 204 members in both branches of the present Pennsylvania Legislature 163 are new. It will be remembered that the appropriations made for hospitals by the last Legislature was cut heavily by the Governor. It is now stated that instead of a deficit, as was then predicted by the executive, that the funds have accumulated in the State Treasury to more than offset the deduction which he made. The total amount appropriated to charitable institutions and hospitals by the last Legislature was \$2,282,233. The surplus now in the State Treasury would permit an addition to this class of appropriations of over 50%, and

doubtless liberal hospital appropriations will be made by the present Legislature.

Licenses to Practise Medicine Granted.—The State Board of Medical Examiners for Pennsylvania has granted 64 licenses to practise medicine in this State. The applicants were from the various medical colleges and universities in the State, as well as from universities in Italy, Germany, and France. Dr. Beates, president of the board, asserts that there has been a marked improvement in the quality of applicants during the past few years. This is accounted for from the fact that all candidates must now have had a preparatory education equivalent to a high school standard, and must have spent at least four years in a recognized school of medicine before applying to the State Board for examination.

A Million Dollars to Fight Tuberculosis.—Mr. Henry Phipps, of New York, has made a most generous offer to Philadelphia, and in fact to all persons suffering from tuberculosis, regardless of location. The generous act consists in donating \$1,000,000 to be used for the maintenance, construction, and proper equipment of buildings and pavilions in the congested portion of Philadelphia, to combat the great white plague. The institute will be made the center for the dissemination of knowledge concerning tuberculosis and its proper prevention and treatment. The donor hopes with this institution, working in correlation with others of minor pretensions and capacity, to stamp out tuberculosis. The institution will be modeled after the Pasteur Institute of Paris, and will be devoted exclusively to the investigation, study, and treatment of tuberculosis. It will consist of an administration building, provided with a Finzen light institute, an institute of hydropathy, with baths and all the modern conveniences for the proper treatment of tuberculosis. There will be a dispensary for the treatment of ambulatory cases modeled after Emile Roux's Dispensary at Lille, France. Thus the institution will be able to carry its instruction and treatment into the homes of the poor and destitute, and to inaugurate a method of education and instruction which in time it is hoped will in many cases at least prevent acquisition of the disease. Lectures will be given and conferences held on the subject of tuberculosis. Dr. Flick, of Philadelphia, a prominent specialist on tuberculous diseases, will be at the head of the institute. While it is true that the statutes of Pennsylvania prohibit the erection of hospitals in the congested districts of Philadelphia, it is confidently believed that the present Legislature will repeal this statute in the interest of the Phipps institution, which will be an entirely independent property. The buildings will cost probably between \$200,000 and \$300,000, and the endowment of \$1,000,000 more will yield an annual income of some \$40,000 for the maintenance of the institution.

SOUTHERN STATES.

The American Association for the Advancement of Science, with all the affiliated societies, which convened recently in Washington, D. C., had about 1,000 persons in attendance. Every section was abundantly supplied with papers and was well attended.

Fear that Chinese May Carry Bubonic Plague.—Texas State Officer George R. Tabor, as a precautionary measure to prevent the admission of bubonic plague into Texas from Mexico, has issued an order to all quarantine officers on the border that all Chinese in the State shall be kept under surveillance for 15 days.

Rules Governing Grants Given by the Carnegie Institution.—In applying for a grant the object of the investigation must be stated concisely, and when necessary details must be furnished. An agreement must be made to prosecute the proposed research diligently and to place in the hands of the secretary of the institution at certain specified times a report of progress made and results achieved with an itemized statement of expenditures. The results of an investigation must not be published without first offering the manuscript to the institution for publication and if they do not desire to publish four copies must be furnished to the institution by the applicant. Due acknowledgment of aid given by the Carnegie Institution must appear in such publications. In case a grant is made the recipient must agree to conform strictly to the rules relative to grants of research adopted by the Carnegie Institution November 26, 1902. According to these rules applications for grants may be made at any time. The Executive Committee will consider carefully each application and decide upon it. When a grant is made or declined the applicant will be notified promptly. A detailed account of all expenditures must be made from time to time and a complete statement submitted on completion of the investigation. All apparatus, books, and materials purchased and collections made by means of grants must be considered the property of the institution. A grant made for a specified purpose can be used for that purpose only, and if the recipient desires to change in any way the subject of his research he must make an application for a new grant. Any part of an appropriation which is not needed to complete the specified investigation must be returned to the institute. Payments of grants will be generally paid quarterly, but in special cases they may be made more frequently.

WESTERN STATES.

Yellow Fever on British Ship.—From Port Townsend we learn that the British ship "Conliebank," which lately arrived from Panama, reports the death of six members of the crew from yellow fever during the voyage. The vessel is in quarantine at Diamond Point.

Physician's Certificate Required to Secure Coal.—It is asserted that local coal dealers in Toledo, Ohio, will not sell coal unless a physician's certificate is presented showing that there is illness in the home of the prospective purchaser, and that coal is necessary as a safeguard for the patient.

Cats Carry Contagion.—The Board of Health of Rockford, Ill., have found that cats are largely responsible for the spread of contagious and infectious diseases and have therefore issued an order that all cats having their habitation in homes where scarlet fever, diphtheria, or other contagious diseases are present shall be put to death.

Rats Show Plague Bacilli.—It is announced that Dr. Eagan, of the British Columbia Health Board, who has been conducting an investigation in San Francisco concerning the existence of bubonic plague in that city, has reported to the British Columbia government that a number of dead rats which have been examined have shown the plague bacilli. He recommends that a strict quarantine be maintained against vessels arriving from San Francisco.

Treatment of Pulmonary Tuberculosis in Illinois.—The report of the State Board of Health, which has been submitted to Governor Yates, of Illinois, emphasizes the necessity for the immediate construction of city sanatoriums for the proper treatment of those afflicted with pulmonary tuberculosis. It is estimated that of the 5,000,000 inhabitants of Illinois 700,000 will die of consumption. To provoke emulation attention is called to the fact that proper care for consumptives is being inaugurated in all of the progressive States in the Union. The board also urges the election of a State Board of Medical Examiners. This would leave the Health Board free to perform sanitary work alone. The work of the Health Board is said to have greatly increased within the last few years, having now reached such a magnitude that it is practically impossible for it to carry out the work successfully under its present plan.

FOREIGN NEWS AND NOTES

GENERAL.

Miscellaneous.—On the occasion of his Jubilee Lord Lister was created Knight of the Grand Cross of the Order of Dannebrog by the King of Denmark.—Dr. Herman Nothnagel, professor of clinical medicine and therapeutics in the University of Vienna, has been nominated a life member of the Upper House of the Austrian Parliament.—Professor Josef Nusbaum has been appointed professor of comparative anatomy at the University of Lemberg.—Professor Robert Koch, the bacteriologist, has sailed for Rhodesia, where he will study the cattle plague. He will receive \$250 a day, exclusive of expenses, and will be assisted by two physicians.

Deaths Due to Contaminated Plague Serum.—An exchange states that the deaths of 19 Indian natives which occurred at the village, Makowal, near Gujrat, in the Punjab, have been traced to inoculations made from a certain phial which was found to contain contaminated plague serum. In spite of a most searching investigation it has not been discovered by what means the contamination occurred, but the serum proved fatal in every case in which it was administered. It was feared that the fatality would excite great apprehension among the natives, who, under their head men, had volunteered freely for general inoculation under the system organized by Sir Charles Rivaz, but it is said they have taken the matter very philosophically, admitting its accidental nature and expressing their readiness to submit to inoculation with the new serum.

CONTINENTAL EUROPE.

Berberi on French Ship.—From Dunkirk, France, comes the news that the French ship "Mezli" arrived at Saigon, Cochinchina, infected with berberi. The second and third officers were dead on board and many of the crew had to be sent to hospitals.

Further Progress in the Sanatorium Movement in Germany.—The sick benefit society, which includes the district of Berlin, has sent a circular to the employers of wage earners calling their attention to the new sanatorium at Beelitz, and urging them to inform their workmen and workwomen that free accommodations are offered to all working people suffering from chronic affections such as neurasthenia, anemia, gastric disorders, bronchial catarrh, rheumatism, gout, debility after acute disease, etc., in case their affection offers the prospects of a cure after a four to six weeks' course at the sana-

torium. It is especially urged on wage earners still at work, but feeling the inroads of a chronic affection, who might be completely reestablished by a course at the sanatorium. During the absence of the breadwinner at the sanatorium a weekly sum will be paid to his family. Employers are asked to use their influence to have their employes take advantage of the offer.—[*Journal American Medical Association.*]

German Society for School Hygiene.—The sanatorium treatment of tuberculosis in Germany is for the benefit of adults. Children have not been regarded hitherto, while France has accommodations for 1,200 in its seashore children's sanatoriums. In the November meeting of the German Society for School Hygiene, Baginsky pointed out that scrofulous and tuberculous children should be classified as follows: (1) Those with inflamed glands, eruptions, and catarrhal inflammations; (2) those with actual but not open tuberculous lesions of bones, glands, or joints; (3) with open lesions of this kind, and (4) those with pulmonary tuberculosis. The anemic children of the first group require merely to be placed in a more favorable environment. Those with pulmonary lesions should be placed in a sanatorium for lung diseases, but the others are best treated in a seashore sanatorium. Experience teaches, he states, that bone and joint tuberculous lesions frequently heal without the necessity for an operation under the influence of the sea air. Other speakers mentioned that the climate of France was more favorable for the purpose than that of Germany, and Orth urged the erection of a seashore sanatorium at Naples or at the Madeiras. A committee was appointed to discuss ways and means.—[*Journal American Medical Association.*]

OBITUARIES.

Bushrod W. James, of Philadelphia, January 6, aged 66. He was graduated from the Homeopathic Medical College, Philadelphia, in 1857, and was well known as an eye and ear specialist. He was one of the committee which aided in forming the International Convention of Homeopathic Physicians, held in 1876. He was an active member of the American Institute of Homeopathy, one time president of the Pennsylvania State Medical Society, and for seventeen years surgical editor of the *American Observer*. He was also a member of the American Association for the Advancement of Science and of the American Public Health Association.

Colin McPhail, of Summerside, Prince Edward Island, December 3, aged 40. He was graduated from the Trinity Medical College, Toronto, in 1892, and also took a postgraduate course in Edinburgh. He was vice-president of the Canadian Medical Association for that province and was also an active member of the Maritime Medical Association.

Archibald Y. Scott, of Toronto, January 3, aged 41. He was graduated from the Trinity Medical College in 1887. He held the position of professor of botany and chemistry in the Ontario College of Pharmacy, Toronto, since 1891.

Dennis J. Loughlin, of Philadelphia, December 27, aged 55. He was graduated from the Jefferson Medical College in 1881. He was appraiser of drugs at this port and was a member of the Pennsylvania State Legislature.

A. C. McDonnell, of Montreal, January 2, aged 74. He was graduated from the medical department of McGill University in 1852. He served for over 20 years on the consulting staff of the Hotel Dieu Hospital.

James C. Lawrence, of Columbus, Ohio, December 23, aged 43. He was graduated from the Columbus (Ohio) Medical School in 1889. He was twice president of the Columbus Academy of Medicine.

C. W. Hopkins, medical superintendent of the Maternity Hospital, Montreal, died recently in that city. He was graduated from the medical department of McGill University in 1902.

R. Herbert Clement, of San Francisco, Cal., December 23, aged 32. He was graduated from the Hahnemann Medical College of the Pacific, San Francisco, in 1893.

William H. Fox, in Ashland, Va., December 31, aged 80. He was graduated from the medical department of the University of Pennsylvania in 1849.

Albert W. Atwater, of St. Regis Falls, N. Y., January 6, aged 41. He was graduated from the University of Vermont Medical College in 1885.

William R. Grove, of Columbia, Pa., January 3, aged 65. He was graduated from the University of Maryland School of Medicine in 1895.

William T. Hughes, of Bedford, Pa., at Philadelphia, December 21. He was graduated from the University of Pennsylvania in 1873.

Charles S. Hoover, of Ottawa, Ill., January 6. He was graduated from the University of Maryland School of Medicine in 1884.

R. S. Wallis, of Rockdale, Tex., January 6. He was graduated from the Jefferson Medical College, Philadelphia, in 1860.

John W. Hignutt, of Denton, Md., January 12, aged 73. He was a graduate of the Jefferson Medical College, Philadelphia.

Rush Winslow, of Appleton, Wis., December 27, aged 59. He was graduated from the Rush Medical College in 1866.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

SOME QUEER THINGS IN MEDICAL JOURNALS.

BY

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Medical writers often make curious and sometimes startling statements. Some of these are doubtless due to typographic errors on the part of the printer, but many of them show internal evidence of being built on a complete misapprehension on the part of the writer of the facts in the case.

O. Stansberg, M.D., of Chico, California, in *American Medicine*, August 17, 1901, page 244, says, under the title of "Hydrogen Dioxid in the Removal of Powder Stains:" "I was induced to try this by the wellknown bleaching action of hydrogen dioxid." The doctor obtained results in the removal of powder stains by the use of this agent, and he evidently believes that his results were due to the bleaching action of the dioxid on the gunpowder. The black color of gunpowder is due to the presence of finely powdered charcoal, and of course this color cannot be removed by any agent which does not enter into combination with it, and at the temperature of the experiment the carbon would of course not be burned by the oxygen of the dioxid. The good results reported in this case were doubtless due to the mechanical removal of the grains of gunpowder by the bubbles of gas which were liberated in contact with or under them by the action of the blood on the dioxid.

Dr. Cutler, in an article in the *Journal of the American Medical Association* for May 26, 1900, speaks of "The Morphology of Water and Morphology of Air." These expressions should mean the form and structure of water and air respectively. Water is a liquid, and a liquid may be defined as a substance having no form of its own, but assuming the form of the vessel in which it is contained, but having a definite surface. Air is a gas, and a gas has no form of its own, but takes the form of the vessel in which it is confined, which it fills completely. It seems to me unjustifiable to speak of water or air as having form or structure.

In the *International Textbook of Surgery*, Vol. i, page 456, a writer speaks of the evaporation of vapor. Evaporation is the change of a liquid into a vapor, therefore it is hardly correct to use such an expression.

Spencer Cleveland heads an article "The Action of Neutral Alkaline Salts and Water." The chemic reaction of liquids is either acid or alkaline, and is determined by the property of changing litmus and other vegetable colors red or blue respectively. If the substance has no effect upon litmus, it is said to be neutral, therefore it is difficult to see how a salt can be at one and the same time neutral and alkaline. A medical advertisement states that the use "of our preparation increased the number of red corpuscles in a certain case from 3,000,000 to 4,000,000 per cc." It is a common mistake to speak of centimeters when the writer means millimeters, and is doubtless due to unfamiliarity with the metric system.

Dr. James Moores Ball in an article in the *Tri-State Medical Journal* of October, 1898, speaks of sterilizing a slippery-elm tent in alcohol containing 1 to 4,000 bichlorid solution. He fails to tell us how much of the 1 to 4,000 bichlorid solution his alcohol contains. It is inferred, however, that the alcohol itself holds in solution one part of bichlorid to 4,000 of the alcohol.

Even such a book as "Gray's Anatomy" speaks of "coronary arteries being the size of a crow's quill." I wonder how many students of "Gray's Anatomy" have ever seen a crow's quill? A famous textbook on surgery (though I have lost the reference) speaks of something as being the size of the quill of a Canada goose.

An advertiser offers thermometers with certified lens front, *alum case*, at \$5.00 per dozen. Alum would make an aseptic case for thermometers perhaps, but its brittleness would preclude its offering much protection to the thermometer. He means aluminum of course, but does not say so.

A writer in the *Medical Bulletin* of Philadelphia says that

iodoform has therapeutic qualities of a high order, and gives as a reason for his belief that it has successfully "held its ground against so many less odorless and more esthetic rivals."

In the *Journal of the American Medical Association*, October 22, 1898, there is a quotation from the *Klin. Therap. Woch.* The subject is heart epilepsy, and in it the writer is made to say that no attacks have occurred for three months, during which time he administered *two grams of bromin and five grams nitroglycerin tablets twice a day*. The dose of bromin, if ever administered internally, would surely not be greater than 100 mg., yet this writer is said to have given 2,000 mg. twice a day. The maximum dose of nitroglycerin is probably a milligram or less, but according to the *Journal*, this writer gave a tablet containing 5,000 mg. twice a day for three months.

Dr. Leo Ettinger, in the *Medical Record* for October 16, 1897, gives a prescription in which he calls for 1 cc. of morphin sulfate, .02 cc. of atropin sulfate, .5 cc. of chloral, and 30 cc. of water. A cubic centimeter of a solid is likely to be a very indefinite quantity. Dr. Mellish speaks of a dose of eucain as being $\frac{1}{2}$ to 2 grains per kilo. I believe it is not good form to express a fact partly in one and partly in another system of weights.

In the *Philadelphia Medical Journal* of July 1, 1899, Dr. Smilie uses the term *compound oxygen* in the title of an article on anesthesia. Oxygen is at the present time believed to be an element, and it is certainly contrary to all rules of chemical nomenclature to speak of an element as compound. Chemically speaking there could be no more flagrant violation of proper use of words than to speak of *compound oxygen*. This same writer speaks further on of the oxid of carbon in the blood being a deadly poison. He does not indicate which oxid he refers to; carbon dioxide being one of the constituents of exhaled air and not particularly poisonous, I presume he refers to carbon monoxid. In the *Philadelphia Medical Journal*, December 2, 1899, there is a note from Dr. Buehler on a "Home Remedy for Leg Ulcer." If his communication is to be of any value to the readers he should tell them what he really uses, as there is no *black oxid* of lead. There are three oxids of lead, yellow, or litharge, PbO ; puce colored, PbO_2 ; and red, Pb_3O_4 ; then as oxid of lead and camphor do not make a paste, one would like to know what was used in the paste besides the things he mentions.

In reading one meets thousands of statements which are not verifiable by previous knowledge nor by ordinary experiment, and when a writer is so inaccurate in things we happen to know, we are likely to give but little credence to the statements about things we do not know. Medical lecturers are woefully derelict in their statement of facts, and newspaper writers wretchedly so, but we have a right to expect better things in scientific publications.

THE TECHNIC OF VACCINATION.

BY

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1. Cleanse a wide area on the arm with pledgets of cotton moistened with alcohol. Change the pledgets until the cotton is no longer soiled when through rubbing.

2. Break off the ends of the capillary lymph tube and eject the drop of vaccine lymph on to the arm.

3. Then with the sterile scarifier or needle scarify through the transparent or translucent lymph so lightly as not to draw blood, and making a checker-board pattern from $\frac{1}{4}$ to $\frac{1}{2}$ inch square. Then with the side of the scarifier or needle the lymph may be further rubbed over the scarified area.

By this method of scarifying through the lymph the vaccine is carried by the scarifier under the skin and, in a manner, introduced hypodermically. Then apply a large shield, which better removed after the second day so as not to constrict the circulation and cause a local edema; and then apply a clean dry dressing, which remains on until after the scab comes away. If the arm becomes inflamed support it at day time and elevate it on a pillow at night. A 20% mercuric ointment or 5% ichthyol ointment may be gently rubbed over the inflamed area and

applied over the pustule daily and protected with a dressing. Unguentum hydrargyri and ichthyol are both readily absorbable antiseptics and soon allay the inflammation.

BUBONIC PLAGUE IN CALIFORNIA.

To the Editor of *American Medicine*:—I note that in the number of *American Medicine* for December 27, 1902, page 997, there appears under the caption "No Bubonic Plague in San Francisco" an item based upon an alleged interview in the *San Francisco Call* with Surgeon A. H. Glennan of this service now at San Francisco, California, in which Surgeon Glennan is made to say that plague does not now, and never has prevailed in San Francisco, and that the bacillus of the disease which existed there was that of chicken cholera.

I would invite your attention to the fact that under date of December 14, 1902, Surgeon Glennan telegraphed the Bureau that the statement attributed to him by the *Call* was false. An authoritative denial was published in the *Sacramento (California) Bee* of December 16, 1902.

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"AUTHOR'S" CRITICISM OF THE W. C. T. U.

BY

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To the Editor of *American Medicine*:—In your issue of November 22, "Author's" criticism of the action of Mrs. Hunt as a representative of the W. C. T. U. seems to me not entirely just to Mrs. Hunt. I have had considerable correspondence with her, and she has consulted me a number of times in regard to scientific facts about alcohol as those facts are known to the medical profession, and I have been asked to read some of the "Physiologies" seeking her endorsement before being offered to the public. At all times she has shown a sanity and reasonableness quite above criticism, always expressing a desire to keep abreast with the profession in its experimental work with alcohol. Of course, no one will deny that when competent medical opinion conflicts or is in doubt, Mrs. Hunt always takes the position least favorable to alcohol. Surely no one can blame her for this. She does not occupy the position of a judge of technical scientific points. She is, instead, devoting her life to lessening the terribly destructive effects of alcohol. No one will deny the vastness nor the importance of this field of philanthropic labor. Now, while no physician or physiologist can conscientiously support her the moment she steps outside of scientific fact, surely no one can justly criticize her for refusing to put the alcohol question in its least unfavorable (to pro-alcohol interests) light. According to "Author's" own confession, I think he was wrong. I think it is wrong to teach any pupil in any department of our schools that "alcohol is sometimes a food and sometimes a poison," thereby creating the impression that its food value is equal to or outweighs its destructiveness as a poison, when as a matter of fact there are at least a thousand cases of poisoning resulting from the ingestion of alcohol, for every case in which it is judiciously used as a food. Moreover, children are incapable of understanding the technicalities of this question of what constitutes a food, and to what extent and under what conditions alcohol may be regarded as such. Nor is the profession by any means of one opinion in the matter. Some of the ablest and most conscientious of our physiologists and physicians have repudiated alcohol as a food altogether, and on very rational grounds. Would our schools, therefore, be justified in either teaching the unqualified statement that "alcohol is sometimes a food and sometimes a poison," or going into the technicalities of the scientific discussion? After all, are we not very near the truth when we teach, without qualification, that alcohol is a poison, and ought not this to be taught in the public schools?

Moreover, we believe that the "stimulant" value of alcohol has been conclusively shown to be non-existent. That alcohol is not a stimulant is supported by an overwhelming weight of testimony, and any book which should teach our children that alcohol is a stimulant must necessarily disseminate error.

ORIGINAL ARTICLES

DRAINAGE IN CHRONIC INTESTINAL CATARRH :
ITS IMPORTANCE AND TECHNIC.¹

BY

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Chronic intestinal catarrh, as we meet it in practice and as we generally understand it, is usually restricted to the colon. That catarrh of the small intestine occurs there can be little doubt, for catarrh probably is a disorder which attacks at some time or other every mucous membrane of the body; but the symptoms and signs that we can identify as belonging to chronic catarrh of the bowels nearly all point to the region below the ileo-cecal valve.

This disease, the most common of the chronic affections, produces quite a variety of symptoms, and is responsible for many collateral and widely variant disorders of other organs and systems of organs. These include debility, discomfort, pain in the abdomen, colicky symptoms, alternations of constipation and diarrhea, bloody passages, hemorrhoids, tenesmus, insomnia, mental apathy and incapacity, and actual melancholia. It occasionally destroys life indirectly by lowering vitality and making the body a victim to some intercurrent disease. It occurs at nearly all ages and to both sexes. Infants have it (as shown by repeated mucous discharges) as well as adults.

Numerous influences conspire to produce it, prominent among them being indigestion in the stomach and small intestine, irritating things in the colon, chiefly irritating ill-conditioned feces, general debility, and perhaps poisons accidentally acquired. It is also often produced, as it is usually perpetuated, by failure of frequent, regular, and complete evacuation of fecal matter from the colon itself. Lack of efficient drainage from the colon is a prolific source of mischief in this as well as other directions. Decomposing retained fecal matter, or matter unchanged and that merely acts as a foreign body, is capable of keeping up a catarrh almost indefinitely. Some degree of constipation, involving a part or all of the colon, is a much more common condition than is usually supposed, and it is responsible for many more catarrhal symptoms than we have been ready to believe. Many people in fair health, who suppose they have sufficient alvine evacuations daily, are carrying almost constantly in the colon above the sigmoid flexure a large amount of feces that do various kinds and degrees of mischief, including the production of chronic catarrh and ptosis of the transverse colon. This condition is demonstrable in many people by the use of a large enema immediately after a supposedly complete evacuation, proving that the colon was by no means emptied. Nor is it surprising that such should be the case when we consider the numerous sacculations of the colon, its great distensibility, and the several flexures at differing angles along its course, as well as the nervous and muscular sluggishness that the colon itself frequently shows. But it is surprising, however, when we consider the anatomy and physiologic of the colon and the artificial lives we all live, that catarrhs and constipation are not more frequent.

If these postulates are correct, then regular complete and harmless evacuations are more useful than any other measure in the prevention or treatment of chronic catarrh of the colon. This measure assists more than any other the normal physiologic forces of the parts involved, and these forces, when unimpeded, always tend to prevent catarrh and to cure it when it exists. Many of us in treating this disease seem to have forgotten that there is an innate physiologic power in the colon that tends to

keep the functions normal, and is capable of doing this if it has a fair chance. As a result we have prescribed various astringent drugs, which are not real intestinal antiseptics, and also other supposed panaceas or specifics, and then wondered why the disease did not disappear and why a permanent cure was not effected.

It ought to be a cardinal doctrine for this affection that no other treatment is in order until the aforesaid regular, free and harmless evacuations are provided for; in other words, until free drainage is instituted, and not even then if these measures are sufficient. That they often are sufficient has been frequently proved. The modern scientific treatment of disease aims in general to brush away the causes and to remove the obstacles to recovery so far as possible, and there is not the slightest reason why this rule should not be followed with catarrh of the intestines. It is always safe, conservative and wise, and does not bar or prejudice any other useful treatment that may be found necessary afterward.

When constipation is manifest, whether there are symptoms of catarrh or not, the measures for relief are usually restricted to so-called laxative drugs, to suppositories and enemas, and occasionally to massage and mental efforts to induce regularity of habits. These measures are all more or less efficacious when used with caution, regularity and faithfulness. Many of the foods used are laxative because indigestible; most of the laxative drugs are used without system, according to the inclination of the patient from day to day, and are usually prompted by symptoms of biliousness and taken commonly in cathartic doses rather than such as might act as a tonic to the intestinal mucous membrane. The suppositories, enemas and other measures are subject to similar drawbacks. In spite of all this the measures have done vastly more good than harm, only much less good than some of them are capable of doing if used in the right way.

No routine treatment of catarrh of the colon is worthy of the widest confidence, although perfect and daily drainage as a principle of treatment is of the greatest consequence. Each case should be pondered by itself and a treatment adopted in accordance with its needs, but the principle of drainage ought to be insisted on in every case. It should be insisted on so strenuously that it is worth while to catalog the indications that point to the need of better drainage, some of the obstacles to its accomplishment and the basal facts in the technic that belongs to it.

In general there is need for better drainage when it is known that there is liable to be accumulated fecal matter anywhere in the large intestine. Various signs point to this condition. To bring away considerable masses of fecal matter from the colon by an enema or by a quick saline cathartic after the patient has supposed the colon to have been emptied is proof positive; and one experience of this sort proves the possibility of the frequent existence of the trouble, especially in the presence of other symptoms.

The finding of scybala, especially after the passage of softened material, is evidence of the retention of fecal matter in some intestinal pocket longer than is good for a catarrh; and scybala mixed with mucus is a positive demonstration of this fact. The colon is a reservoir for the storage of fecal matter for an indeterminate time when in health; but when in the condition of chronic catarrh no such material should remain long enough to become hardened, and the hardening process begins very promptly in and near the region of catarrh. If the retention occurs just above the seat of the disease it is nearly as bad as though within it, for so situated the hard masses probably interfere with the return circulation from points below. Colicky pains, whether slight or severe, are usually in the colon; they nearly always signify difficulty in moving fecal matter forward, and as unmistakably indicate the necessity of some measure of assistance. Intestinal flatulence, especially the discharge

¹ Presented to the Association of American Physicians at Washington, D. C., May 1, 1902.

of fetid gas, always means the same thing. In case of either colicky pains or fetid flatulence an enema is nearly always followed by a prompt discharge of fecal matter, with prompt relief of all the symptoms.

General discomfort in the abdomen or in the back, tenderness at some localized point in the abdomen, and rectal tenesmus, all suggest lack of drainage from some point in or above the sigmoid, and these symptoms should never be permitted to last long without testing with an enema or a laxative. Insomnia, mental heaviness, or irritability, nervous discomfort in the lower extremities, and inability to keep the legs still, often point to the need of a free evacuation of the colon—the symptoms disappearing the moment this end is accomplished. Diarrhea may continue for days, and disappear as soon as the whole of the colon is evacuated daily and without irritation.

Obstacles to the practical accomplishment of free drainage are numerous. First is to know the right thing to do; to understand the sequence in which the different measures that are sometimes useful should be tried; the appreciation of some of the anatomic and physiologic difficulties is not always easy, and the lack of constancy on the part of the average patient in carrying out the best measures is the worst obstacle of all.

Enteroptosis is one of the anatomic obstacles. It exaggerates the splenic and hepatic flexures and makes it difficult for the contents to pass them. More than the usually expended peristaltic force is required to empty the colon, and the power of the intestine in this direction is usually reduced. Then there is at times great muscular apathy in the intestinal wall. When this or the ptosis exists we have a positive obstacle. This is most apparent at the flexures, of which there are several—the hepatic, the splenic, one at the lower end of the descending colon, where the gut curves forward into the false pelvis, and several flexures of and about the sigmoid proper. These last differ in different people—as the sigmoid differs in length, position and curves.

The tetanic rigidity of the colon often found in regions of this tube in chronic catarrh, and the pathology of which is so far a mystery, often impedes the movement of the contents downward, as it causes pain in the process. This state of rigidity often continues for hours and even days. Probably its most common location is the descending colon and sigmoid. It fluctuates from moment to moment, and does not always relax completely to let fecal matter pass, but often forces it through its narrowed lumen in small particles, with acute pain. This fact can be demonstrated easily in a positive case on palpation by any one, even by the patient himself, if he has rather thin abdominal walls.

The vertical posture of the body for two-thirds of the time of our lives hinders the easy evacuation of the colon. Not walking on all-fours we are at a disadvantage as compared with the lower animals. Our habitual posture increases the enteroptosis, and so tends to increase any stretching of the transverse colon and also any irritation at the splenic flexure, provoking countless cases of catarrh. It also frequently increases the obstacles of the lower flexures and the rectum.

The means to accomplish drainage should be employed regularly, not fitfully, nor merely when the patient feels like it. If laxative medicines are used—and there is no objection to them, even as a beginning treatment—they should be taken, not in cathartic, but laxative doses, and daily or twice a day, as may seem best; never to produce griping, aching, or tenesmus. No unyielding rule can be made for the selection of the right drug, since patients have so many personal idiosyncrasies. The salines agree best with some, the vegetable laxatives with others. Of the latter, cascara, rhubarb, senna, and aloes are the best. They are usually taken in too large doses. Two weeks' trial with any one of them is probably a sufficient test. The oils sometimes act best of all. Olive oil (in large, regular doses)

is the most rational for a constant laxative, although castor-oil agrees with some patients perfectly; while a large daily dose of pure vaselin (2 or 3 drams) is sometimes a most successful medicine. Of the salines, probably the best are magnesium sulfate, sodium sulfate, and sodium phosphate. Coarse food and indigestible substances seem to be beneficial for some constipated patients; they induce daily dejections without harm, but they are a poor resort for the patient with intestinal catarrh. Moreover, with the debilitated patient, and especially in rectal constipation, they are liable to induce abscesses. The psychic method of securing (or trying to) a daily evacuation by going to stool regularly and trying is rarely successful in chronic catarrh of the colon. It is a good measure for people in health who have sluggish bowels; it may prevent catarrh, hemorrhoids, and ischiorectal abscesses, and is much to be commended for this purpose, and in proportion to the few people who practise it regularly, it is often successful. For catarrhal cases some artificial aid is usually necessary; even in those with diarrhea there are often hard fecal masses retained in some pockets or sacculations, and the retention of which aggravates the diarrhea. In many such cases there is a marked irritability of the rectum and sigmoid, compelling the prompt evacuation of every particle of substance the moment it enters them, while just above are often retained hard masses that help to continue the diarrhea. In all such cases there should be secured occasionally a free evacuation of the entire colon, either by castor-oil or a normal salt solution enema. Sometimes the great irritability of the rectum makes it extremely difficult to use the enema successfully; and sometimes the tetanic rigidity of the upper sigmoid and descending colon offers a serious obstacle to the inflow of water, pain and tenesmus occurring unless the current is very slow.

For the purpose of drainage in chronic catarrh no other measure is so generally useful as enemas properly and regularly taken, and managed rationally, and especially when aided by the use of posture to secure evacuation. The enema should be used daily or twice a day, as seems necessary. No harm will ever come to the intestine if the water is warm enough, is introduced slowly to avoid colicky peristalsis, and never pushed to the point of causing pain by distention; especially is this true if the normal salt solution is used. The enema should be taken with the body horizontal, and preferably on the left side at beginning. As soon as the fluid reaches the splenic flexure it is liable to cause more discomfort and tenesmus as it rises into the transverse colon. This is a sign to the patient to turn upon his back, which usually relieves these feelings and allows the enema to flow painlessly clear to the end of the cecum. Next to the completely horizontal posture, the preferable one for taking the enema is that with the body bent far forward while seated on the closet.

The best enema for daily use is plain water or normal salt solution (a heaping teaspoonful of salt to a quart).¹ This latter never irritates the intestine; indeed, it is so soothing to the mucous membrane that sometimes the enema is long retained and discharged in repeated small portions, without inconvenience to the patient. In such cases either pure water or a stronger salt solution may be used.

The normal salt solution has an excellent effect on the catarrhal surfaces; it washes away mucus and comforts the irritated spots. The best temperature of the enema for the average patient is 100° to 105° F. A few vigorous patients find good effect from cold or cool injections, and doubtless these often do provoke quick action; but most patients with catarrh are reduced in vitality, and the warm enemas are better for them. A fountain

¹ The latest investigations seem to show that the true normal salt solution contains nearly, if not quite, 9 parts of common salt, instead of 8, to 1,000 of water. This requires 155 grains to a quart, which is about a heaping teaspoonful.

syringe should always be used, and if possible, at least a quart of water should be introduced into the bowel for an adult patient, and no effort should be made to retain it for any length of time. There is a lay theory abroad that an enema must, in order to be effective, be retained several hours before being expelled, and any patient is liable to have heard of it and be misled by it unless warned by the physician. Patients sometimes suffer for hours in the foolish attempt to retain large quantities of water in the colon, and then complain that they cannot take enemas without pain. The theory is, of course, as senseless as that other one that an enema habit may be formed which will be calamitous.

Sometimes in taking an enema a little fecal matter in the rectum will cause an extreme degree of tenesmus after a few ounces of water have been introduced; then it is best to stop and expel this, when the intestine may accept a quart or more (introduced slowly) without special discomfort, and a free movement from the upper regions of the colon be induced. Attempts to take the enema in the sitting posture or with a rapid flow may cause similar tenesmus and make it quite impossible to fill the colon to the splenic flexure.

The usual posture of the body, and the normal and abnormal anatomic conditions, often make the colon difficult to empty thoroughly, even with the aid of an enema. The enema is sometimes retained, causing occasional colicky pains, and similar discomfort is produced or increased by attempts to expel the accumulation.

Posture of the body as a factor in the action of the intestine, and especially in the evacuation of it, is not enough studied or enough taken advantage of.

One of the most remarkable effects of posture is shown, I think, when the body is thrown forward at stool so that the anterior wall of the abdomen is nearly horizontal. This maneuver conduces to a freer and prompter evacuation in health; it lessens the colicky pains with which a catarrhal colon is evacuated, and facilitates the process; it tends to prevent an annoyance that often occurs in these cases, consisting in retention of a portion of an enema, which may be expelled in small instalments at successive sittings afterward, and often with more or less discomfort of a colicky character.

The explanation of some of the effects referred to is easy to see. The forward position allows the sagging transverse colon to come back to or toward its normal position, and its flexures (the hepatic and splenic) to be somewhat relieved of strain, so that the contents may pass more easily. By this posture the lower forward curve of the descending colon, the upward curve (when there is one) of the sigmoid, and the rectum, with the short side of its curve forward—all have the force of gravity in their favor in efforts to evacuate, and can the more easily unkink their flexures and so lessen colicky pains and obstruction. Colicky pains are prone to occur most at the flexures and sharpest turns of the intestine, and at the points of tetanic rigidity, where, of course, most peristaltic force is required. Experiences of this kind tend to prove that the erect or sitting posture is a physical disadvantage in efforts to evacuate the colon and rectum, and that the contention is correct that the animals that walk on all-fours, the bodies of which are always horizontal, have distinct physical advantages over us in the ease with which their functions are performed.

The dorsal decubitus ought to relieve the difficulties of the transverse colon and its flexures, and doubtless does, but it is a gravity obstacle to the lower descending colon and the rectum, and is of incomparably less value than the forward position as an aid to drainage.

Sometimes a patient is annoyed for hours by flatulence that shows itself by the discharge of a bubble of gas, usually fetid, every few minutes, and with no inclination for a movement of the bowels. Then by sitting at

stool with the body bent forward an evacuation is secured within a few minutes. This occurs even after he has been straining at stool in the erect posture with only discomfort and no evacuation or inclination to one.

The repeated discharge of fetid gas or any considerable quantity of odorless gas should lead to prompt efforts for an evacuation; that is to say, the presence of gas shows that usually the large intestine is more or less loaded with fecal matter that should be gotten rid of, and which the intestine is not harboring or storing in the physiologic way. The normal way is without development of malodorous gas in any quantity.

Occasionally a patient has slight colicky pains in efforts to evacuate fecal matter or an enema that has just been taken, and these pains may be attended by a sense of nausea or faintness. The colic, the nausea and faintness all are reduced or abolished by the extreme forward position of the body. One patient has repeatedly demonstrated this proposition by bending his body forward when it has happened that the colic or the other sensations have occurred at stool, and with the result that the disagreeable feelings have promptly ceased and the evacuation as promptly ensued. He has learned that this maneuver will relieve him of distress, and help the bowel to evacuate itself.

In most cases of catarrh when there is any degree of enteroptosis some benefit may be derived from a firm bandage worn about the lower abdomen. It lessens and represses the deformity to a slight degree, and so far facilitates drainage as well as better circulation in the intestine, and hence improves the tendency to recover. Probably there is some dragging down of the transverse colon as well as of the stomach in most of these cases.

The wearing of an abdominal bandage has been rather fashionable in certain quarters, usually on the theory that it prevents cold-taking, diarrhea and other diseases of the abdomen. As probably in the majority of cases the bandage is worn rather snug, it is likely that it has done more good by lessening the splanchnoptosis than in any other way. The tendency on the part of the wearer of a bandage to draw it rather firmly during the time of his daily vertical activities doubtless grows out of a sense of comfort from the support, and this latter is probably due to a relief from the pull downward of the organs.

The best form of bandage is one made of elastic material and to fit firmly about the lower part of the abdomen. Perineal straps are usually required by thin people to keep the apparatus from sliding up out of place. Any good effect from the bandage depends on its being kept in the right position and making steady and firm pressure. If it exerts its chief force on the upper part of the abdomen it is worse than useless, for then it aggravates the splanchnoptosis, with all its misfortunes.

DIPHTHERIA ANTITOXIN IN THE INFECTIOUS OR BACTERIAL BRONCHOPNEUMONIA OF CHILDHOOD.¹

BY

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Bronchopneumonia, which is also called catarrhal pneumonia, lobular pneumonia and capillary bronchitis, is an inflammation of the terminal bronchus and the air vesicles that make up a pulmonary lobule, and may occur independently of preceding bacterial infection, as from direct irritation by smoke and noxious vapors or aspiration of food and gases. In such cases it may be associated with or arise by extension from inflammatory processes in the upper air passages; it may be caused by

¹ Read before the Southern Branch of the Philadelphia County Medical Society, March 27, 1902.

chloroform and less often by ether administered for surgical anesthesia in the presence of artificial light, through combustion. It may arise from purely local infection by agents recognized and unrecognized, and probably not specific; it may occur through extension from bronchitis of any origin, but it is usually met as a complication or sequel of one of the infectious diseases, especially those of childhood. Even when it is the only prominent manifestation of the existence of infection, as, for example, in influenza or tuberculosis, it is to be regarded as a secondary infection. It is usually associated with or follows measles, scarlet fever, smallpox, whoopingcough, influenza, tuberculosis, erysipelas, dysentery, meningitis and typhoid fever.

Bacterial bronchopneumonia, with which we have most to do, is a morbid process affecting the terminal bronchioles, the pulmonary vesicles and the pulmonary lobules in scattered areas. It occurs secondarily to some preceding morbid process of bacterial origin. Apart from the tubercle bacillus the organisms most frequently found in bronchopneumonia are *Micrococcus lanceolatus*, *Streptococcus pyogenes*, *Staphylococcus aureus* and *albus* and *Bacillus pneumoniae* of Friedländer. In cases occurring in diphtheria *B. diphtheriae* (Klebs-Löffler) is frequently found, and in influenza, *B. influenzae* (Pfeiffer) and other organisms have been reported. It is rare for pure cultures of any of the organisms mentioned to be found except in the case of the pneumococcus, which is associated most frequently with the pseudolobar type of the disease. The streptococcus is the most common in the lobular type. Mixed infection is the rule. Wright and Mallory have described a capsular bacillus found by them in the lungs of a man who three weeks after diphtheria died with a severe bronchopneumonia. Carmichael says there are four clinical types of infantile pneumonia recognized: (1) Complete consolidation of lobar distribution without signs of bronchial catarrh; (2) with no signs of consolidation, bronchial catarrh being generally distributed over one or frequently over both lungs; (3) with bronchial catarrh and large areas of incomplete consolidation of lobular distribution; (4) with bronchial catarrh and larger areas of incomplete consolidation of distribution. The differentiation of the last three types depends to a greater or less extent upon the degree of consolidation accompanying. The acute pneumonia of infancy and early childhood is a bronchial pneumonia in the majority of cases. Bacteriology demonstrates that it cannot be considered a specific disease in the sense that it is due to any special organism, for similar if not identical pathologic changes are produced in the lung tissues by various organisms. The reason why the same infection that produces a catarrhal pneumonia in infants should produce a fibrinous pneumonia in adults or in children over 5 years is explained by the fact that the alveoli of the lung are not fully developed until about the fifth year.

Catarrhal pneumonia is essentially a pneumonia of infancy, and the types commonly met are but two—the lobular and the pseudolobular. In the lobular type the dissemination of the morbid process and the distinctly lobular involvement of the alveoli can be readily demonstrated. In the pseudolobular the extent of the affected areas gives a resemblance to the consolidation of croupous or lobar pneumonia.

Tuberculous bronchopneumonia is the most common and most fatal form; next in frequency is the infectious bronchopneumonia, associated with the diseases of childhood which, according to distinguished pediatric authors, causes more deaths in children than do the fevers themselves. It is well known that when a culture in broth, of pathogenic bacteria, say the diphtheria bacillus, is passed through a Chamberland filter, the germless filtrate will be found to hold in solution a powerful poison; this poison or toxin can be precipitated and it gives the reaction of an albuminoid substance, but its chemie composition is not yet fully known. If normal

serum from the blood of an animal is mixed with this toxin the serum will not lessen its virulence. The serum of an animal rendered proof against diphtheria, if added in sufficient quantity, will neutralize the toxin derived from the diphtheria bacillus, thus proving the existence of a new substance in solution which is called an antitoxin.

In nearly all diseases caused by bacteria the toxin given off by the bacterium is the immediate source of the group of symptoms called the disease. This toxin tends to destroy cell-nuclei everywhere, and if unchecked will cause death. There are various theories advanced to explain the process of cure in such diseases. One theory is, that the toxin in the circulation excites the body cells to produce a neutralizing antitoxin which counteracts it somewhat as an alkali mitigates the action of an acid. In some diseases, like pneumonia and diphtheria, this antitoxin passes out of the blood in a short time and a person may, therefore, be attacked repeatedly by these diseases. In other cases, as typhoid fever, the antitoxin remains in the blood for years and prevents the recurrence of these diseases—such a person is said to be immune against a certain disease.

G. Sims Woodhead¹ theorizes as follows as to the causation of immunity:

Many of the pathogenic organisms act under very special conditions and upon very complex proteid substances. The results vary greatly, but disintegration of these proteids is never carried so far as in the ordinary processes of decomposition of dead organic matter, animal or vegetable. Consequently substances are formed characteristic of the earlier stages of breakdown viz., enzymes, toxins and toxalbumins, albumoses, ptomaines and similar substances, rather than the simpler nitrogenous or carbon-holding substances of more advanced disintegration—water, carbon dioxid, ammonia, nitrates, nitrites, etc. In disease processes we have the results of the action of the products of the earlier stages of decomposition of proteid matter, at which exceedingly complex substances are formed, rather than of the later stages, when decomposition is more fully carried out. By a process of hydrolysis, anthrax and diphtheria bacilli and their products convert crude albuminous material into substances nearly allied to albumoses. Hankin and Cartwright Wood maintain that these albumoses, when injected into an animal, exert a protective action against the specific disease with which it is associated. The enzymes or ferments which appear to precede or to be formed along with the albumoses have in most instances a much greater lethal activity, but they appear to exert a comparatively slight protective effect, although when injected with sufficient care they give rise to modifications in the protoplasm of the cells, which are thus rendered more resistant to the action of toxins. The albumoses appear to have a similar power of bringing about a modification of the cell, which enables it to resist the attacks of the toxin without at the same time exerting the powerful toxic influence which the enzymes exhibit. This production of albumoses or some similar substance in disease is therefore of vital importance in the production of immunity. A number of enzymes which in many respects resemble the toxins formed by disease-producing organisms have been described—amylase, invertin; enzymes which split up glucosids, cellulose, urea, and fat; enzymes which have the power of peptonizing albuminous substances and converting them into peptones, albumoses and similar proteid derivatives; chromogenetic enzymes which have the power of producing coloring matter, etc. These enzymes may remain and do their work in the cell, hydrolyzing the cell substance, or they may become separable functions and do their work outside the cell. It has been argued that the so-called antitoxin present in the blood-serum of a patient recovering from an attack of diphtheria or tetanus is simply the accumulation of such a separated or separable function which can act on the toxin outside instead of within the cell. Upon this the theory of the antitoxin treatment of these diseases, e. g., tetanus and diphtheria, may be said to depend. The toxins are exceedingly complex substances, and although they are frequently spoken of as specific poisons, it must be remembered that they are probably combinations of non-specific substances with perhaps a single specific poison (enzyme plus globulin, etc.). In diphtheria and tetanus toxins, for example, there are certain common substances by the action of which fever, general symptoms or local swelling may be set up, but in addition to these there is in tetanus toxin a specific substance which exerts a selective action on certain nerve cells, inducing the special and characteristic symptoms by which tetanus may be distinguished from almost any other disease. In diphtheria toxin, too, along with the substances that produce general effects are those which pick out portions of the nervous system, and combining with these, or acting upon them, give rise to the paralytic symptoms so often developed during or

¹Allchin's Manual of Medicine, Vol. i, pp. 30, 31, 32.

after an attack of diphtheria. Now it is evident that in the treatment of disease by antitoxin it is necessary not only to antagonize the specific, but also the general actions of these poisons. It is possible to imagine that substances which only exert a specific effect may be produced along with others which attack the general poisons. The specific action is, however, always the more difficult to obtain. It is possible that by the use of a general antitoxic substance a patient might be helped to tide over the effects of the action of the specific toxic substance, and the possibility must be recognized that an antitoxin for diphtheria, for instance, might be of such a character that it would enable a patient to recover, still leaving unaffected the specific action on the nervous system. This, however, is not probable.

Within the past two years a number of instances in which antidiphtheric serum has been employed with success in other infectious diseases than diphtheria have been noted. How or why antidiphtheric serum acts in these mixed bacterial conditions we do not understand, but that it does act, and promptly, too, has again and again been demonstrated by numerous observers, some of whom have thought that by its entrance into the body it produces a leukocytosis which in turn produces an antitoxin; some think it acts as a stimulant to the protective powers of the body. There is immunization or partial immunization which may be called indirect, as when vaccine immunizes wholly or in part against variola, or when erysipelas counteracts the poison of infectious pneumonia, as has been noted in some instances, and which certainly happened in the cases of bronchopneumonia occurring in my own practice in which antidiphtheric serum was used in the treatment. It is well known that the use of a serum containing an antitoxin is not confined to the treatment of diphtheria. Animals have been rendered proof against diseases caused by various species of streptococcus, and their serum used to prevent or to cure analogous diseases in man. Dr. Weisbecker has experimented with serum from patients recovering from measles, with which he injected others in the incubation stage. He considers the results quite satisfactory, as the course of the disease was much modified and patients with measles and pneumonia were cured. The serum treatment of smallpox has been shown to be rational and efficient, but as a preventive it is not likely to supplant vaccination.

Antidiphtheric serum has been employed in the treatment of malignant scarlet fever and Dr. Alcide Treille has used it in malarial fever. M. Fourrier used it in the treatment of a young child who showed an angina during the course of grave scarlet fever. The case was almost hopeless at the moment treatment began, but from the first injection the coma into which the child had sunk disappeared and subsequent injections led to a rapid recovery. Since then M. Fourrier has employed this treatment in similar cases with most successful results and he recommends it in all grave cases of scarlatina. Serum prepared on the principle that governs the production of diphtheria antitoxin has proved successful in a number of instances of bronchopneumonia of tuberculous origin. The work done by Prof. Maragliano, of Genoa, and the results of the use of tuberculin are well known. Although it has proved a failure as a curative agent, it does lead to a formation of antitoxin, but it is not known that sufficient antitoxin to prove curative can be produced by the use of safe doses. Very recently the successful work of Prof. Talamon, of the Buchat Hospital in Vienna, in lobar pneumonia, has attracted worldwide attention. Dr. Montgomery Paton, of Australia, claims that antidiphtheric serum is a specific for sepsis and other secondary conditions which have a streptococcal causation. He also claims that antidiphtheric serum is a specific for simple inflammation, trauma, etc., whether such inflammation is regarded as being a distinct entity or only an attenuated sepsis. He holds that diphtheria antitoxin has no parallel in medicine as an absorbent of inflammatory tissue, and that it has considerable influence on the coagulability of the blood. It has great power in some depressed conditions, probably due to septic conditions

acquired or to autotoxemia. It has been found by Carrier, that while diphtheria antitoxin given hypodermically is a specific for the poison of the Klebs-Löffler bacillus and weak for the septic organisms, when given by the mouth it is specific for the staphylococcus and streptococcus and weak for the Klebs-Löffler bacillus. Dr. Paton reports its successful use in erysipelas, peritonitis, appendicitis, acute rheumatic polyarthritis, puerperal infection, secondary infection, tuberculosis, traumatism, bronchopneumonia (he does not say whether secondary or not), in abscess, suppuration, etc., wherever the staphylococcus or streptococcus is to be found.

The cases of bronchopneumonia in which I used antidiphtheric serum occurred at various times during the past two years and were all secondary pneumonias of bacterial origin, complicating the various infectious diseases and exanthems of childhood.

CASE I.—James B., aged 2½, had been ill with influenza. I saw him November 22, 1900, and found him profoundly prostrated; nasal alae dilating, respirations 70 to 75, pulse 170, temperature 105°. Physical examination gave the harsh breath sounds and subcrepitation of bronchopneumonia. As the child's condition was extremely critical, 3,000 units of antidiphtheric serum were injected into the cellular tissues of the groin; this was done within 16 hours of the onset of pneumonia. Eight hours later the reaction was marked, temperature had dropped to 103°, the pulse-rate from 170 to 104, respirations from 70 to 35; the defervescence continued and the child made an uninterrupted recovery. The bacteriologic examination of the culture made from the child's throat was negative as to the Klebs-Löffler bacilli.

CASE II.—I saw N. B., aged 2, on March 4, 1901, at 1.30 a.m. Temperature was 103°, fauces negative, respirations 50, pulse 142. Later in the day, about 10 a.m., temperature was 104.4°, respirations 75, pulse 150; physical examination showed catarrhal bronchopneumonia. The child's condition became extremely grave, temperature continued to rise to 105° with increasing pulse and respirations. One thousand units of antidiphtheric serum were used about the sixteenth hour of the pneumonia; nine hours later an extraordinary improvement in the child's condition was noticed. Defervescence occurred by lysis and the child made an uninterrupted recovery.

CASE III.—Baby R., aged 7 months, had bronchopneumonia as a sequel to measles. Physical examination revealed bronchial breathing, and at intervals over both lungs subcrepitant rales were heard in scattered areas, temperature was 105°. The autotoxemia was so profound that a persistent clonic muscle tremor was present. The little patient was unable to suckle and was gravely ill. Two thousand units of antidiphtheric serum were injected into the cellular tissue of the left groin at 4.30 p.m. of the day I saw him. Defervescence began 8½ hours thereafter, convulsive tremors ceased and the paramyoclonus disappeared. Pulse dropped to 136, temperature to 101.4°, and the baby began to nurse. Two thousand units of antidiphtheric serum were again injected and defervescence continued by lysis until the normal was reached, about the third day thereafter. Patient made an uninterrupted recovery.

The fever reaction in all of these cases occurred by lysis within 8 to 10 hours after the use of the serum. I believe it was not a coincidence but occurred in each case within the length of time stated. All the children were unusually ill. At the time of first using the serum, November, 1900, I was unaware of the observations of Fourrier and Weisbecker, but was led to use the antidiphtheric serum because of the proximity of a case of diphtheria; thinking the bronchopneumonia in my little patient was of bacillary origin, perhaps due to Klebs-Löffler bacilli. The astonishing result obtained encouraged me to try the antidiphtheric serum in bronchopneumonias complicating the exanthems. Since that time I have used the serum repeatedly in like conditions with uniformly satisfactory results. I have also used it in scarlet fever in which the anginal symptoms were pronounced, and I obtained a rapid amelioration of this symptom, and, in short, of all the distressing symptoms.

I believe we have in antidiphtheric serum a most valuable therapeutic agent for a class of cases otherwise beyond ordinary therapeutic aid; particularly in those cases of bronchopneumonia which so often cause a fatal complication in the bacterial diseases of childhood, such as measles, influenza, whoopingcough and scarlet fever.

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THE ETIOLOGY OF ENDOCARDITIS, WITH ESPECIAL REFERENCE TO BACTERIAL AGENCIES.*

BY

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HISTORICAL SKETCH.

Raymond Vieussens (1648-1716) ascertained the anatomical structure of the heart and learned some symptoms of heart disease. He even made an accurate diagnosis in a case of stenosis. Later, Lancisi (1654-1720) published two books in which he discussed heart disease. He mentioned hypertrophy and dilation of the heart and the connection of dyspnea with cardiac disease.

Albertini (1672-1733) introduced palpation—the first means employed in the physical examination of the heart. He differentiated between disease of the right and left sides of the heart. Morgagni (1661-1771) noted the far greater frequency with which the left side was attacked.

Senac (1693-1770) systematized the existing knowledge of heart disease. He recognized pericarditis and endocarditis as separate affections. Inflammation of the endocardium he placed among the most prominent causes of valvular changes.

Percussion.—Auenbrugger's method of physical examination was first applied to the heart by Corvisart.

Kreisig ascertained the inflammatory origin of pathologic alterations of the endocardium and traced to this source thickening, ulceration, perforation, and aneurysm. He recognized rheumatism and scarlet fever as diseases complicated by endocarditis. Bouillard (1796) emphasized the coincidence of endocarditis with articular rheumatism.

Laennec and Skoda studied and taught the application of auscultation as a diagnostic method. In his book, "Perkussion und Auskultation," Skoda designated the normal heart sounds "tones," the abnormal sounds "murmurs" (geräusche), a classification which is still adhered to. He defined the gross pathologic lesions of endocarditis and deduced the various symptoms each would cause. He verified his conclusions by postmortem examinations. To him is due the credit of having explained the various cardiac murmurs and their import in differentiating the various cardiac lesions.

Microscopic Researches.—The first reports of microscopic observations in cases of endocarditis come from Rokitansky¹ (1855). He described certain fine granular masses observed in endocarditic deposits, but did not determine their nature. About the same time Virchow made a similar observation. But Winge and Heiberg were the first to give definite information in this line of investigation. Winge's² case occurred in a man who, as the result of an abscess on the foot, developed septicemia and died. His heart after death presented evidences of malignant endocarditis, and in the diseased portion of the endocardium the microscope revealed chains of elements which were evidently of a foreign nature. Heiberg's case occurred in a puerperal woman. Dying under septic exhibitions a few days after confinement, bodies similar to those described in Winge's case were found in the ulcerated

heart valves. These organisms, which from their occurrence in chains as well as from their resistance to chemical reagents, were evidently of a bacillary nature—and in fact were probably streptococci—Winge and Heiberg believed they were leptothrix chains. But the finely discriminating eye of Virchow, to whom preparations from both patients were submitted, detected essential differences in structure, and in a postscript to Heiberg's³ report he calls attention to these differences, and cautions against classifying these entities as leptothrix.

In 1873 Eberth⁴ designated two cases as of a diphtheric nature. He arrived at this conclusion by studying the morphologic characteristics of the discovered bacilli and by observing their reaction to the various stains. With bacilli obtained from his second patient he caused a diphtheric process on the cornea of a rabbit. Wedel (1873), Burkhart and Eisenlohr (1874), Meyer (1875), Eichhorst (1876), Gaber, Birsch Hirschfeld, and others reported cases of bacterial endocarditis. In 1878 Klebs published 27 cases in which he had found bacteria. The same year Köster advanced a theory as to the connection or continuity of ulcerative and verrucose endocarditis. He advanced the theory, based on the researches of Weigert, Eberth and others, that the primary pathologic alteration caused by bacteria in the endocardium was a necrobiosis. Consequently the inflammatory phenomena were to be regarded as a reactionary process leading to thickening, shortening of the valve segments, and to the formation of verrucosities. He differentiated further two etiologic varieties of verrucosities, real excrescences or growths, and deposits (auflagerungen). He stated that in all patients with ulcerative endocarditis who were examined soon after death it was only exceptionally that micrococci could not be found, and he announced his belief that in all cases of acute ulcerative endocarditis micrococci had been present in the initial stages.

In 1881 Litten, from the reports of other investigators and from his own observations, felt justified in attributing all cases of endocarditis to parasitic agencies. Like Klebs, he divided endocarditis into two classes—septic and rheumatic.

A definite variety of bacillus in endocarditic lesions was first positively recognized in 1885 by Philippeaux, who obtained cultures of streptococci and staphylococci from material derived from endocarditic deposits.

In 1886 Netter and Weichselbaum identified the pneumococcus and *Bacillus coli*. Heller's discovery of tubercle bacilli in five cases of endocarditis negated Rokitansky's theory that the existence of pulmonary tuberculosis or endocarditis in an individual precluded in that individual the possibility of development of the other—that, in other words, pulmonary tuberculosis and endocarditis could not exist together.

Weichselbaum's review (1889) of the bacteria found in endocarditis embraced the following varieties: Staphylococcus, streptococcus, *Diplococcus pneumoniae*, *Bacillus endocarditidis griseus*, micrococcus, *Micrococcus endocarditidis rugatus*, and *Bacillus endocarditidis capsulatus*. He made plain his opinion that endocarditis was due only to bacteria, and could be caused by many forms.

In addition to the varieties mentioned, typhus (Viti) and diphtheria cases have been described. Gonococci have been recognized in pathologic endocarditic tissues by Leyden (1893), Michaelis, Thayer, and many others. Thayer succeeded in finding gonococci antemortem in the blood of a patient suffering from gonorrhoeal endocarditis. Influenza bacilli have recently been reported, and Leyden has described a fine diplococcus which he believed to be rheumatic.

Experimental Endocarditis.—The first experiments directly connected with endocarditis were performed by Winge and Heiberg. Portions of the embolic masses derived from their cases (Winge, 1869, Heiberg, 1872) were introduced into the bodies of rabbits

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—in some cases subcutaneously, in others intraperitoneally. In none of these animals did an endocarditis develop, although micrococci had been demonstrated in the diseased tissues from both patients. The failure to obtain positive results in these experiments may be explained by the fact that in the endocardiums of the animals experimented upon no *locus minoris resistentie* existed, a condition which later experiments have proved to be prerequisite for the success of such experiments. Conheim supplied a method of obtaining this condition. In lecturing to his students he suggested, in order to produce artificially valvular lesions for the purpose of studying their results, the introduction of a sound into the left carotid artery and the puncturing of the aortic valves. This action would produce mechanically an aortic insufficiency (regurgitation) accompanied by a diastolic murmur. In the later series of experiments on bacterial endocarditis this method of causing a defect in the cardiac endothelium has been adopted quite generally. In my own experiments I employed a fine, blunt cannula with a closely-fitting trochar. By this device I avoided wounding the parts traversed before reaching the valves, and by temporarily ligating the carotid about the cannula the loss of blood was minimized, and so the necessity for hurry, with consequent ill-success of the operation, was obviated. Prudden modified Conheim's operation by the use of chemicals to cause a valvular lesion, and obtained positive results.

To Rosenbach is due the credit of producing, experimentally, the first cases of bacterial endocarditis. He introduced bacilli into the circulation of rabbits recently operated upon by Conheim's method, and succeeded in this manner in causing bacterial endocarditis. His researches resulted in positive experimental cases of streptococcus and staphylococcus endocarditis.

Pursuing similar lines Wyssokowitsch and Orth, in 1886, verified Rosenbach's results by repeating his experiments, and added to the list of cases produced experimentally those caused by *Bacillus endocarditidis* of Nicolaier. This list was further increased by Fraenkel, who experimentally caused pneumococcus endocarditis.

Original Investigations.—Such was the position reached by investigators of the etiology of endocarditis when in 1897 I began a study of the subject. My first experiments were performed while working in Leyden's clinic at the Charité (Berlin). There I repeated, in cooperation with Michaelis, the experiments of Rosenbach, Wyssokowitsch and Fraenkel; and succeeded in obtaining positive cases of bacterial endocarditis with streptococci, staphylococci and pneumococci. The macroscopic lesions in these cases appeared as verrucosities, varying from a pinhead to a pea in size. Microscopically they were shown to consist of organized tissue masses, in the interior and in the deeper portions of which, colonies of the specific bacteria employed were plainly discernible. The nature of the bacteria was further checked by differential staining methods and by culture.

As before mentioned, tubercle bacilli in the diseased endocardium had been repeatedly described. Still there were those who claimed that their presence was purely accidental, and who maintained that the tubercle bacillus could not cause endocarditis. In this series of experiments the tubercle bacillus also gave positive results. In one rabbit, which died six weeks after having been operated upon in the usual method and which had been inoculated with tubercle bacilli immediately after the operation, excrescences the size of a pinhead were found postmortem at the points where the aortic valves had been punctured. Both macroscopically and microscopically these nodules presented the characteristics of tubercles. Furthermore, I succeeded in staining and demonstrating (Verein für innere Medizin, Berlin) considerable numbers of tubercle bacilli in sections made through such a tubercle. In 1898 I published this work

with Michaelis, under the title "Zur experimentelle Erzeugung von Endocarditis Tuberculosa."⁵

My next successful case was with the typhoid bacillus. This case has not been published, but is mentioned by Lee and Weis in their inaugural dissertations for the doctor's degree at the University of Berlin. Several efforts were made to obtain positive cases of typhoid endocarditis, but we were successful only in the one here reported. These experiments were performed on rabbits, and in general the typhoid bacillus is not specifically pathogenic for rabbits. In the successful case the rabbit was inoculated with a culture which had been passed through several rabbits previously and which had, presumably, acquired a specific virulence. The nature of the bacilli in the large colonies found in this case was verified by their decolorizing in the section when treated by the Gram method of staining, as well as by cultures and the demonstration of flagellums in the culture bacilli.

Emmet Holt,⁶ commenting on the exceedingly rare occurrence of acute endocarditis in infancy and early childhood, says that in reports of autopsies of over 1,000 children less than 3 years of age not a single case is to be found. My next case occurred in an infant 2½ months old, and on account of the clinical and scientific importance of this case I shall quote it at some length.

The case was as follows:

Julius Rieger, 2½ months old, entered the hospital October 8, 1898. He was the ninth child, full term, easy delivery (third child was stillborn, seventh was premature). Nourished at breast one month, then artificially. He was always very strong. Appetite was always good, never had vomiting; bowels were always regular, but a rash has been present since October 1. It covers the entire body; appeared first in red spots, later vesicles formed, which broke. Three days ago there appeared on the back of the left hand a swelling which has now almost disappeared. Since last night there is swelling of the backs of both feet. Vesicles and ulcerations of the corners of the mouth have been present three days. The child has been extremely restless and feverish the past week. Father luetic, mother healthy.

Physical Examination.—The child is 60 cm. in height, weighs 4,970 gm. and is of average development. On the face, back and limbs is noticed a widespread papular syphilid. Lips are crusted. Coryza is present and rhagades are seen at the angles of the mouth. Examination of the heart discloses nothing abnormal; examination of the lungs is also negative. The abdomen is distended; liver is exceedingly large. The spleen also is enlarged and is palpable two fingers breadth below the ribs. Examination of the blood shows 3,700,000 erythrocytes, some poikilocytes, hyperleukocytosis, and quite a number of normoblasts and marrow cells. In the stained preparations rod-shaped bacilli are recognized. Urine is concentrated and contains albumin.

October 11, 1898: On the abdomen, which was rubbed yesterday with 0.25 ungt. cinereum, there is a vesicular elevation of the epidermis. Fever and anorexia are present.

October 12-13: Passages are slightly dyspeptic. There is no fever.

October 14: A stool having the odor of decayed proteids. Exanthema is decidedly faded. There are pronounced snuffles and eczema of the ear.

October 15: Stools continue dyspeptic. There is slight edema of the back. The nasal mucous membrane discharged a considerable amount of yellow pus, which did not show any specific bacillus microscopically.

October 16: Cultures of the nasal discharge show pseudodiphtheria bacilli and indefinite cocci. The rhinitis interferes with feeding.

October 17: The dermatitis caused by the inunction is healed. The points of former exanthema are desquamating; the epidermis of the palms of the hand is being cast off in large flakes.

October 18: The rhagades of the mouth bleed frequently; coryza continues; the total amount of nourishment taken has diminished; the stools have become slimy.

October 19: There is decided loss of weight. Temperature 39.4°C. Meteorism is present. Examination of the stools and of lungs affords no important disclosures. A suspicious snoring respiration is present.

October 20: There is high fever, 39.4°C.; retraction of the head, and the face is extremely pale. Abdomen is meteoric and distended. On the right great toe is a well-filled, bloody vesicle, which has appeared suddenly and has a diameter of 1 cm. On the second toe a smaller similar vesicle. A loud, rough, systolic murmur is plainly audible over the heart. Pulse is strong. Voice is hoarse. Diarrhea is present.

October 21: Death occurred at 9.30 a.m.

From October 8 to October 18 the illness was unaccompanied by any particular elevation of temperature. From the latter date till death, high fever was present constantly.

The autopsy showed lobular pneumonia, chronic intestinal catarrh, hepatic interstitial lues.

The pericardial sac contained a dark-yellow fluid. The heart was of normal size; in the right ventricle was a very small blood-clot: the ventricle was fairly capacious. Left ventricle was empty; the walls were of ordinary thickness. The aortic valves were normal; the mitral valves are somewhat thickened at their margins, and easily detachable blood-clots adhere to them. On the superior surface of both segments of the mitral valve near their free borders are several miliary nodules.

The liver is very large—weight 320 gm. Surface is smooth; the cut surface is very hard and shows a fatty appearance. Fatty degeneration in parts of the tissue. Here and there on the cut surface are gray miliary nodules.

From the heart's blood obtained 1½ hours postmortem, pure cultures of pyocyanus bacilli were obtained. Mice and guinea-pigs inoculated with 24 hour cultures so obtained died of pyocyanus septicemia in from 18 to 29 hours, according to the amount of the culture injected subcutaneously. The amount employed in these experiments varied from 0.5 cm. to 1.0 cm. In the miliary verrucosities described on the mitral valve and in the tissues of the valve were found colonies of bacilli identical with those propagated in cultures from the heart's blood.

Finally, with the cultures obtained from this case I caused, experimentally, a pyocyanus endocarditis in a rabbit. This experiment was performed in the usual manner, viz., the aortic valves were perforated by puncturing with a probe through the carotid artery. The vessel having then been ligated and the wound closed, a portion of the culture was injected, under aseptic conditions, into a vein of the ear.

This case, which came under my observation while I was in the Children's Hospital, in Graz, is unique in that it is the only case of positive bacillary endocarditis reported in an infant, as well as the single known case of pyocyanus endocarditis in which a mixed infection did not exist. It is to be noted that in this case *Bacillus pyocyanus* was demonstrated in blood taken antemortem.

This case was followed in the hospital by a pyocyanus epidemic, in the course of which several children died. The epidemic was studied and reported by Professor Theodore Escherich.

Recently Fritz Mayer has caused experimental endocarditis with bacilli obtained from the tonsils of patients afflicted with rheumatism, and which he believes to be the bacillus of rheumatism.

The intimate relationship existing between rheumatism and endocarditis has long been recognized. Primarily regarded as a complication, endocarditis is now received as a manifestation of rheumatism, and in these cases a bacillus is assumed as the cause of both. Should this prove to be the case the proportionally greater frequency of endocarditis in cases of rheumatism in childhood could be easily explained by the lesser power of resistance of the endocardial structures—as of the structures in general—at this age. The complication of the acute infectious diseases by endocarditis may likewise be explained by ascribing to these diseases a bacterial pathology.

Summary.—From what has preceded, together with clinical observation, certain deductions seem proper:

1. Bacterial agencies are active in the causation of endocarditis.

2. The presence of bacteria in the circulation is not alone a sufficient cause; but a predisposition—a *locus minoris resistentie*—must exist in order for them to secure a foothold. (Experiments of inoculation in which the endocardium is not wounded give negative results.)

3. Not all bacteria are capable of causing an endocarditis, but in general those which are pathogenic for the individual may cause endocarditis (under proper conditions). However, under certain circumstances, as in my typhoid case, a bacillus ordinarily nonpathogenic may acquire a specific virulence. And again, as in the pyocyanus case, the lowered vitality of the individual (in pyocyanus case child had hereditary visceral lues) may afford opportunity for an ordinarily nonpathogenic germ to secure a lodgment.

4. There are other causes of endocarditis beside bacteria. From the time when the theory of a parasitic origin of endocarditis was first tentatively advanced

there has been a gradual strengthening of this opinion, until now it is enthusiastically maintained that bacteria are responsible for all cases of endocarditis. This view may be immediately confuted, since certain atheromatous conditions may directly cause the lesions characteristic of endocarditis, without the necessity of any further agency. Furthermore, cases of congenital and infantile endocarditis cannot all be placed in this category, although in some of these such influence may probably operate. This department of the subject—congenital and infantile endocarditis—merits more attention than it has heretofore received. Finally, there are cases of known mechanical and chemical origin. Such are due to traumatism, rupture of the valves or chordæ tendinæ, cases associated with systemic disturbances, such as occur in goiter, diabetes and chronic alcoholism.

Endocarditis may then be classified with reference to its etiology as follows:

1. Congenital and infantile endocarditis may be due to defective development, to reparative processes as suggested by Parrot and to other causes (unknown).

2. Endocarditis due to known bacterial agencies, *e. g.*, streptococcus, staphylococcus, tubercle bacilli, pyocyanus bacillus.

3. Endocarditis of probable bacterial origin, associated with definite diseases presumably of a bacterial nature but of which the bacterial agents are still undiscovered, *e. g.*, rheumatism, chorea, syphilis, exanthems, etc.

4. Endocarditis due to mechanical or chemical insults, *e. g.*, blows, strains, noxious excretory products in the blood, alcohol, atheroma.

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THERAPY OF OTITIS MEDIA SUPPURATIVA CHRONICA.¹

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Owing to the diversity of opinion as to the advisability of using various substances in the treatment of chronic suppurative otitis media, and because of the difference of opinion as to the results obtained by the use

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of the various drugs, one ought not, in presenting this subject, to confine himself to those treatments and operations which he himself has found to be best. The medicamentarium of most of us is too limited to allow of the expression of a positive opinion as to the actions of all drugs. Rather, one ought to present the different treatments as given by the leading otologists of today. This seems very easy to do, but when one examines carefully the literature of various authors he finds it quite difficult to reconcile their opinions as to the results to be derived by the various treatments and operations.

At the 1902 meeting of the Western Ophthalmologic and Oto-Laryngologic Association there was held a symposium on this subject and those of us who had the pleasure of being present were convinced that the treatment of this disease was far from being a fixed one. Various authorities said they had secured from a certain treatment of this disease favorable results varying from 15% to 100%. A certain method was thought to be the very best by some and of no use by others.

Examination of the literature of today gives similar results. For instance, many authorities recommend diluted hydrogen dioxide as the best cleansing agent and disinfectant for the middle ear, while Dench¹ says it is no better than any other antiseptic solution for cleansing the ear, and is often deleterious; because it may cause trouble by pressure if the fluid enters the antrum of the mastoid. Randall² says, "Even the fundamental facts of aural surgery have not yet been grasped by otological practitioners, and as a result of their observations they entirely disagree."

An explanation of these differences of opinion may readily be found. Chronic suppurative otitis media includes a large number of different conditions. The middle ear is not composed simply of the tympanic cavity, but it includes the eustachian tube, tympanic cavity, and the antrum of the mastoid and the mastoid cells, and those cells may frequently pervade the whole temporal bone from the zygoma to the sella turcica and may invade the occipital bone behind and below.³ We may have an involvement of only one of these different parts or even of only a part of one, as when we have suppuration limited to the lower part of the tympanic cavity, or two or more of the cavities may be involved. The part which is affected may have a number of pathologic conditions.

There may be simply an increased secretion on the part of normal sized glands. In other cases one might have this same condition and in addition a little pocket, formed by fibrous bands in the upper part of the middle ear, and in this pocket the secretions may have collected and become impacted so that there would be present a constant additional irritant to the mucous membrane of the ear, or the mucous membrane may be edematous and thickened with or without infiltration and the formation of fibrous tissue. Then we may have polyps, small or large, interfering with the escape of the secretion. There may be an ulcerated mucous membrane with or without a superficial or deep necrosis of the bone. One would be very foolish to suppose that a given medicine or treatment would be beneficial, or produce a cure in all these conditions. The treatment is influenced by the quality and quantity of the secretion, by the secondary changes in the external meatus, position, and size of the perforation of the drum, and the general health of the individual.⁴

The climatic condition of one's location, or the class of patients one has to deal with, or the prevalence of certain epidemics, might produce a series of cases which would possess some one of these characteristic conditions more than another, and as a result one might naturally conclude that the best treatment for chronic otorrhea would be the treatment which he found to be the most beneficial in his cases. Politzer gives us a nice explanation of why we might be in favor of one medicine in the

treatment of this disease when he says⁵ that in many cases one drug will not produce any effect in chronic suppurative otitis media, while for some unexplained reason another will act very successfully.

As to the different antiseptics which are used in the middle ear, Dench very nicely sounds the keynote of the whole affair when he says⁶ that in syringing the ear we may use either bichlorid of mercury solution, a saturate solution of boric acid, or a 2% solution of carbolic acid, or any other convenient solution.

There has been such a great difference of opinion among otologists as to the practical treatment of otorrhea that Allport⁷ divides ear specialists into three classes: (1) The ultra conservatists, who still possess an abiding faith in syringing, inflation, drugs, etc.; (2) the conservatists, who try the above treatment for several months, and failing in this, resort to more radical measures; (3) the radicals, who as soon as chronicity is established proceed to open the mastoid and tympanum.

Those of the first class are gradually going over to the second class, in which we find men like the late Dr. Gruber, Politzer and Urbantisch. Among the radicals we find some of the very best men of today, as Stache, Schwartz, Holmes, Yansen and Dench.

The treatment of chronic suppurative otitis media should be divided into two classes, medicinal and operative.

Medicinal treatment has for its function the cleansing and disinfection of the middle ear, the removal of excessive secretions by astringent action, and the removal of hypertrophies by caustic action. It would be impossible to name all of the drugs that have been used for these purposes.

Politzer⁸ says that most important in the treatment of chronic otorrhea is a thorough cleansing of the secretion, for if it remains in the middle ear it will result in the ulceration of the mucous membrane and bone. In cleansing the middle ear one must use other means beside medication and syringing through the external meatus. Secretion can be removed by politzerization, the use of Siegel's speculum, by catheterization, and by syringing through the eustachian tube.

MacCuen Smith⁹ says that in irrigating the tympanic cavity the solution should be made to pass through the eustachian tube into the nasal pharynx by directing the patient to open and close the mouth several times and to make repeated efforts to swallow.

Aitken¹⁰ mentions a very good method of applying drugs to and cleansing the middle ear. He takes a probe having at its end two spiral teeth, and wraps cotton around the end so as to form a swab which will fill the external meatus. This he uses as a piston forcing the fluids into and then out of the accessory cavities. One is often surprised to see how large an amount of debris can be removed by such a simple measure after all that can be has been removed by syringing.

Hovell¹¹ recommends the use of the tympanic syringe to syringe out the middle ear through the perforations in the drum.

For cleansing the middle ear we may use sterilized warm water, containing 1% of sodium chlorid, which will help dissolve the pus.¹² If there is any disagreeable odor we may add carbolic acid, 1%. After syringing the ear once or twice, some cotton on the end of a probe should be used to remove all debris possible, until a nice, clean, bright red surface is obtained.

The use of digestive ferments for removing dried and impacted pus has gained some prominence. Papain, which will dissolve dead tissue and false membranes, and which will not attack living tissue, has been used for this purpose. Johnson, of Edinburgh¹³ reported that papain possessed remarkable efficiency for the removal of debris from the middle ear. Hovell¹⁴ says that a solution of pepsin and papain not only removes the debris, but will also dissolve cicatricial tissue, filaments and

bands. Munger¹⁵ reports good results from the use of enzymes for dissolving the foreign material. Chambers¹⁶ also reports good results in otorrhea from the use of other proteolytic enzymes, in connection with the cleansing of the tympanic cavity. In cleansing the middle ear a large opening should be made in the drum if the perforation is small.

The disinfectants, both liquids and powders, which have been used in this disease, are almost numberless.

Among the liquids we have¹⁷ carbolic acid 1%, corrosive sublimate 1/200%, resorcin 4%, salicylic acid .5%, formalin¹⁸ .5%, iodoform emulsion, hydrogen peroxid and camphoroxol. Of powders, Politzer¹⁹ recommends first boric acid; second, iodoform; third, iodol. Bishop²⁰ recommends aristol as one of the best powders to be used in the middle ear.

Carbolic acid, 1% solution is especially indicated when we wish to combine a disinfectant with a deodorizer²¹. If the odor is very disagreeable one may use 1/200% solution of mercuric chlorid. In such cases, however, one should be very careful that the solution does not run down the throat.

Boric acid, while not a strong disinfectant, has been shown to possess a very efficient therapeutic action in chronic otorrhea. Hovell²² says practical experience has proved that the best results are obtained by the use of boric acid solution and boric acid powder. Formalin, in addition to its disinfectant and deodorant action, is said to possess the special property of preventing the growth of granulations and to aid in the healing of ulcerated surfaces.²³

Iodoform emulsion is one of the very best substances for use in this disease, especially when there is a tuberculous history. It is one of the disinfectants which can be kept in contact with the surfaces of the tympanic cavity for a long time. In using iodoform emulsion it is my practice to cleanse the ear with one of the disinfecting solutions, dry thoroughly, and then with the patient's head turned upon one side, pour into the external meatus the iodoform emulsion until it is nearly filled. Then I take a cotton swab which just about fills the external meatus and, by applying pressure, force the emulsion down into the tympanic cavity and sometimes through the eustachian tube into the throat. Owing to the viscosity of the emulsion, by blocking up the external meatus with a little cotton, the medicament may be held in contact with the walls of the tympanic cavity for 24 hours. Patients do not complain of the odor of the emulsion when used in this way, and it has given me very nice results, especially in those cases in which there was more or less necrosis in the middle ear and the patient objected to the radical operation.

With the exception of Dench, hydrogen dioxid has received almost universal recommendation by the authorities. It is a good disinfectant because of the readiness with which it penetrates into the crevices and corners of the middle ear, dissolving out the mucus and pus. It is used in a strength from 6% to 10%. It is very efficient when there is a simple hypertrophy of the mucous membrane, no stricture of the eustachian tube, and no necrotic bone. When there is much pus impacted in the middle ear I frequently use the ordinary hydrogen dioxid undiluted, applying it directly to the mucous membrane by means of a swab.

Since 1899, when Stetter²⁴ reported for the first time the use of camphoroxol in chronic suppuration of the middle ear, it has been much used. Beck,²⁵ of Berlin, states it should be a 33½% solution of alcohol, containing 1% of camphor and 3% hydrogen dioxid. He further says that it has just twice the disinfecting action of hydrogen dioxid, a 5% solution in water having a well marked disinfecting action. Stetter says that both camphoroxol and menthoxol are superior deodorizing disinfectants. Pond²⁶ recommends the use of camphoroxol in otorrhea. North²⁷ says that he has secured very good results from the use of the same drug. Dr. Hotz²⁸

reports success from its use in otorrhea. He uses it undiluted on a swab and applies it directly to the parts of the tympanic cavity. He then gives the patient equal parts of camphoroxol and water to drop into the ear every morning and evening. In addition to this treatment, when possible he uses the intratympanic catheter to irrigate the tympanic cavity with boric acid solution through the eustachian tube. He reports cases in which he was sure the mastoid operation would have to be performed in which cure ensued upon injecting equal parts of camphoroxol and water into the tympanic cavity. He reports this treatment as resulting in a permanent cure in cases in which the classic symptoms of mastoiditis were present. He states camphoroxol had no effect upon granulations, and reports three cases in which operations were positively indicated and which a cure was brought about by the use of camphoroxol.

Phelan²⁹ says it is nonirritating and stable, and that while some patients have no pain with an undiluted solution, others suffer great pain from a 10% solution. He believes that many cases seeming to demand operation may be cured by its use.

It has the advantage that it combines with the disinfecting, cleansing and deodorizing action of hydrogen dioxid the astringent action of alcohol. Hydrogen dioxid exerts a disinfecting action, which lasts only from three to ten minutes, but as the parts come in contact with the camphor a disinfecting action is exerted which continues for some time afterward. The camphor also acts as a sedative. It has proved so satisfactory in my practice that it has replaced almost entirely hydrogen dioxid.

Of the astringents which are used in chronic otorrhea we have, among others, a weak solution of silver nitrate, varying from .25% to 2% solution; zinc sulfate, 2%; copper sulfate, .5%.³⁰ Hovell³¹ says the use of astringents is far less efficacious than boric acid solution. Politzer³² recommends the use of alcohol as an astringent, especially if there is a hypertrophied condition of the mucous membrane, or if small polyps are present. He says one ought to begin with a diluted solution and work up to the concentrated. Knapp³³ recommends the use of zinc sulfo-carbolate, 1 or 2 parts to 50 parts alcohol and 50 parts water. When a large perforation exists and also in cases of otorrhea with only a scanty discharge, Urbantschitsch³⁴ recommends the employment of gelatin bougies containing such astringents as acetate of lead, tannin, copper sulfate and zinc sulfate. He also uses thin plates which can be cut into small strips and passed through the perforation into the tympanic cavity.

As a caustic, solutions of silver nitrate and chromic acid are used. Silver nitrate may be used in solutions varying from 5% to 25%, dropped into the ear or applied by means of a swab. Before using either silver nitrate solution or chromic acid a few drops of 5% solution of cocain should be dropped into the external meatus. After the use of silver nitrate, sodium chlorid ought to be dropped into the tympanic cavity. The use of silver nitrate is commonly indicated with perforations and granulations in the middle ear and in the superficial necrosis of the temporal bone. If one can see the polyps it is better to cauterize them with caustic acids and the actual cautery. In using either of these two things one must be careful and not cauterize too much, or there may be a reaction, resulting in an inflammation that may even threaten the patient's life.

In applying powders to the tympanic cavity and the meatus the tympanum is cleansed very carefully by syringing and inflating by Politzer's method and then carefully dried. The powder is blown into the ear by means of an insufflator. The powder should only be used by the physician and only when he is seeing the patient every day.

Dench³⁵ says under no condition should a patient be supplied with powder to blow into the ear. Even when

the perforation is very large it is possible for the preparation to dry in a firm crust after absorbing the discharge, and this crust, becoming closely attached, constitutes a barrier to the free exit of the secretion. Even when applied by a physician the patient should be directed to syringe the ear immediately when there is pain or giddiness. This trouble may be avoided by just barely covering the membrane with the powder.

In using any one, two or three of the remedies mentioned we must always remember when the patient does not do well to change to some other drug, because in many cases when one medicine will not produce the desired result another will be very efficient. In carrying out any treatment it is advisable to make frequent examinations of the discharge with the microscope to see if there is any diminution in the number of microbes.³⁶ Dench³⁷ recommends when other things have failed, the application of a little piece of paper to the drum-head, as recommended by Blake. The paper moistened in mercuric chlorid 1 to 1,000 is pressed down on the membrane so as to occlude the opening. The stimulation which this foreign body produces is frequently sufficient to affect a complete closure of the opening in the drum-head, while its protective action produces retrograde changes in the congested lining of the middle ear.

The so-called dry treatment, the use of a piece of gauze for drainage in the external meatus, materially aids in the treatment by removing from the middle ear deleterious secretions as soon as formed, and by itself is frequently sufficient to cure the disease.

Politzer³⁸ recommends the dry treatment if there is a constant discharge from the middle ear, but holds that it is contraindicated in cholesteatoma, granulations, caries in the temporal bone and when the mucous membrane is sensitive. McBride³⁹ says that it can be rarely attempted with any probability of success, but occasionally it succeeds when other remedies fail. Bishop⁴⁰ warns us against it if the middle ear is at all sensitive. MacCuen Smith⁴¹ advises its use when cases do not progress favorably, but holds that it is contraindicated when the perforations are small.

Ballanger⁴² divides suppuration of the middle ear into four classes: (1) Suppuration of the middle ear proper; (2) suppuration in the attic; (3) suppuration involving the attic and antrum; (4) suppuration involving the tympanum, attic, antrum, antrum and mastoid cells.

He advises dry treatment in the first class of cases only.

The dry treatment in my hands has not been very efficacious when used alone, but has been very successful when used in connection with medical treatment in those cases in which there was an abundant discharge from the middle ear.

Of the greatest importance is the constitutional treatment. Hovell⁴³ says anemia, scrofula and syphilitic conditions should be treated by internal medication. Politzer⁴⁴ says the internal administration of tonics and alteratives and the placing of weak children out of doors will aid greatly in securing beneficial results by increased nourishment of the parts in the middle ear. Thiosinamin has recently come into extensive use in connection with all diseases of the middle ear. While this drug has been used mostly for otitis media catarrhalis sicca, it has also been used extensively in chronic otorrhea when fibrous tissue has been formed. There is a great difference of opinion as to the value of the drug in this connection. Professor Hebra⁴⁵ recommended its use in opacities of the cornea. Liebreich⁴⁶ is not impressed with the remedy because of the uncertainty of its therapeutic action. Shoemaker⁴⁷ says injections of thiosinamin have a decided effect upon corneal opacities. Upson⁴⁸ states that its value is due to the fact that it increases the number of leukocytes and causes the absorption of morbid tissue and scars. He claims that it is useful in removing fibrous tissue in any part of the

body. Beck⁴⁹ reports that it will improve tinnitus, and he also recommends⁵⁰ its use in all cases in which absorption of fibrous tissue is advisable. He reports two cases of chronic suppurative otitis media in which secretion was almost controlled and in which there was considerable tinnitus, resulting from fibrous bands formed during the active process. He secured a fair improvement from the use of thiosinamin. Dr. Suker⁵¹ says it is especially good when there is a small perforation. The drug is probably best given as recommended by Beck,⁵² in 1 grain doses three times a day, gradually increasing to a dose of 3 grains three times a day. Suker⁵³ recommends 3 grain doses three times a day at the start. In using the drug one must always remember its contraindications. It should never be used without consultation with the family physician if there are any abdominal organs which are being held in position by scar tissue as the result of an operation, or if there are any tuberculous nodules in the lungs, the microbes being hemmed in by fibrous tissue, the most serious results might be produced by its administration.

Alderton⁵⁴ recommends for chronic otorrhea atropin in small repeated doses, and pilocarpin in doses of 1/12 grain twice a day. They are never to be given together.

If patients are healed by any of the above treatments, cotton should be kept in the ear during cold and damp weather, the feet should be kept warm and dry, and they should not expose themselves any more than possible to prevent a return of the trouble.⁵⁵

In addition to the systemic treatment all causative agents must be removed, such as adenoids, spurs, deviations of the septum and the various forms of nasal pharyngitis and strictures of the eustachian tube.⁵⁶

As operative procedures we have, first, the removal of polyps; second, ossiculectomy; third, curetting; fourth, the radical operation.

Polyps may be removed either with the snare or ring knife. Before removing a polyp with a snare, a 10% solution of cocain should be dropped into the middle ear. With a little care the polyp with its pedicle may be removed entire. Care should be taken with very large polyps not to tear away a plate of bone which may form the wall of the cochlea or semicircular canal, or the roof of the tympanic cavity. The smaller polyps may be removed more readily by means of the ring knife. After the removal of the polyp its base should be cauterized with silver nitrate or chromic acid. With me this operation has been a very unsatisfactory procedure, even when the bases of the polyp have been cauterized. I have had frequent recurrences. It is now my custom always to investigate with a probe so soon as the polyp has been removed, and if an extensive periostitis or necrosis of the bone is found to recommend the radical operation.

Indications for ossiculectomy and the results secured vary much with different authorities.

Politzer⁵⁷ gives the following indications for ossiculectomy: (1) When caries of the temporal bone is present; (2) when there is an interference with the free discharge of pus; (3) when cholesteatoma is present; (4) perforations in the membrana Schrapnelli; (5) when there are granulations in the upper part of the tympanic cavity. Buck⁵⁸ says if impacted pus and other substances cannot be removed from the tympanic cavity by other means, perform ossiculectomy. Dench⁵⁹ recommends it when necrosis of any of the parts of the middle ear can be discovered. Ballanger⁶⁰ says it should be performed when the suppuration is confined to the attic and the antrum as it converts the attic and the middle ear into one cavity. Pierce⁶¹ says that he has had 100% good results from the operation. Holmes⁶² has had 98% good results. Randall⁶³ has never secured a good result from ossiculectomy. However, he does not believe in the operation, and only carries it out as a last resort. He maintains that if the discharge cannot be stopped by removing the debris and getting good drainage from the

middle ear, that it cannot be done by ossiculectomy, and the results of his operations seem to indicate that such is the case. In one of his articles, however,⁶⁴ he says: "Those upper portions of the tympanic cavity which are with difficulty seen or reached from the external ear have great pathologic importance, for when drainage fails here, there is no soft membrane to give in a safe direction an easy exit to the pent up secretion. In this condition the removal of the drum-head and ossicles is advised when they seem to be obstructive in this suppurative condition." Ludwig⁶⁵ reports 42 cures in 75 cases operated upon by ossiculectomy and curetment. Grunert⁶⁶ cites 13 cures in 28 operations. Dench⁶⁷ reports 47 cures in 81 cases. In 19 cases operated upon, I have had 14 good results. Ossiculectomy should certainly be performed whenever we find one of the small bones has a necrotic area.

Quite frequently the long process of the hammer is necrotic. If this is the only necrosed bone in the middle ear, its removal may stop the process. If the necrosis is limited to one bone, as it is quite frequently in the case of the long process of the hammer, and if the tympanic cavity does not contain hypertrophied mucous membrane or granulations, curetment is not advisable. If these things are present, however, curetment followed by the use of silver nitrate is a very good procedure.

The most satisfactory treatment for chronic suppurative otitis media is the radical operation. The danger of the operation is very small. In the hands of the skilled surgeon it should be hardly more than double the scarce-measurable dangers of etherization, and unless extensive lesion is found there should be practically no scarring.⁶⁸ A thorough knowledge of the anatomy of the region is absolutely essential for the performance of this operation. Dr. Randall told me that he had never had a case of facial paralysis from the radical operation. Healing results in from one to four weeks, and mortality from the mastoid operation varies largely from extraneous causes, few, if any, deaths being ascribable to the intervention. Before performing the radical operation one ought to examine the fundi to see that there is no choked disc indicating involvement of the brain or its meninges and the other symptoms of trouble at the base of the brain should be looked after.

Leutert⁶⁹ recommends the lumbar puncture in order to tell whether the chronic suppuration has extended into the cranial cavity or not. The puncture should be made between the fourth and fifth cervical vertebrae. Pierce⁷⁰ recommends treatment two months and then if the discharge continues performing the radical operation. Politzer⁷¹ recommends the radical operation if extensive caries of the temporal bone is present. In all cases when one can find an extensive necrotic area in the wall of the middle ear, and in all cases in which the discharge will not be stopped by ordinary treatment the radical operation should be resorted to. When mastoiditis is present it is indicated. One is even justified in performing this operation when extensive necrosis is suspected. Certainly if the general surgeon is justified in exploring the peritoneal cavity, the otologist is justified in exploring the mastoid cells. The mastoid operation is the only means by which we can secure thorough drainage from the antrum of the mastoid.

Randall⁷² says that the tympanic antrum is involved in almost every suppuration, and before the suppuration can be stopped it must be drained. It is the only procedure by which we can remove a large amount of dead bone from the middle ear.

Certainly there have been more deaths as the result of not operating than from the result of unnecessary operations.

I can safely say that it is a procedure which has given me by far the best results with the least loss of time to those suffering from a bad form of chronic suppurative otitis media. I do not believe it wise to treat the majority of our patients for two months before

operating. I believe that if there are large polyps or caries of the temporal bone, or if there is long-standing suppuration in the attic accompanied by cholesteatoma, that we ought immediately to relieve the patient from danger of serious consequences by doing the radical operation. I have never performed a radical operation which was not perfectly satisfactory to the patient. The importance of urging the radical operation when there is a persistent discharge cannot be overestimated. The nearness of the middle ear to the brain and the lateral sinus make it imperative that this suppurative process be removed.

I could enumerate a large number of cases in which valuable lives have been lost simply because the suppurative process was allowed to exist in this most dangerous locality.

Germs may pass through the oval or round window into the internal ear and then directly into the cranial cavity through the ductus endolymphaticus, or they may be carried either by the blood or lymph into the brain and produce an abscess or meningitis.

To recapitulate: When a patient presents himself with this trouble in the middle ear it is best to make as good a visual examination as possible. One ought to try investigation with a probe. If the ear is sensitive a little chloroform should be administered, in order that a complete examination may be made. If on making this examination one finds that there is a necrotic area in the middle ear, shown by a roughness of the bone, an ability to pass the probe into the antrum of the mastoid, or by the irritation of the facial nerve, an immediate radical operation should be advised.

If one finds a roughness of the long process of the hammer, its extraction is recommended. If there is a roughness of any of the other small bones of the middle ear with a hypertrophied condition of the mucous membrane, or if cholesteatomatous masses can be discovered, ossiculectomy, followed by the use of silver nitrate, is recommended. The presence of polyps indicates their removal, the cauterizing of their bases, and the use of astringents. The absence of polypoid growths or necrosis would indicate a cleansing of the middle ear, disinfection and the use of mild astringents.

If in any of these cases the discharge does not disappear, the radical operation ought to be strongly insisted upon.

In many cases, when there is simply a collection of dead cells and pus in the middle ear acting as an irritant, the simple cleansing of the ear will be sufficient to cause the trouble to disappear. In other cases, when we have a hypertrophied condition of the mucous membrane, one or two weeks' treatment may be sufficient to stop the discharge. In the majority of cases, however, the discharge will not disappear, or if it does, it will return whenever the patient is exposed to the cold.

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THE LORENZ OPERATION, WITH REPORT OF A CASE.

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The following successful operation for congenital dislocation of the hip illustrates the technic employed by Professor Lorenz in his so-called "bloodless" operation:

T. B., aged 5 years, male, suffering from double congenital dislocation of the hips, was referred to me by Dr. Frank V. Cantwell, of Trenton, N. J.

There was nothing in the prenatal history to account for the deformity, but the mother states that the labor was accelerated by the attending midwife, and to this haste attributes the deformity.

On examination the dislocations were found to be upward and backward, the top of the trochanter being on the right side, two inches above Nelaton's line, and in the left 1½ inches above.

The trochanters were prominent; the lordosis was excessive, showing an obtuse angle at the junction of the sacrum with the lumbar vertebra.

Traction of the limbs reduced the deformity slightly, but the heads of the femurs could not be placed in their normal positions. The child walked with a sideward rolling movement, a form of locomotion expressed by the term "waddle."¹

The Preliminary Treatment.—For 10 days before the operation the patient was placed in the recumbent position and traction weights of 6 pounds were attached to each leg. This stretched the powerful muscles about the hip-joint and rendered the reduction less difficult.

The Operation.—The operation consisted of five distinct parts, which must be employed in the order given:

1. Hyperabduction and tearing of the adductors. The pelvis was fixed by an assistant, the limb was forcibly abducted and the adductor muscles were separated from their attachments to the pelvis by manual pressure.

2. Hyperflexion.—The patient in the prone position, the lower extremity was slowly and forcibly flexed until the foot touched the ear, in a similar manner to the method employed in stretching the sciatic nerve.

3. Hyperextension.—The patient lying upon the opposite side the lower extremity was forcibly extended, the knee being bent.

¹The child was admitted to St. Francis' Hospital, Trenton, N. J., and with the assistance of Dr. Frank V. Cantwell, the attending surgeon, Dr. Howard Reed of Philadelphia, and the resident staff, the reduction was successfully accomplished by the writer in the presence of a large number of local physicians.

4. Traction.—The patient lying in the prone position, forcible traction was made upon the extremity by means of a skein of yarn fastened about the ankle, the pelvis being fixed by the hand of an assistant.

5. Reduction.—The reduction of the head of the femur into the acetabulum was accomplished by placing a triangular wooden block beneath the trochanter, the patient lying in the prone position, and strongly abducting the thigh. After the head of the femur was reduced, the anterior part of the capsule was enlarged by hyperabduction of the thigh together with rotation.¹

The Dressing.—The limbs were held in a hyperabducted position with the knees flexed by means of a heavy plaster-of-paris dressing. They were first encased in stockinet drawers, cotton batting and muslin rollers, the perineum being entirely covered in by figure-of-eight turns. A movable strip of muslin was inserted within the stockinet drawers with a free end extending above and below for the purpose of massage and cleanliness. From 12 to 15 plaster-of-paris bandages were applied, completely covering the muslin rollers. A large fenestrum was removed from the perineal region, and the dressing trimmed over the popliteal spaces.

The dressing will remain on for six months. The reduction of the dislocation in the right limb was much more difficult than in the left, and more forcible traction had to be employed.²

After-treatment.—After the removal of this cast the after-treatment will extend over a period of 18 months. Passive and active movements of the hips will be used, the limbs being gradually brought forward into the frontal plane.

The patient will be supported upon a stool, and an apparatus to make compression of the hips will be applied. The patient walks with the limbs in an abducted position throughout almost the entire period.

A CONTRIBUTION TO PERNICIOUS ANEMIA.

BY

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As early as 1821 Andral described pernicious anemia. He was followed by such writers as Coombe (1823), Marshall Hall (1837), Piorry (1840), and others, but Addison (1843) unquestionably deserves the credit for having first accurately described the disease. He called it "idiopathic anemia." To Biemer (1868) we owe a revival of interest in the subject.

Biemer,¹ in his article on anemias, classified as "essential anemia" all those conditions which lead to a progressive destruction of red blood-cells (poikilocytosis, etc.) associated with a disturbance on the part of the nervous system uninfluenced by medicaments and finally terminating fatally without discovering any accountable pathologic lesion in the various organs.

It was demonstrated later that such intestinal parasites as *Bothriocephalus latus* (Botkin, Dehio, Hoffmann, Müller, Natason, Askanazy, Reyher, Runeberg, Jawein, Schapiro, Lichtenheim, and others) and the *Ankylostoma duodenale* (Hirsch, Daniels, Bäumlner, Wucherer, Griesinger, Bilharz, Bowen, Lichtenstern, and others) often produce the clinical as well as the hematologic picture of a primary pernicious anemia, and after the expulsion of the parasite the individual made a speedy recovery.

Becker² reports a case in which two *Tenia mediocanellata* produced the same picture as idiopathic pernicious anemia. Fenwick,³ in 1877, called the attention of the medical profession by publishing four cases of so-called idiopathic pernicious anemia associated with gastrointestinal symptoms, which ended fatally. In each case he was able to demonstrate microscopically an atrophy of the glands and mucous membrane of the stomach. Subsequently analogous or similar changes found in the stomach were reported by Haberschon, Ponfick, Schumann, Nothnagel, Nolan, Brabazon, and others. Fenwick, from his findings, gave as the etio-

¹As a test that the reduction had been accomplished, the knee-joints could not be extended beyond a right angle.

²The anatomic conditions present, the thorough reduction and the age of the child, promise a favorable functional and anatomic result in this case.

logic factor of pernicious anemia an atrophy of the parenchymous structure of the stomach followed by a subsequent inanition. In a later publication he modified his theory.

Later the toxin theory was established, this being based upon the fact that owing to the absence of the gastric juices, ptomains were formed in the alimentary tract which became absorbed, causing a hemolysis (McPhedran,⁴ Osler and Henry,⁵ Hunter,⁶ Fenwick,⁷ Kinikut⁸).

Rosenheim⁹ (1888) published two fatal cases of severe anemia associated with marked gastrointestinal disturbance, in which the necropsy showed as the only accountable pathologic lesion an atrophied condition of the glands and mucous membrane of the stomach.

Eisenlohr¹⁰ published a case of severe fatal anemia with secondary anemic degeneration of the spinal cord, in which the patient had never manifested any gastrointestinal symptoms, though free HCl and pepsin were absent. The necropsy revealed an atrophy of the glandular structure, the submucosa and mucosa muscularis of the stomach.

Wiltschur¹¹ (1883) published a similar case with a fatal ending, though in his case there was no secondary changes in the cord as noted by the foregoing authors. In this case, however, the gastrointestinal symptoms were very pronounced, manifested in frequent vomiting and diarrhea.

Grawitz,¹² in his discussion on the etiology of primary pernicious anemia, gives as the causation an atrophy of the glands and mucous membrane of the stomach and intestines, giving rise to an insufficient assimilation and the formation and absorption of ptomains in the small intestines followed by hemolysis. In the same discussion Hausmann found in 22 cases of idiopathic anemia no other accountable lesion than the gastrointestinal changes already enumerated, and therefore looks upon "anadenia" (Ewald) as being the etiologic factor.

Jacob,¹³ on the other hand, expresses a different opinion from those of the authors thus far quoted, giving as the cause of pernicious anemia some unknown virus, and regarding the alimentary changes as secondary. Ewald, however, regards the changes in the digestive tract as primary. Strümpell¹⁴ sees no connection between pernicious anemia and the changes in the gastrointestinal tract.

Cabot,¹⁵ in a series of eight autopsies in pernicious anemia, did not find atrophy of the gastric tubules in any case.

Hunter,¹⁶ in looking through the literature on the subject, collected 273 cases (83%) of pernicious anemia in which gastrointestinal symptoms had been manifested, and regarded the destruction of the corpuscular elements as being directly due to the absorption of a bacterial poison produced by the swallowed bacteria, as in caries of the teeth, etc.

According to Senator,¹⁷ the atrophic changes found in the stomach are not sufficient to produce such severe anemia. He calls attention to the fact that after the complete extirpation of the stomach, changes do not occur as in pernicious anemia. In regard to changes in the intestines, he says "many cases come to the autopsy table with a chronic enteritis, showing an atrophied condition of the glands without ever having shown any signs of anemia during life."

Strauss,¹⁸ from a series of experiments on absorption and metabolism, concludes that the changes in the stomach are secondary. Faber and Bloch¹⁹ state positively that the gastric changes are not the cause of pernicious anemia. Dana²⁰ believes that pernicious anemia, while a disease of hemolysis, is primarily one of hematogenesis. He gives little consideration to the ptomain theory. Schumann²¹ discusses it as a toxemia. Bain²² regards primary pernicious anemia as a primary blood destruction taking place in the portal area as the result of some toxic agent, but speaks little of the changes found in the alimentary tract.

Adami²³ considers pernicious anemia to be the result of a subinfection, as he terms it, through the gastrointestinal tract. Ransom²⁴ concludes that the hemolysis is due to the absorption of a hemolytic poison from the intestinal canal.

During my service as interne in Professor Nothnagel's clinic I had the opportunity of seeing two cases of pernicious anemia brought to the autopsy table, and in each case there was atrophy of the glands, mucosa, and submucosa of the stomach and small intestines. During life each patient presented marked gastrointestinal symptoms, such as vomiting, etc. A test-breakfast (Boas-Ewald) in each case showed free HCl and pepsin ferment absent. Lactic acid was not present.

From the superficial amount of literature given, it will be readily seen that the pathologic changes found in pernicious anemia are by no means agreed upon, though the consensus of opinion is toward an "achylia gastrica" (Einhorn) as the existing lesion. It is still more unsettled as to whether the hemolysis is due to the absorption of some toxic material in the alimentary tract, or whether it is a primary hematogenesis.

To me the formation and absorption of some toxic agent in the alimentary tract seems most plausible, and upon this assumption I base my therapy, which consists of daily irrigations of the intestinal tract. The improvement will be seen from the following case:

Mrs. K., aged 32, an American, has no children. Her family history is good. She was operated upon three years ago for a narrow cervical canal, otherwise she never had any ailment until the present trouble.

In July, 1900, she became quite nervous and easily excited. This she attributed to a neighbor, who caused her considerable worry. During the month of August she had an attack of diarrhea associated with colicky pains in the abdomen, of such a persistent nature and causing such exhaustion that medical assistance was sought. After being under treatment for some days the diarrhea ceased and the pains in the abdomen disappeared. The patient now had good health for some time, save that she was nervous and excitable at times. Later she was troubled frequently with attacks of diarrhea associated with pains in abdomen, lasting for a period of three to four days, but not until the following year (1901) did the patient notice any marked changes in herself. From this time on she noticed a gradual weakness, that she became easily fatigued upon the slightest exertion, and had frequent attacks of palpitation, vertigo, shortness of breath, etc. The pallor, weakness, and anemic symptoms, such as headache, palpitation, etc., gradually increased, the patient still being troubled with her bowels periodically. Gastric symptoms, as vomiting, etc., were not manifested. In November, 1901, the patient's condition necessitated her confinement to bed, and medical attendance was required. In spite of the fact that arsenic and the different iron preparations were given, the patient still continued to grow gradually weaker and weaker. In March, 1902, she was sent to the hospital and came under my care.

Examination showed a middle-aged, comparatively well-nourished woman. She complains of extreme exhaustion, anemic symptoms (sleeplessness, palpitation, etc.), distressing cough, loss of appetite, diarrhea and cramping pains in the abdomen. Her pallor is extreme and of a waxy character. The conjunctivas, lips, and the mucous membrane of the mouth are almost bloodless. The scleras present a slightly subicteric appearance. There is a moderate general edema. Panniculus adiposus is moderately well developed. Muscles of the extremities are somewhat flabby. Over the entire body dark brown pigmented spots are seen, most marked on the back of the hands and forearms. They are irregular in shape and vary in size from a pin's head to a pea, some are slightly larger (probably an arsenic melanosis). The osseous system presents nothing striking. The long bones are straight, with no thickening of the epiphyses. Pressure on the long bones gives rise to pain.

Examination of the arterial system shows the radial artery soft, somewhat narrow, and its course straight. Pulse wave is small, and the volume poor. The pulse itself is equal and rhythmic, with rate of 110, and tension R. 95 (tonometer). Respirations are costoabdominal, rather rapid and superficial, with a rate of 26. Temperature is 101°.

The head is mesocephalic, symmetric, and presents no peculiarities. The eyes have medium pupils and react promptly to light and accommodation. Sympathetic reaction is also prompt. Movements of the eyeballs are unimpaired.

Ophthalmic examination without mydriasis reveals the fundi and optic discs very pale, arteries threadlike, veins tortuous and pale. Retina about papillas for a distance of two papilla diameters is hazy. Retinal hemorrhages cannot be found.

The conjunctiva of the eyeball and eyelids is exceedingly pale. Arterial pulsation is easily produced by pressure on the eyeball.

The tongue with the exception of a superficial glossitis shows nothing characteristic. The mucous membrane of the mouth, excepting an extreme pallor, shows nothing striking. Pharynx is extremely pale.

The carotids pulsate slightly. The external jugular shows a negative centrifugal venous pulse. Over the veins of the neck a continuous bruit is heard (Nonnensausen). The thyroid and the cervical glands of the neck are not enlarged.

The thorax is well formed, proportionate and symmetrical. Pressure on the sternum causes pain (Mosler's symptom). Inspection shows the apex beat in the fifth intercostal space within the left mammary line. Palpation of the lungs is negative. Percussion over the lungs gives a loud, deep resonant note. The border of the lungs is posteriorly four fingers' breadth below the angle of the scapula anteriorly, right lung (mamillary line) fifth intercostal space, left lung (parasternal line) third intercostal space. The margins were freely movable. On auscultation, sharpened inspiratory and prolonged expiratory murmurs were heard. Both dry and moist rales were audible over both lungs excepting in the apices, where nothing abnormal was detected.

The apex beat of the heart is not sharply circumscribed in the fifth intercostal space within the left mammary line. Palpation gives a feeble impulse. On percussion there is an apparent dilation to the right. The dullness extends to the middle of the sternum, due to a retraction of the lungs. The dullness to the left corresponds to the apex beat. In the upper boundary there is a relative dullness at the third rib, and an absolute dullness in the third intercostal space. Over the entire cardiac area and for some distance beyond, on auscultation, a loud blowing systolic murmur is heard (hemic) being loudest over the base. Besides this murmur, over the base of the heart, a continuous murmur is heard, transmitted downward from the veins of the neck. The second pulmonic sound is rather loud but not accentuated, being due to a retraction of the lungs.

Traube's space is tympanitic in all portions. The abdomen is quite prominent and distended with gas. Palpation is negative. Percussion gives a high tympanitic note. The spleen is enlarged two fingers' breadth below the free border of the ribs. The liver also extends two fingers' breadth below the free border of the ribs.

Examination of the nervous system shows the cranial nerves intact. The reflexes (biceps, triceps, forearm, patellar, ankle, etc.) are normal. No disturbance in coordination. Sensations, heat and cold, tactile and of pain are normal. Patient complains at times of tingling and numbness in finger tips and toes.

The bladder and rectum show no disturbance excepting diarrhea, which is independent of a central affection.

An examination of secretions and excretions was carried out as follows: Ewald-Boas' test-meal showed the motility of the stomach to be good. Free HCl was absent, and the expressed contents did not have any effect on litmus paper. Lactic acid was not present. Examination of the stools showed the presence of considerable mucus, many crystals of fatty acid, a few plant cells and muscle fibers. A repeated search for parasite eggs was made but they were never found. The urine obtained by means of catheter was of a light yellow color, varying in amount from 1,200-1,500 cc. A slight trace of nuclealbumin and serum-albumin was present. Sugar, acetone, diacetic acid, peptone, etc., were absent. Indican was considerably increased. Sediment showed a few form elements.

A blood examination made March 10, 1902, was as follows: Reds, 732,000 (Thoma-Zeiss); whites, 2,320 (Thoma-Zeiss-Türk modification); hemoglobin, 20% (Fleischl-Miescher modification with control); color index, 1.5. The stained specimen showed a high degree of poikilocytosis with many macrocytes and microcytes. Megaloblasts, normoblasts, and poikiloblasts were seen throughout the field. The hemoglobin of each individual blood-cell was increased. A percentage estimation of the different leukocytes was not made, as it is of little diagnostic value in pernicious anemia.

A complete discussion of the case would require too much space, therefore the essential changes only will be given:

March 15.—Edema is gradually disappearing, cough is greatly improved, and the urine contains no albumin.

March 21.—Blood examination shows: Reds, 1,592,000 (Thoma-Zeiss); hemoglobin 30% (Fleischl-Miescher); color index, .9.

March 30.—Reds, 2,236,000 (Thoma-Zeiss); whites, first count, 2,120; whites, second count, 1,980 (Thoma-Zeiss-Türk modification); hemoglobin, 50% (Fleischl-Miescher with control); color index, 1.1.

Stained specimen still showed a moderate poikilocytosis. Nucleated red cells were not present.

April 5.—Reds, 2,790,000 (Thoma-Zeiss); whites, 2,500 (Thoma-Zeiss-Türk modification); hemoglobin, 50% (Fleischl-Miescher).

Stained specimen showed a formation of rouleaux. Excepting the leukopenia and the relative increase in the lymphocytes, nothing striking was seen.

April 11.—Reds, 3,644,000; whites, first count, 2,800; whites, second count, 3,120; hemoglobin, 70% (Fleischl-Miescher).

Stained specimen had quite a normal appearance, save the extreme leukopenia. Patient was permitted to leave bed for one hour daily and attempt to walk. This was the first time in five months that the patient was able to be about.

April 20.—Reds, 3,452,000 (Thoma-Zeiss); whites, 2,420; hemoglobin, 55%.

The drop in the hemoglobin was due to the patient being out of bed each day, as will be shown in the next hemoglobin examination. Patient was not allowed to leave bed.

April 25.—Hemoglobin, 70% (Fleischl-Miescher). Patient was permitted to leave bed again and sit in the open air daily.

April 30.—Reds, 3,088,000; whites, 2,400; hemoglobin, 65%. Stained specimen had a similar appearance to the one of April 11.

Patient was again ordered to bed. Her appetite began to diminish; this had been good during the entire time since the beginning of the irrigations. Though her bowels gave more or less trouble during the entire treatment, it was never severe, but now she began to have increased discharges and quite severe cramps in the abdomen.

May 3.—Her face became suddenly edematous; there was likewise slight edema of the extremities, which disappeared the following day. Numerous red (urticaria) spots appeared over the entire body, disappearing the following day. This was a toxic erythema and the edema an "acute essential hydrops," which no doubt was due to the absorption (probably increased absorption) of some toxic agent in the alimentary canal.

May 4.—Reds, 2,800,000; whites, 2,900; hemoglobin, 55%.

This last examination was made at 12 o'clock. The patient felt considerably better than on the previous day, as the cramping pain was very much diminished, and the discharges less frequent. When I left the hospital the patient was in good spirits. Without warning death suddenly occurred under symptoms of asphyxia at 4.30 p.m., May 4.

Stained specimen showed a slighter tendency to the formation of rouleaux. Poikilocytes or nucleated reds were not present. A white blood-corpusele was seen in every fourth or fifth field ($\frac{1}{2}$ oil immersion Zeiss).

The percentage estimation of leukocytes is: Polymorphous, 53%; small mononuclear, 35%; large mononuclear, 7%; transitional cells, 2%; eosinophiles, 3%.

The therapy had consisted of daily lavage of the stomach with 1,000 to 2,000 cc. of water and high enemas of 1,000 cc. The diet consisted chiefly of milk, eggs, and milk preparations. Fowler's solution was administered from March 10 to March 30, gradually increasing to 15 drops, t.i.d., after which time it was discontinued.

The improvement during this time was as follows: The erythrocytes increased to 1,504,000; the hemoglobin 30%. Fowler's solution was discontinued from March 30 to April 5. The improvement during this time was an increase of 554,000 in the red blood-corpuseles; the hemoglobin remained stationary. From April 5 Fowler's solution was again given in increasing doses up to 25 drops until the time of death. The improvement between April 5 (the count being at that time 2,790,000 red corpuseles and 50% hemoglobin) and April 11 was quite astonishing, there being an increase of 854,000 erythrocytes and 20% hemoglobin. Between April 11 and April 20 there was a decrease of 192,000 erythrocytes and a considerable decrease of hemoglobin (15%). As before stated, this was due to the patient being up, as the hemoglobin again reached 70% April 25. The red blood-corpuseles between April 20 and April 30 decreased 334,000 and the hemoglobin 5% since April 25.

This decrease was probably due to the fact that the patient was again permitted to leave her bed every second day from April 25 to April 30, after which time she was confined to bed.

Between April 30 and May 4 there was both a decrease in the number of red corpuseles and hemoglobin, the former decreasing 288,000 and the latter 10%, when death suddenly occurred. This decrease was probably due to an increased formation and absorption of toxins as the patient a day previous (May 3) presented a toxic erythema and a sudden slight edema of the face and extremities, the edema of extremities disappearing the following day. This edema in my opinion was also due to the toxins affecting the blood-vessel walls, allowing a slight transudation of serum (acute essential hydrops) from the fact that it appeared and disappeared so rapidly. The gastrointestinal symptoms were likewise in favor of an increased absorption of toxins, as on the day previous to death vomiting and purging increased and the cramps in the abdomen were

very severe. The next day the vomiting disappeared, stools were less frequent in number, and cramping pain also disappeared.

The improvement in my case was undoubtedly due to the flushing of the gastrointestinal tract rather than to the administered arsenic.

Autopsy was performed 17 hours after death. The general appearance was that of a medium sized woman with fairly well developed muscles and subcutaneous fat. The skin and visible mucous membranes were anemic. Numerous bronze colored spots about the size of a pea were distributed over the body, mainly over the upper extremities. An examination of the cranial cavity showed that the dura and pia were of normal color and thickness and free from adhesions and hemorrhages. Convolutions and sulci were normal. Incisions into the brain substance showed it was anemic. A very small amount of clear fluid was found in the ventricles. There were no other pathologic changes found.

An incision was made from the thyroid gland to the symphysis pubis. Diaphragm was situated at the level of the sixth intercostal space. In the pelvic cavity was found 8 cc. of a clear yellowish fluid. The intestines were pale and free from adhesions.

The lungs were not completely relaxed and slight adhesions of the pleura were found about the third intercostal space on both sides. There was no fluid in the chest cavity. On incision into the lungs a slight edema was found. The lower lobes showed signs of a slight bronchitis, otherwise nothing abnormal was found. A thorough search for thrombi or emboli was made to account for the sudden death, but the result was negative.

The pericardial sac contained a small amount of clear fluid. The sac was free from adhesions. Size was approximately normal. Muscular tissue of the heart presented the signs of a slight fatty degeneration. The various orifices and valves presented nothing abnormal.

The adipose capsule of the kidneys was quite large. Both kidneys were somewhat increased in size. The fibrous capsule was removed easily and the surface was smooth. On incision into the kidneys the cortex was found to be somewhat wider than normal. The parenchyma showed signs of a fatty degeneration; the pelvis was not enlarged. The suprarenal capsules were devoid of any pathologic changes.

The spleen was considerably enlarged. On its surface were seen several small fibromas. The capsule was normal. The consistency of the spleen approached the normal. Its color was a bluish red. Trabeculas and pulp were apparently normal.

The lower border of the liver extended one finger's breadth below the free margin of the ribs. Its consistency was somewhat soft. The surface, with the exception of a few small fibromas, was smooth. The cut surface was smooth and presented a grayish, yellowish-red color (fatty degeneration).

The uterus, ovaries and tubes were normal.

The stomach was about normal in size. Upon opening it the mucous membrane was found to be smooth, thin, and almost lusterless, showing small recent mucous and submucous hemorrhages, located chiefly in the greater curvature and near the pylorus. The muscularis was atrophied. The general appearance of the duodenum was similar to that of the stomach. With the exception of a slight atrophy of the mucosa in the remaining small intestine, no pathologic changes were found. The large intestine presented its normal appearance. No pathologic changes were found in the pancreas.

Microscopic Examination.—Section of the lungs showed edema and a slight bronchitis. The specimen of the heart showed less fatty degeneration than was expected from the macroscopic appearance. The sections of the kidneys showed a decided fatty degeneration with very slight inflammatory changes in the parenchyma. The spleen specimen, with the exception of a few fibromas, as mentioned in the macroscopic examination, showed no pathologic changes. Section of the liver presented the picture of a slight fatty degeneration. The sections of the stomach showed atrophic changes in the mucosa, submucosa, muscularis and the glands, with small recent mucous and submucous hemorrhages. In the specimens of the duodenum similar atrophic changes of the mucosa, submucosa, and muscularis were found. Brunner's glands were atrophic and slightly degenerated. The various organs were examined microscopically, but only those which presented macroscopic changes have been reported.

Eichhorst²⁵ in his "Lehrbuch" mentions that Sandy reports several recoveries, and Meyer is favorably impressed with irrigation of the stomach in cases of severe anemia with gastric symptoms. Perutz²⁶ reported a case of pernicious anemia in which daily lavage and high enemas had been instituted and speedy recovery followed. Grawitz also reports favorable cases of severe anemia with gastric disturbances in which lavage of the stomach had been practised. The recovery, however, is not a permanent one, for so soon as the flushing is discontinued new toxins will form and become absorbed as

the pathologic lesion remains uninfluenced by the irrigation.

Though many recoveries and marked improvement have been reported from the use of arsenic in large doses (Suckling, Abrams, Osler, White, Warfringe, Fussell, Henry, and others), I am convinced that this medication in my case was not the essential therapeutic agent. I have seen some slight improvement from its administration but never a recovery, and it is questionable in even those cases if the improvement was due to the arsenic. Cabot²⁷ thinks that many of the improvements in the symptoms attributed to the use of arsenic are actually the result of a tendency that the disease itself shows to remissions.

Tyler and Cooper²⁸ report a case of pernicious anemia showing the good effects of the above mentioned medication. Though the hematologic picture in the foregoing case corresponded to one of primary anemia, it was nothing more than a severe secondary anemia due to the previous hemorrhage of the bowels which occurred several days before the first blood count was made. The fact that the patient was able to leave the hospital in less than one month from the date of admission would also point to an error in the diagnosis. The gastrointestinal symptoms manifested in Tyler's and Cooper's case are easily explained, being due to a chronic alcoholic gastroenteritis.

It has been shown repeatedly that the hematologic picture is not an absolute pathognomonic sign of pernicious anemia, as cases are on record showing that secondary anemias have corresponded with that of primary and also the reverse, and has often led to errors in the diagnosis. The rapid recovery in Tyler's and Cooper's case was probably due to the rest rather than to the arsenic.

I do not wish it to be inferred that I am of the same opinion as Dr. Deaver,²⁹ who regards the entire science of hematology as a "waste of time," for laboratory experience has shown differently; nor would I be interpreted as not believing in the administration of arsenic in pernicious anemia; on the contrary, it should always be given. No doubt it has its effect if the cause of the formation and absorption of the toxins in the alimentary tract be removed, but that arsenic approaches a specific in pernicious anemia is certainly untrue, and in those cases in which it acted as such there was evidently an error in the diagnosis.

Ziemssen recommended the transfusion of blood, and reports a few favorable cases, but not sufficient to warrant its continuance. The intestinal antiseptics, as recommended by Hunter, may be tried, but in my opinion deserve little consideration.

In conclusion, I thank my colleagues, Dr. Fischer for his kindness in examining the fundi, and Drs. Vogt and Hirschi in assisting and giving their valuable opinion at the autopsy and for examining the specimens microscopically.

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SPECIAL ARTICLES

A COMPARISON BETWEEN FOREIGN AND AMERICAN SURGERY.

BY

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The average physician seldom sees more than the hospitals of his own country. It is a great privilege and a rich experience to have an opportunity to visit the hospitals of four continents in succession, and to study their facilities, scope of work, and methods pursued in the treatment and care of the sick. Such an unusual opportunity presented itself to me on my recent mission to St. Petersburg and long journey to the Orient. This trip was not one purely of pleasure or recreation. It included many hardships, as the journey through Asia and Egypt was made in midsummer, when the heat was greatest and the pestiferous insects most numerous and in best fighting condition. After the adjournment of the Seventh Conference of the International Red Cross the main object of my tour was to familiarize myself with the present surgical methods in the different hospitals of the countries through which I traveled. My observations were made in France, Germany, Russia, Turkey, Syria, Palestine, Egypt, Austria, England, Sweden, and America, and have been briefly described in the pages of this journal. I found everywhere satisfactory proof that our profession is a truly international one, bound together without regard to color, religion, or politics by a strong tie of a common desire to advance science and benefit humanity. I have become more convinced than ever that this bond of union is stronger in the medical than any other of the learned professions. The desire and genuine willingness to learn and to instruct are more pronounced among medical men than any other class. I also became satisfied that modern progress in medicine and surgery has no geographic limits. The medical men throughout the entire civilized world are all engaged in doing their share toward the advancement of science, and make their contributions according to surroundings, opportunities and facilities for work. It is not difficult to accomplish great results in a well-equipped institution with adequate financial resources. I admired particularly the scientific work in some of the small laboratories in the distant Orient, where many investigations of far-reaching value have been made under the greatest difficulties. It is work of this kind that is entitled to full recognition. The progress of medicine has penetrated the most remote countries that have any claim on civilization. The dawn of the light of original thought and research is visible everywhere, and is rapidly forcing out of existence routine practice. The science of medicine is rapidly retracing its steps from whence it came. The newest and best in medicine in Asia and Africa comes from Europe, more especially from Germany. The missionary physicians have been the pioneers in disseminating modern medicine throughout the distant East, and in establishing outposts for scientific research. In many of the small laboratories of the missionary hospitals, original work is being done which would be creditable to larger and better equipped institutions. The spirit of awakening has taken a firm foothold upon the soil of Asia and the Dark Continent, and will soon

bring about changes in the care of the sick and in the prevention of disease that will be a source of gratification to those who called it into existence. The universities and hospitals of Russia would compare favorably with those of any other country. The medical profession of England enjoys the respect of the government and the public, and is exceptionally well qualified to cope most successfully with the prevention and treatment of disease. The lethargy in medical matters which prevailed in France for a considerable length of time has disappeared and has given place to an energetic and enthusiastic search for the unknown in the science of medicine. Germany and Austria have done more for the advancement of scientific medicine during the last half century than all of the other European countries combined. Germany is today the Mecca to which medical students and practitioners make pilgrimages from all parts of the world for the purpose of obtaining the material for a firm foundation upon which to build the superstructure of rational medicine. Surgery in all of these countries has attained a high degree of perfection. Some of the hospitals, more especially those supported by the different governments, are palaces for the sick, and are supplied with all conceivable means and appliances for asepsis.

It is a great privilege to serve the sick in such an institution, as more than one-half of the battle with disease and accidents is fought by the well trained nurses and the staff of assistants with long service and large experience. It is less favored hospitals that the surgeon assumes greater responsibilities, and it is the results he records that are within reach of the general practitioner and which represent the achievements of the mass of the profession. All of the European physicians are well-educated men, as the entrance to their medical education is well guarded, for medical colleges are gradually recognizing the importance of an adequate preliminary education as an essential requirement for the successful study and training of the medical student, but the change from a medium to the highest standard is slower than the present conditions demand. On the other hand, I believe we can claim, without fear of contradiction, that our students apply themselves more closely to their studies than those of any of the European schools, and that more of the mass of our profession keep pace with medical progress after graduation than the physicians abroad. The keen competition and the inborn activeness and desire to succeed that characterize the average American physician make him a diligent student and a tireless practitioner. There is no country in the world where so many medical journals are read as in America, and where postgraduate education is more keenly appreciated. Our active, well-attended, numerous medical societies, local and national, keep up the scientific interest of the rank and file of our profession, and are the most important agents in stimulating and furthering postgraduate education.

The vast clinical material of the large European hospitals is utilized to greater advantage than the clinical material here. Autopsies are more frequently made and with greater thoroughness. All hospitals of any size issue an annual report in which will be found a concise retrospect of the medical and surgical work for the year. These publications are valuable literary contributions and are eagerly looked for and liberally quoted by authors. Politics and church influence do not cripple hospital management as much in Europe as in America. The university professors are sure of their hospital appointment until their retiring age reminds them of the limitation of their career as teachers. The esteem and respect for medical men abroad is much keener than here and they occupy a higher position in the social world and political circles. From a practical standpoint the American doctor compares well with his colleagues abroad. His natural aptitude, his education and training harmonize in making him self-reliant and in making the best use of his knowledge at the bedside. The American doctor is impartial in the selection of his reading material. He has no national prejudices. He absorbs knowledge from all available sources. All new innovations and discoveries are given a prompt and fair trial. Many of our physicians and surgeons make frequent visits abroad and return with new ideas which enlarge their knowledge of disease and open new fields for their practice and surgical activity. It is safe to make the

statement that the gigantic progress in American medicine and surgery which has been made during the last quarter of a century is due largely to what our students and practitioners have borrowed in Europe and the seed thus introduced has found here a fertile soil and has yielded fruit a hundredfold. From a medical and surgical standpoint no country is independent, and we have reached a stage in the growth of medical science which brings us up nearly to the same level with any of the foreign countries. We have every reason to look with a justifiable pride on the part America has taken in the rapid development of modern surgery. The teachings of Lister were eagerly grasped and promptly applied in practice. Some of the countries on the continent were slow in adopting the new views, America never hesitated. From what I have seen on three continents I can say without hesitation that the aseptic precautions which are in use by our surgeons are applied as thoroughly here as anywhere else. The average American surgeon is resourceful. He may not have the same broad preliminary and professional education as his European colleagues, but he is quick and determined in the selection and use of appropriate therapeutic resources. The American surgeon is eminently practical. He is peculiarly well fitted for emergency work. He performs the most difficult task with the simplest means and appliances. American ingenuity, recognized the world over, is well represented in the medical profession. A visit to Europe, Asia, and Africa, with a view of ascertaining the present status of surgery in different countries, awakens a new interest in the science and art of medicine as they exist in our own country. On my return from Europe I remained two days in New York for the purpose of visiting a few of the most prominent hospitals to obtain the necessary material upon which I could base a practical comparison between foreign and American surgery.

Midsummer is not a good time to see surgical New York, as most of the prominent surgeons are enjoying their much-needed rest and recreation at that time. I was fortunate to find a few of the men I was anxious to see at home and at work.

New York has four medical schools, all of them in excellent repute. Among these the College of Physicians and Surgeons is the one that is entitled to first place, by virtue of age and the elaborate facilities it can extend to its students in its theoretic and practical courses. Most of the clinical teaching of this college is conducted in the

ROOSEVELT HOSPITAL.

The Roosevelt is one of the best, if not the best, private hospitals in New York. The name of this institution commemorates the philanthropy of a grand-uncle of our present Chief Executive, who donated \$1,400,000 for the erection and maintenance of the hospital. The pride of this hospital is the W. J. Syms operating-room, built at an expense of \$250,000, the gift of the man whose name it bears, and which was opened for clinical teaching in 1892. It is the most costly and probably the most perfect operating theater in the world. The construction of the interior of the room, as well as everything within it, are such as to adapt them for perfect aseptic work. The teacher of clinical surgery who visits this part of the hospital, and who has been less fortunate in his surroundings, is perfectly amazed at the conveniences which are at the disposal of his more favored colleagues here. In the amphitheater the large college clinics are held. Professors Weir and Bull give each one clinic a week. Drs. Brewer and Blake give each three clinics to small classes of 20 every week. The students of this college have every opportunity to acquire the necessary surgical skill that a large material and effective teaching can offer. In a small side room, equally well equipped, the more serious operations, and operations upon private patients, are performed. Another room is devoted to septic cases, and in it will be found every possible convenience for antiseptics. The McLean operating-room is another very luxurious part of the hospital, and is used exclusively for gynecologic operations. The students attend this clinic in small sections. Two anesthesia rooms are within easy reach of the main operating-room. The hospital has 250 beds. Two rooms, with two beds each, near the main operating theater, are reserved for patients who

have undergone a serious operation, and there they remain until they recover from its immediate effects, when they are assigned to the wards where they belong. The disinfection-room and two rooms for the preparation of the dressing material are all that money and skill could make them. The hospital is well supplied with trained female nurses. The training-school connected with it has 60 pupils. The nurses are not overworked, as is the case in many other hospitals. The wards, with 36 beds, are attended to by five nurses. The course of study and training for the nurses is three years. During this time they are given an opportunity to perfect themselves in the nursing of a great variety of patients. Eight internes are employed for the surgical side alone, perhaps more internes to the number of patients than in most hospitals. The outdoor department is very large, and two automobile ambulances are seldom at rest. Ether is the anesthetic in general use.

Weir's Method of Hand Disinfection.—This method is virtually the one relied upon by all of the surgeons connected with the Roosevelt Hospital, and might well be termed the Roosevelt method. It is as follows:

Thorough scrubbing of hands with flowing, warm, sterile water and potash soap. About a tablespoonful of small crystals of sodium carbonate are then placed in the palm of one hand, to which is added about one-third as much of chlorid of lime. The hands are thoroughly rubbed with this mixture for some length of time, when they are rubbed dry with a sterile towel and are then rinsed in sterile water. Professor Weir places much stress on the penetrating power of chlorin gas, which reaches microbes in the appendages of the skin and in the layers of the epidermis inaccessible to many of the antiseptic solutions.

The finger-nails receive proper attention in the mechanical treatment of the hands. After the chlorid disinfection sublimate solution is used in the usual way as an additional safeguard. Alcohol is occasionally used, but is not considered essential in completing the hand disinfection.

Professor Weir has proved the reliability of this method of hand disinfection by numerous bacteriologic examinations, which invariably demonstrated the absolute sterility of the surface thus treated. Weir only makes use of rubber gloves in aseptic cases when he has to operate upon joints and the abdomen. Dr. Brewer uses gloves in all of his operations. Catgut, silk, silkwormgut, and horsehair are used for suture material. For buried sutures catgut is usually employed.

Roosevelt Method of Catgut Sterilization.—Immerse in juniper oil for 4 days; immerse in sulfuric ether for 14 days; immerse in benzine for 14 days. Boil in alcohol for half an hour to an hour, according to the size of the catgut. Keep in alcohol ready for use.

The iron-stained silkwormgut is a favorite material for superficial sutures.

The anesthetic is administered in the anesthesia-room by one of the internes. Two internes and two trained nurses assist the operator. The patient is prepared the evening before the operation and the final disinfection is made after the patient is fully under the influence of the anesthetic.

Professor Weir has had a long and varied surgical experience. He entered the regular army in 1861, soon after his graduation, and did most creditable service during the Civil war. He is well remembered by his army colleagues. During his recent all-around-the-world trip he visited the Philippine Islands. Here he found many of his old army friends, who did all in their power to make that part of his journey pleasant and profitable. Weir's name is intimately associated with the surgical literature of America. He has been an earnest student, a successful surgeon, an impressive teacher, and a prolific writer. He finds it difficult to cut loose from his professional work, as this brings to him more satisfaction than idle recreation. During my stay in New York he came to the city for a few days from his vacation to perform a number of operations on private patients.

The patient operated upon the day of my visit to the hospital was a very interesting one.

The man was about 50, and the subject of a somewhat obscure affection involving the floor of the mouth and the submental and submaxillary regions. A number of weeks ago while taking outdoor exercise in the country he suddenly experienced a sensation near the base and lower surface of the tongue as though some sharp foreign substance had entered the tissues. A violent inflammation followed, which involved the submental and submaxillary regions. This in-

inflammation terminated in the formation of an acute abscess. The swelling subsided only in part after the abscess was incised and a fistulous opening remained. A hard mass remained and resisted all treatment. A positive differential diagnosis between an inflammatory affection and malignant disease could not be made. Under ether anesthesia a horseshoe-shaped incision was made along the lower border of the inferior maxilla. The flap was reflected as far as the hyoid bone. At this stage of the operation a piece of the indurated tissue was excised and the pathologist of the hospital, who was present, made a frozen section and examined it under the microscope. This examination demonstrated the inflammatory nature of the affection. By a careful and somewhat difficult dissection all of the infected glands and indurated tissues were thoroughly excised. A large rent in the mucous membrane of the floor of the mouth was made. A Penrose drain was inserted into one angle of the wound and the external incision closed with fine iron-dyed silk wormgut sutures. The oval wound was tamponed with a strip of iodoform gauze saturated with compound tincture of benzoin. An external absorbent dressing finished the operation.

The Penrose drain is a most excellent one for capillary drainage. It consists of a tube of very fine soft rubber loosely filled with absorbent gauze.

Weir has made a very fine collection of appendicitis specimens. The specimens are fastened on one side of a narrow strip of white cardboard, and on the other side is a drawing and the legend. The specimens are preserved in cylindrical glasses containing a formalin solution. It is hoped that this valuable collection of pathologic specimens will be utilized for the benefit of the general profession in illustrating the pathologic condition of this as yet somewhat obscure disease.

Dr. Brewer is one of the attending surgeons to Roosevelt Hospital, and also clinical instructor in the College of Physicians and Surgeons. He is a young surgeon full of promise, in fact, as Professor Weir informed me, "one of the coming men." During Weir's absence he does most of the operative work. It was a source of pleasure and profit to me to witness a few of his operations.

CASE I.—*Left inguinal hernia, radical, by Bassini's method.* Left inguinal hernia of many years' standing, for which truss was worn for a long time. Patient was a man of 30, otherwise in excellent health. Ether anesthesia was employed. Final disinfection was done before operation. Hand disinfection by Weir's method. Incision was made over entire length of inguinal canal. Partial isolation of sac, when it was grasped with two dissecting forceps, between which it was opened with scissors. Omental part of hernial contents adherent to the sac. The omentum was separated, tied with catgut, and amputated at a safe distance below the ligature. After complete isolation of the sac it was transfixed at the neck with needle covered with catgut and tied and cut off below the ligatures. The cord and accompanying vessels were now isolated and lifted out of the canal with a folded strip of iodoform gauze. The inguinal canal was closed with chromicized catgut sutures, the material always employed in performing this part of Bassini's typical operation. Next the fascia of the external oblique muscle was sutured over the cord with a continuous suture of ordinary catgut sterilized by the Roosevelt method. Iron-dyed silk wormgut interrupted suture was employed for the skin. The dressing was sterile loose gauze and absorbent sterile cotton held in place by strips of adhesive plaster and an abdominal bandage with two perineal straps. It is routine practice here to drain such wounds with a folded piece of sterile gutta serena tissue. The wound is frequently doused with warm physiologic solution of sodium chlorid.

CASE II.—*Fistula following operation for acute appendicitis; laparotomy; suturing of cecal perforation.* The patient, a young man, was operated upon by Dr. Brewer two months ago for acute appendicitis. The wound healed by primary intention, but a small fistula remained which failed to heal. There was a very scanty seropurulent discharge at times. It was supposed that this fistula was caused and was maintained by an infected silk ligature. The fistulous opening was enlarged by incising the scar tissue in both directions. The fistula led into the abdominal cavity and the incision had to be enlarged. The great omentum and cecum came into view and in following the fistulous tract a minute perforation in the cecum was found where the appendix was ligated at the first operation. The perforation was thoroughly disinfected with hydrogen dioxide and was closed with a continuous Lembert suture of very fine catgut. The external incision was sutured with two tiers of buried catgut sutures and superficial iron-dyed silk wormgut sutures. A gutta serena strip drain was placed in the lower angle of the wound. Dry hygroscopic sterile dressing was applied.

NEW YORK HOSPITAL.

This is probably the most elaborate and best equipped private hospital in New York. It is well endowed and it is said that it takes more money to take care of a patient in this

than in any other hospital. The number of patients corresponds with that of the Roosevelt. A new wing with 50 beds is for private patients and has a separate staff of internes and nursing force. The rooms are luxuriously furnished. Some of them have a bath-room and closet conveniences. The ward patients pay \$2 a day, while the private rooms command from \$30 to \$75 per week. A small but beautiful separate operating-room is connected with this department of the hospital. It is in this room that Dr. Charles McBurney performs most of his operations. The training-school of this hospital is attended by 80 pupils, who are required to take a course of three years before they are permitted to apply for final examination. The lectures are given by members of the attending staff. The general operating-room seats 75 students. No fee is charged for clinical instruction. Students from all of the four medical schools take advantage of the excellent clinical teaching given here by the large staff of attending physicians and surgeons. The students of the Cornell Medical School take private courses, for which they pay a small fee. The surgical staff includes the well-known names of L. A. Stimson, Francis W. Murray, A. B. Johnson, Frank Hartley, and P. R. Bolton. These men keep up the high standard of clinical surgery of this, one of the best known of the New York hospitals. Ether is the anesthetic of choice. The catgut is sterilized by Saul's method. Sulfate of ammonium catgut after a fair trial has been abandoned, as it was found too brittle in tying the ligatures and sutures. Silk and iron-dyed silk wormgut are used for superficial sutures. Hand disinfection with chlorid of lime is in general use.

Rubber gloves and caps are worn constantly by operators and assistants. Two internes and two trained female nurses assist the operator. A third interne administers the anesthetic. I was fortunate enough to find Dr. Alexander B. Johnson at work. He is professor of surgery in the Cornell Medical College, and one of the most careful and skilful operators in New York. On the day of my visit he had to deal with two very rare cases.

CASE I.—*Ulcer of stomach; laparotomy.* The patient was a young man, who was admitted into the hospital for hemorrhage from the stomach. The general condition of the patient was fair. No special distress after eating and no vomiting, excepting during the bleeding attacks. On two occasions he vomited a large quantity of blood, and decomposed blood passed per rectum. A median incision was made. The stomach was unusual in size and appearance. The pylorus was incised transversely. Near the pylorus and the small curvature of the stomach two bleeding points were found in the course of a vein of considerable size. Visceral incision was enlarged and mucous membrane of the stomach freely everted for inspection. The remaining part of the interior surface of the stomach was inspected through a bivalve rectal speculum and with the aid of reflected light, but no additional lesions could be discovered. Hemorrhage from the two bleeding points was arrested with two purse-string sutures of catgut.

Visceral incision closed with continuous catgut suture for mucosa and mattress catgut Lembert sutures. In closing the external incision, catgut was used for the peritoneum, muscular layer, fascia, and iron-dyed silk wormgut and fine silk for the skin. Gutta serena strip drainage was employed, the drain to be removed in 48 hours. A small, dry dressing for the external wound, held in place with strips of adhesive plaster, and abdominal bandage. Although no distinct ulceration could be discovered, there must have been minute erosions that caused the venous hemorrhage, and the treatment resorted to undoubtedly succeeded in preventing recurring attacks.

CASE II.—*Late fever complicating appendicitis; operation, exploratory laparotomy.* A young man was operated upon by Dr. Johnson four weeks ago for gangrenous appendicitis. Early operation. Appendix was removed, and the wound healed by primary intention. No untoward symptoms until a few days ago a high temperature developed which ranged between 104° to 105° F. Other general symptoms confirmed the suspicion of the existence of a retrocolic, hepatic, or subphrenic abscess. Liver was enlarged. No palpable swelling in the ileocecal region. Ether anesthesia was employed. Incision was made four inches in length below and parallel with the right costal arch. Liver was found enlarged, but no indications of the existence of an abscess within, above, or beneath it. The incision was enlarged sufficiently for the insertion of the hand which was employed in making the necessary intra-abdominal palpation for the detection of a suppurating focus, but nothing was found that could explain the remote post-operative fever. The abdominal incision was closed with buried and superficial sutures in the usual manner. The operator came to the conclusion that in all probability the remote septic complication was the result of a thrombo-phle-

bitis, which had its origin at or near the primary seat of infection.

BELLEVUE HOSPITAL.

This is the wellknown, large, general charity hospital of New York. It is an old institution, but improvements have been made from time to time so that it serves its present purpose well. Its present capacity is 1,000 beds. The emergency department is the largest of any hospital in New York. Four ambulances are in use all the time, and 18 horses are always in readiness for this service. The automobile ambulances have been abandoned, as not infrequently something would go wrong when speed was most required. The attending staff is made up largely of members of the faculties of the four medical colleges. It is the great center of clinical teaching for students and practitioners. Surgical clinics are given daily in the two large operating-rooms. The training-school for female nurses is attended by 80 pupils, and the school for male nurses by 90. The course of training is three years. Forty-five internes assist the attending staff in taking care of the vast clinical material. It is estimated that 24,000 patients enter this hospital every year. The morgue is one of the finest in the country. The mortality in this hospital is for obvious reasons very high, as many accident cases are brought to its doors with patients in a dying condition. The number of postmortem examinations made annually sums up into many thousands. The morgue is a great school for the study of gross pathology. The surgical practice in this hospital is not uniform, as many of the operators pursue methods of their own. Dr. Gill Wylie is one of the attending gynecologists. His aseptic precautions are very simple, and yet efficient. He scrubs his hands with warm water and ethereal solution of soap, cleanses the finger-nails thoroughly, and then resorts to chemical disinfection by immersion for a few minutes in a solution of bichlorid 1 : 8,000 to which three parts of tartaric acid are added. He performs his operations in a small room connected with his ward. On the day of my visit he was absent from the city, and his patients were in charge of his assistant, Dr. Lee. An Alexander operation was performed for retroversion of the uterus with skill that would have done credit to his clinical teacher. The delirium tremens ward and detention wing are well worth a prolonged visit, as they contain an abundance of the most valuable clinical material, interesting and profitable alike to the alienist and general practitioner.

This completes a description of my surgical observations during the last four months, and I return to my private practice and college work fully satisfied that from a surgical standpoint America compares well with any of the foreign countries I had an opportunity to visit. In conclusion, I desire to thank all of my colleagues, near and far, for the many courtesies extended to me on my long and highly-interesting and profitable journey.

NEW YORK, August 29.

The Pathological Society of Philadelphia will hold a symposium on snake venom at the meeting on January 22. The speakers will be S. Weir Mitchell, Flexner, Naguchi, Kin-youn, and MacFarland. Dr. Welch, of Johns Hopkins, will open the discussion. The medical profession is invited to be present.

Contemplated Improvements to St. Agnes' Hospital, Philadelphia.—It is announced that improvements costing about \$200,000 will be made to this hospital in the near future. The proposed improvements will consist of the erection of several new buildings, among which will be a new wing on the south side of the central building similar to that on the north side. To this extension will be added a separate stone structure for patients who must be isolated, and another building for a children's ward. It is also proposed to erect a nurses' home and an operating-room.

Mortality in Boston.—According to the vital statistics published by the Boston Health Department for the year ended December 31, 1902, an encouraging decrease of the mortality in all contagious diseases with the exception of smallpox is noted. The total number of deaths was 10,972, as against 11,300 for 1901, and the deathrate per 1,000 inhabitants was 18.70, as against 19.70 for the previous year. The number of deaths of children under 5 years of age was 3,375, as compared with 3,469 in 1901, the percentage to total mortality being 30.76 last year as against 30.69 the year before. The deathrate for 1902 was the lowest since 1865, the highest being 30.43, in 1872, when the city was scourged with smallpox.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

[January 10, 1903. [Vol. XL, No. 2.]

1. Tuberculous Peritonitis in Early Life: With Special Reference to Its Treatment by Laparotomy. THOMAS MORGAN ROTCH.
2. A Case of Progressive Idiopathic Atrophy of the Skin. A. RAVOGLI.
3. The Relation of Lupus Erythematosus to Tuberculosis. HENRY G. ANTHONY.
4. The Etiology of Acute Articular Rheumatism. GEORGE W. WEBSTER.
5. Etiology and Prophylaxis of the Cardiac Manifestations of Articular Rheumatism. JOSEPH M. PATTON.
6. Static Electricity in Treatment of Morphinism. A. J. PRESSEY.
7. Peripheral Neuritis as a Complication of Whoopingcough. AUGUSTUS A. ESHNER.
8. A Note on the Chemical Diagnosis of Hypernephromas (Suprarenal Tumors) of the Kidney. ALFRED C. CROFTAN.
9. A Study of Sir James Paget in his Writings. HELEN C. PUTNAM.

1.—See *American Medicine*, Vol. III, No. 24, p. 990.

2.—**Progressive Idiopathic Atrophy of the Skin.**—Ravogli reports the clinical history and microscopic findings in the case in connection with a study of the literature of the subject. In this case the atrophy resulted from a syphilitic gumma at the junction of the pons and medulla pressing on the origin of the seventh and eighth nerves just at the point which is the center of the vasomotor nerves. The process was of a chronic inflammatory nature of trophoneurotic origin, causing a sclerotic condition. The connective tissue fascicles were hypertrophied, reminding one of keloid. The elastic fibers were much diminished, and the whole of the corium seemed to be made up by abundant enlarged collagenous fibers. In some places the papillas had disappeared; in others they were enlarged. The nervous ramifications were compressed. Disturbance of the trophic nerves causes hyperemia and stasis. The anomalous hypernutrition causes hypertrophy and the collagenous condition, and pressure from this atrophy of the elastic fibers, nerveterminals, glands, hair follicles, etc. [H.M.]

3.—**Lupus Erythematosus and Tuberculosis.**—Anthony discusses the opinion of other authors as to the etiology of skin affection, and concludes that discoid lupus erythematosus is a granuloma which has no relation whatever to tuberculosis, but which may be accompanied by a general eruption; that tuberculosis may produce symptomatic lupus erythematosus, usually with disseminate, atypical plaques; that what may be shown by statistics regarding the relation of lupus erythematosus to tuberculosis depends on what is understood as evidence of tuberculosis, and also what is included in lupus erythematosus. [H.M.]

4, 5.—See *American Medicine*, Vol. III, No. 25, p. 1037.

6, 7.—See *American Medicine*, Vol. III, No. 25, p. 1057.

8.—See *American Medicine*, Vol. III, No. 25, p. 1063.

Boston Medical and Surgical Journal.

January 8, 1903. [Vol. CXLVIII, No. 2.]

1. The Malignancy of Joint Tuberculosis. Illustrated by a Series of 47 Cases. CHARLES F. PAINTER
2. The Importance of Increased Hospital Accommodations for the Treatment of Measles. JOHN H. MCCOLLOM.
3. An Experimental and Practical Demonstration of the Value of Downes' Electrothermic Angiotribe. JOHN W. KEEFE.
4. Plague Serum in Three Cases. W. J. CALVERT
5. The General Treatment of Tuberculous Bone and Joint Diseases. JOEL E. GOLDTHWAIT.

1.—**The Malignancy of Joint Tuberculosis.**—After treating 139 cases of Pott's disease, 180 of hip disease, and a lesser number in the smaller joints in the orthopedic department of the Carney Hospital, Painter's conclusions are: Tuberculous disease tends to recur after apparent cure in a considerable proportion of cases. This recurrence is usually a local one. Metastases are not common. Trauma is frequently associated with the recurrence. Indirect trauma is probably the exciting cause of the recurrences, especially where partial ankylosis or deformity exists. Patients who have suffered from bone and joint tuberculosis should be cautioned that they are not well when symptoms have ceased and that reasonable care must be exercised to avoid recrudescences. Deformity and shortening should be corrected so far and as accurately as possible to lessen the chance of recrudescence. Mechanical treatment, especially fixation, should be used in the acute conditions in childhood.

Exploratory interference, where discretion is used, with a view to removal of isolated foci, is *advisable* in many cases in children, and is to be *urged* in the majority of the recrudescences, if seen early. Recognition of the fact that patients with hip disease, Pott's disease and tumor albus have tuberculosis just as much as if they had phthisis, and should be treated accordingly, must be insisted upon. The number of recurring cases was 47 and the location of the disease as follows: Pott's disease, 16; hip disease, 17; knee, 10; ilium, 1; ankle, 2; shoulder, 1. Twenty-nine of the patients were males, 18 females; abscess occurred in 33 cases. Average age at time of exacerbation, 28; average duration of quiescence, 12½ years. [A.B.C.]

2.—Hospital Accommodations for Measles.—McCullom calls attention to the need of hospital accommodation, especially for adults in boarding houses, believing that many lives might be saved and much suffering prevented. Early diagnosis by Koplik's sign and prompt isolation is the only way in which the disease can be diminished. In hospitals, 2,000 cubic feet should be allowed for each patient ill with the measles, and patients should be carefully kept in separate pavilions from those with scarlet fever. Those suffering from both diphtheria and measles should be specially isolated. He gives statistics of the relative prevalence of measles and scarlet fever in the army and navy, and of the mortality from the same in large cities, showing that measles is much the more fatal. [H.M.]

3.—The Value of Downes' Electrothermic Angiotribe.—Keefe experimented with this instrument on four dogs, doing in each case a resection of the intestine. In one instance he simply clamped the intestine in two places and the intervening mesentery allowing a current of 60 amperes to flow for 50 seconds. The four-inch piece of intervening intestine was resected, the now cut ends being sealed by the clamping and cautery action, a lateral anastomosis with the Murphy button was done. The dog died and necropsy showed the ends had sloughed, extravasation setting up a peritonitis. The same experiment was performed on another dog, except an end-to-end anastomosis with the Murphy button was done. The result was peritonitis and death. In two other instances end-to-end anastomosis by sutures was done, leaving the gut ends sealed as before. But in each case the ends sloughed into the lumen of the bowel and the dog made a good recovery. The author reports the use of the instrument in eleven celiotomies for various gynecologic troubles and no unfavorable results whatever followed. Its advantages are: Rapidity of operation. Asepsis and cleanliness during the operation; no soiling with blood, pus or feces, as one may meet with in the removal of a pus tube, appendix or portion of intestine by other methods. Hemostasis without the aid of a ligature. No secondary hemorrhage from the slipping of ligatures, or the subsequent infection of the same. Less pain subsequent to operation, as the tissues are not puckered and constricted by ligatures. The manner of using the instruments is very simple, and one should try this method before passing judgment thereon. [A.B.C.]

4.—Plague Serum.—Calvert reports one case in which Yersin's serum, and two in which Kitasato's serum was used. One of the latter recovered, and he believes the serum was of value, and if larger quantities had been used in the other cases, more favorable results might have been obtained. [H.M.]

5.—The General Treatment of Tuberculous Bone and Joint Disease.—Goldthwait says during the past few years there has been a growing tendency in the profession to recognize that while surgical tuberculosis is in the beginning a local process, it is distinctly a debilitating disease which may easily result in its developing elsewhere, and that in the treatment every effort should be made to improve the patient's nutrition and increase the resisting power. Out-of-door life should be insisted upon almost as much as with pulmonary tuberculosis. Forced diet is needed and the best possible hygiene both at home and when at work should be had. These features are not for a few months, but should be observed by the patient during the remainder of his life. [A.B.C.]

Medical Record.

January 10, 1903. [Vol. 63, No. 2.]

1. A Comparative Study of the Routine Treatment of Certain Diseases in Four of the Large New York Hospitals. HENRY P. LOOMIS.

2. Extrauterine Pregnancy. H. J. BOLDT.
3. Adhesive Plaster Strapping for Sprains: the Indications for Its Use. FINLEY R. COOK.
4. Inguino-Superficial Hernia (Kuester). ALEXIS V. MOSCHCOWITZ.
5. Remarks on Bacteriology and Serum Treatment of Puerperal Septicemia, with an Illustrative Case. CHARLES S. WHITE.

1.—Routine Treatment in New York Hospitals.—Loomis gives a synopsis of the treatment of typhoid fever, pneumonia, articular rheumatism, and pleurisy with effusion, showing a fairly unchangeable method in each institution, the result of many years' experience. The details of treatment in the various hospitals differ distinctly, however results compare favorably. The typhoid mortality is only 10%. In treatment opinion differs only in four particulars: whether the diet shall be exclusively milk or not; when and how it shall be modified at the end of the disease; what temperature indicates the giving of the Braudt bath; and whether it shall be given in every case. In acute articular rheumatism the author believes too early change from a milk diet and too early getting up are the most important causes of relapse. [H.M.]

2.—Extrauterine Pregnancy.—Boldt, after seeing 258 cases in his own practice and consultation since November, 1879, gives the causes of tubal gestation as contortion of the tube; the presence of small neoplasms or mucous polypi within the tube, or neoplasms in the wall of the tube; pathologic changes in the fecundated ovum may also prevent it from migrating into the uterine cavity. Probably the most frequent cause is inflammatory conditions of the tube which prevent tubal peristalsis. He classifies its various forms according to the seat of the conception product. The placenta forms at the site where the ovum is imbedded, the maternal bloodvessels coming from those of the tube. The changes which take place in the wall of the tube consist in an hypertrophy of the muscular structure and an increase of connective tissue, with a thinning of the wall near the site of the ovum caused by its pressure, and the consequent atrophy of the muscle. Usually the death of the embryo within the tube takes place during the first two months after the faulty conception. Yet a few instances are on record in which the development went on to, or nearly to, full term, and a living child was delivered by means of abdominal section. The most frequent termination of tubal gestation is tubal abortion and not, as is believed by many physicians, a tubal rupture. Were the latter the case, the deathrate in tubal gestation would be greatly increased. In tubal abortion and *gradual* tubal rupture the symptoms are very similar, and the treatment may be similar. But usually rupture is diagnosed by the suddenness of the attack, and the excruciating pain followed by more or less pronounced syncope. It is very difficult at times to make a differential diagnosis between subacute pyosalpinx, especially of gonorrhoeal origin, and tubal pregnancy, but inasmuch as either condition requires surgical intervention to bring about a well being of the patient, he does not see the necessity of making a preliminary vaginal section or puncture. Boldt discusses two methods of treatment, conservative and surgical. If tubal abortion is in progress, and it is evident that the blood has clotted, the conservative treatment is permissible but the patient must be kept in absolute rest and under constant surveillance, and if the tumor does not increase in size and becomes firmer in texture, the treatment may be continued to ultimate recovery, which usually occurs in from four to six weeks. But the moment there is found to be an increase in size of the tumor or there is a sudden attack of pain, operation is necessary. If the history and symptoms show that the patient has had a complete tubal abortion, objectively determined by the absence of a thickened fallopian tube, such as we would find were the embryo still within the tube, and if she has recovered from the shock thereof, a similar conservative course is permissible. A hematocoele will then form, readily recognized by the examining finger, and its increasing firmness and diminution in size would indicate that its absorption is progressing satisfactorily. He has observed 23 cases in this condition who went on to complete recovery. But when surgical intervention is necessary, as it is in a large proportion of cases, Boldt advises abdominal rather than vaginal section. [W.K.]

3.—Adhesive Plaster Strapping for Sprains.—Cook says that Virgil P. Gibney, who contributed an article in 1893

and again in 1895 on this subject, was the first to bring it prominently before the profession. Gibney, however, asserts that Edward Cotterell, of London, was the first to use adhesive plaster for this purpose. Cook asserts that strapping has been found of value in a great variety of articular and periarticular affections. It is indicated when we have relaxation of tissues, following acute or subacute inflammatory disturbance, of a rheumatic, specific, gonorrhoeal, tuberculous, or traumatic character. A relaxation of veins leads to a passive venous stasis, with exudation into joints, bursas, tendon sheaths, and neighboring cellular tissue. There is swelling, tenderness, pain, and impairment of joint function. There may be redness and increased local heat, and in chronic affections a cellular hyperplasia, leading to a connective tissue thickening of the normal structures within and without the joints, and the formation of adhesions. Adhesive plaster strapping meets in a measure all these conditions. It affords support, protection, induces counter irritation, fomentation, supports relaxed tissues and bloodvessels, and is an excellent form of massage. [A.B.C.]

4.—Inguino-superficial Hernia.—Moschowitz reports the case on account of the rarity of the condition. The patient was a man of 28. Since he could remember the left testicle had never occupied its normal place in the scrotum, but beginning with adolescence he had noticed a small ovoid tumor in the left inguinal region, which he properly regarded as the missing testicle. At about 20 the testicle began gradually to descend, but never passed into the scrotum. The effort at gradual descent caused pain which was only relieved by a truss applied, contrary to directions, below the testicle. The truss was worn until the present attack, which was precipitated by an attempt to walk upstairs. Pain was great. Operation showed that the testicle and hernial contents had passed up at an angle between the overlying structures and the aponeurosis of the external oblique. The author has been able to find but 16 other cases in the literature, including the 14 collected by Goebel. [A.B.C.]

5.—Serum Treatment of Puerperal Septicemia.—White reports a case of recovery in which other treatment failed. He calls especial attention to the diminished pulse-rate following serum injection. Fall in temperature and improvement in mental symptoms were also attributable to it. As we are unable to differentiate the various forms of streptococcic intoxication, we are justified in using serum in all sepsis due to this organism. Alarming symptoms following its use rarely occur. [H.M.]

New York Medical Journal.

January 3, 1903. [VOL. LXXVII, No. 1.]

1. The "Lorenz Hip Redresseur" and "Lorenz Spica." CHARLES H. JAEGER.
2. A Case of Ovarian Fibroma. H. A. ROYSTER.
3. The Present Status of Treatment of Hypertrophy of the Prostate. N. F. DANDRIDGE.
4. The Diagnostic Value of Abdominal Rigidity. JOSEPH A. BLAKE.
5. Morphine Habituation and its Treatment by Hyoscin Hydrobromid. S. ORMOND GOLDAN.
6. Bronchial Tuberculosis. ALBERT ABRAMS.
7. The Successful Treatment of Pulmonary Tuberculosis, Mechanical and Medicinal. DAVID WARK.
8. The Physician and the Pharmacopela. M. I. WILBERT.

1.—The "Lorenz hip depressor" and "Lorenz spica" are described by Jaeger. The depressor is a simple apparatus to assist in the application of fixation bandages to the hip-joint itself or to the entire lower extremity. With it faulty positions and contractions may be corrected and then held in the corrected position firmly and evenly while the bandage is being applied. It may be fastened to any sufficiently projecting table top. Its three main parts are: (a) The hip rest; (b) foot and knee rests for the sound leg, which can be fastened to either side of (c) the extension foot rest for the diseased leg. Traction with this apparatus is stronger than can be applied by hand, and is kept up evenly until the end of the dressing. The lower extremity can be put up in the plaster bandage in the position of (relative) abduction, without obliging the patient later to walk with the limb held strongly out from the body. This is accomplished in that the traction on the diseased leg and the simultaneous pushing up of the healthy leg cause tilting of the pelvis. The Lorenz spica extends from above the crest of the ilium to the knee. The salient feature of this plaster spica is the painstaking modeling out of crests and

spines of the ilia into the spica, thus insuring absolute fixation of femur and pelvis. [C.A.O.]

2.—Ovarian Fibroma.—Royster reports a case in a woman of 55 in which the diagnosis of fibroma of the uterus had been made. The menopause came at the age of 50, but three years later the flow recurred, lasting 10 days or more. At the time of operation it was not so excessive, and appeared only at irregular intervals. She complained of pain in the left side and around the umbilicus, and of a burning sensation in the chest. Urination was difficult and frequent, but her general condition was good. Examination revealed a very hard, smooth, somewhat movable tumor about the size of a large orange in the posterior culdesac. At the time of operation a small quantity of ascitic fluid was present; the uterus was normal. There were no adhesions, and the tumor was easily removed. A complete pathologic report is given. [C.A.O.]

3.—See *American Medicine*, Vol. IV, No. 21, p. 804.

4.—Abdominal rigidity, according to Blake, is a constant symptom in all irritations and inflammations of the peritoneum and is therefore a valuable sign in the diagnosis of the presence of foreign materials in the peritoneal cavity even before inflammation has ensued. It is a fairly accurate index to the severity and extent of a peritoneal implication, and is, therefore, valuable in observing the course and estimating the severity of a peritonitis. Three cases are reported to show that rigidity in abdominal hemorrhage is well marked and that it appears coincidentally with the escape of blood into the peritoneal cavity. Two cases are reported in which rigidity occurred immediately after rupture of the intestine and another after the escape of urine into the peritoneal cavity. Rigidity is always present in peritonitis, except in the chronic cases, such as tuberculous peritonitis and cases of advanced general peritonitis in which it may be absent or not accentuated. Rigidity is absent in the catarrhal forms of appendicitis but as soon as the inflammation extends to the peritoneum it appears and increases directly with the amount of peritoneum involved. A case illustrating this is reported. When an abscess forms and becomes walled off by adhesions, the rigidity diminishes in extent as the peritonitis becomes localized, and finally disappears in many cases if the abscess becomes quiescent. Rigidity is not present in intestinal obstruction unless peritonitis is present from ulceration or gangrene of the bowel. Rigidity is of great value as a sign indicative of perforation in typhoid fever. It is manifest as soon as local peritonitis results from implication of the peritoneum by the ulcerative process, and is marked as soon as perforation occurs. Blake believes that absence of rigidity in a case of supposed perforation is a contraindication to operation. Rigidity may be present in the upper part of the abdomen in inflammations of the pleura, the peritoneum being normal. [C.A.O.]

5.—Morphine Habituation.—The treatment advocated by Goldan consists in the frequent hypodermic administration of hyoscin hydrobromid, beginning first with a very small dose, $\frac{1}{100}$ to $\frac{2}{100}$ gr., to determine idiosyncrasy; the dose of $\frac{2}{100}$ to $\frac{1}{100}$ gr. is repeated hourly, or frequently enough to keep the patient under its influence. After two days he endeavors to defer the repetition of the dose to every two or three hours until the third or fourth day, when, depending upon the case, the time for administration may be extended to from three to six hours, and on subsequent days an occasional dose may be given. During this period a nurse must be in constant attendance. Attention must be given to the respiration and heart, the room should be darkened, absolute quiet enjoined, food by the stomach discontinued and nutrient enemata substituted. The author reports success in each case, the extreme in quantities representing $\frac{1}{2}$ gr. a day for about seven months, for an actual sciatica, to 30 grs. daily for nine years for no definite purpose. [C.A.O.]

6.—Bronchial Tuberculosis.—Abrams has collected 25 cases of tuberculosis of the tracheobronchial glands without involvement of the lungs, occurring in adults. The following points in the diagnosis of this condition are emphasized: A history of cough, which is spasmodic in character, and almost suggests the brazen metallic cough of aortic aneurysm; the presence of tubercle bacilli in the sputum; dyspnea, which is out of all proportion to the signs obtained by physical exami-

nation of the lungs; dulness anteriorly and posteriorly, corresponding to the bifurcation of the trachea; the evidence of comparative good health, notwithstanding the long duration of symptoms; and finally the negative results of pulmonary disease, as determined by physical examination and the demonstration of enlarged bronchial glands by skiagraphy. It has not been the experience of the author that tuberculous adenitis of the bronchial glands is always secondary to some focus in the lungs. The treatment comprises nutrition, air, sunshine, and a hygienic environment. Codliver-oil is lauded. Syrup of the iodid of iron in continuous and increasing doses seems to exert some specific influence in this disease. The writer has employed with good results *sapo viridis*, one dram, rubbed in daily in different portions of the body after the manner of mercurial inunctions. [C.A.O.]

7.—Pulmonary Tuberculosis.—Wark advocates suitable mechanical treatment in conjunction with the tonic and sanitary means now commonly employed in the treatment of this condition. The restricted respiration and defective blood circulation may be largely corrected by active and passive movements prescribed for and applied to the patient, by which the thorax can be expanded, the elasticity of its walls increased and all the muscles of respiration invigorated. Attention must also be given to the complete reduction of tissue debris to those forms that promote complete elimination. Remedies competent to improve the invalid's capacity to digest and assimilate fats occurring in food, and what is, if possible, of much greater importance, that will restore the ability to develop fatty matters from carbohydrates and other food elements. [C.A.O.]

8.—The Physician and the Pharmacopeia.—Wilbert notes the gradual decrease of interest in the pharmacopeia on the part of physicians and the corresponding increase in the number of proprietary or patented preparations, ostensibly intended for the exclusive use of the medical profession. He urges more concerted action on the part of physicians to aid in furthering scientific and ethical advances. The necessity of unifying the more potent medicaments is mentioned and a plea made that this innovation be introduced into the coming edition of the "United States Pharmacopeia." [C.A.O.]

Medical News.

January 10, 1903. [Vol. 82, No. 2.]

1. Boiling as a Method of Sterilizing Catheters. C. B. NANCREDE and W. H. HUTCHINGS.
2. *Veratrum Viride* as an Antitoxic. A. B. ISHAM.
3. The More Frequent Diseases of the Joints: Their Etiology and Treatment, with Report of Cases. JOSEPH H. STOLPER.
4. Intermenstrual Pain. JENNIE G. DRENNAN.

1.—Boiling as a Method of Sterilizing Catheters.—The present paper by Nancrede and Hutchings is really the complement of a paper previously published (*Medical News*, November 23, 1901). Their final conclusions after extensive study and many experiments are that these experiments incontestably prove that caloric can be successfully employed for all varieties of catheters with the exception of the soft French instrument, provided all air is expelled from the interior. This essential having been secured, although in a great majority of cases five minutes immersion in water which is actually boiling will suffice, ten minutes of actual ebullition should be employed, especially for the smaller calibered instruments. A previous cleansing with warm soap-suds is desirable although not essential, reducing as it does the time of exposure requisite to sterilize the instruments. The employment of a saturated solution of ammonium sulfate is desirable for English catheters but is not essential and detracts from the simplicity of the method. [A.B.C.]

2.—*Veratrum Viride* as an Antitoxic.—Isham believes that in grave sepsis it is one of the most potent remedies. Since the last report 27 cases have been successfully treated and he now presents 9 cases in which it was given subcutaneously. Twenty drops of Norwood's tincture is the initial hypodermic dose for an adult followed by 10 more in a half hour, when the first falls short of emesis. No supporting means or modifying agents have been thought necessary during its use. Isham injects it without dilution, though it leaves considerable soreness, lasting a day or two. Profound toxemia demands prompt emesis. These injections should be given in convulsions, high

temperature with delirium, acute hysteric paroxysms, colic from passage of calculi, gastralgia, etc. It relieves spasmodic constriction and quiets pain as well as morphin. It reduces temperature and by dehydration carries waste products out of the tissues, and equalizes the circulation. He discusses the action of its alkaloids and jervic acid. Through the latter it may claim to be a true cholagog. Blood-pressure falls from depletion of the vessels, not vasomotor paralysis. The outpouring of fluid appears to be due to stimulation of the secretory glands, not to mere transudation. The bile vomited is always green, showing change from active gastric secretion. An increased flow from the kidneys appears in 24 hours and lasts several days. [H.M.]

3.—The More Frequent Diseases of the Joints and their Treatment.—Stolper says no matter how far the disease of the joints may have progressed we should expect relief and positive curative effects if the proper treatment is adopted; we can have no general plan for the treatment of such diseases, but the aspirating needle and microscope give a valuable uniform plan for diagnosis. Diseases of the joints being due to many causes, the systemic conditions, family and personal history of the patient becomes of the utmost importance. His method of treatment is modified from Phelps', but superior to Phelps' method in the following points: (a) Carbolic acid, if used in drop doses only, does not have the desired effect; in large doses it causes sloughing of the parts, while bichlorid, if not allowed to be absorbed, accomplishes its purpose and can be used in any quantity; (b) the 1 to 2,000 solution is strong enough for germicidal purposes; (c) the use of alcohol hardens the tissues and prevents the absorption of the mercury, which is washed out with sterilized water. He urges the advisability and necessity of operations on tuberculous joints. [A.B.C.]

4.—Intermenstrual Pain.—Drennan discusses the existence of intermenstrual pain and its cause, and apparently considers that when it occurs it is connected with ovulation and the discharge of the unimpregnated ovum. It is a pain of a colicky nature, and is due to excessive muscular contractions of the fallopian tube. [W.K.]

Philadelphia Medical Journal.

January 10, 1903. [Vol. XI, No. 2.]

1. What Can Be Done to Lessen the Mortality of Carcinoma Uteri? E. E. MONTGOMERY.
2. The Parasyphilitic Affections: The Curability of Tabes and General Paralysis by Intense Mercurial Treatment. DR. LEREDDE.
3. Remarks on the Treatment of the Visceral Ptoses. J. MADISON TAYLOR.
4. On the Practical Results of Actinotherapy. WILLIAM S. GOTTHEIL.
5. Treatment of Malignant Growths with the X-rays. WILLIAM S. NEWCOMB.
6. Urine Segregation, Its Importance and Methods: A New Segregator. ANDREW J. DOWNES.

1.—Lessening the Mortality of Carcinoma of the Uterus.—Montgomery lays stress upon two factors in lessening the mortality of cancer of the uterus, prevention and the early recognition of the disease. The cases of uterine cancer in the nulliparous and unmarried bears so small a proportion to the entire number of cases of this disease as almost to prove the rule that carcinoma is the result of previous traumatism. In view of this, much can be done in the way of prevention by the early repair of lacerations of the cervix before cicatricial changes occur. Next to prevention, the most important is the early recognition of the disease. In no condition is it more important that the physician should be upon the alert for the danger signals, for upon its early recognition will depend in the utmost degree the issues of life, and the assurance of success or failure. The tripod of symptoms upon which the diagnosis is based are pain, hemorrhage and discharge. It must be borne in mind that these symptoms are found in other conditions and are not regular in their occurrence in carcinoma. The mortality can also be lessened by early operation in healthy tissue and, with the exercise of precautions, to prevent the reimplantation of the disease. [F.C.H.]

2.—The Parasyphilitic Affections.—After having cured a case of tabes with mercurial treatment, after thorough researches upon the parasyphilitic affections and cases of recovery from tabes and general paralysis, Leredde is absolutely convinced that in syphilitic patients these diseases are not only syphilitic

in origin, but can also be cured by mercurial treatment if the mercury be pushed to very high doses. The published cases of recovery from tabes and general paralysis upon mercurial treatment cannot be doubted after a study of the question. The unsuccessful cases, though numerous, are due to incorrect treatment and to the existence of the irremediable degenerations produced by these conditions as in all other affections of the nervous system. It is an important fact that tabes or general paralysis developing in a syphilitic patient is not only syphilitic in origin but is also syphilitic in nature. [F.C.H.]

3.—Treatment of the Visceral Poses.—According to Taylor the only point regarding visceral poses which has not been sufficiently discussed is the possibility of repair and the methods by which this may be attained without surgical interference. His experience in the treatment of visceral poses has been chiefly among neurasthenics and persons troubled with obesity or excessive abdominal enlargements. Regulated exercises are not only entirely suitable for people well on in years, but among these the largest degree of relief is obtained from many vague disorders and painful states which had otherwise escaped relief. When these can be attributed to disturbance of circulation of the abdominal organs, not only are the viscera replaced if out of their normal position, but their functional activities if impaired are conspicuously restored. Those cases exhibiting evidences of sclerosis have obtained gratifying and surprising results. [F.C.H.]

4.—The Practical Results of Actinotherapy.—Gottheil gives a brief review of the literature of actinotherapy; omitting all considerations as to the nature and effect of the ultra-violet light rays and the means of employing them, confining himself exclusively to the publications dealing with therapeutic indications and results. The following diseases are considered: Lupus vulgaris and tuberculosis cutis in its various forms; lupus erythematosus; alopecia areata; carcinoma, epithelioma and rodent ulcer; acne and rosacea; nevus; eczema; keloid; and ulcers. [F.C.H.]

5.—Treatment of Malignant Growths with the Röntgen Rays.—Newcomet believes that the results obtained from the Röntgen ray treatment of malignant growths give us a hope that in the future we will have a method to relieve these sufferers and perhaps cure a certain percentage. Several cases of secondary recurrence of cancer of the breast are detailed, in which the treatment resulted very favorably. In some of these cases the treatment was apparently unfavorable, but closer observations showed that when the treatment was not employed the disease advanced with more rapidity. [F.C.H.]

6.—Urine Segregation.—Downes details the importance of urine segregation and the methods employed for this purpose, and details the value of his instrument, which was called the "Separate Urines Siphon." It was an improvement on the Harris instrument, simpler in construction, required no suction apparatus and introduced a new feature—siphonage alone for obtaining the urine from the divided bladder. A shorter instrument is used in the male bladder than in the bladder of the female. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

REVIEW OF LITERATURE

The relation of phthisis to factory and workshop conditions formed the subject of an interesting and important discussion at the recent meeting of the British Medical Association. Niven¹ points out the frequency of pulmonary tuberculosis in workpeople, and discusses in detail the social factors and the influence of alcoholism and of occupation in its development. With a view to diminish the frequency of tuberculosis in workpeople, he recommends: (1) Compulsory notification of all cases of tuberculosis, so that every operative may be instructed in the precautions needed to protect his fellow workmen; voluntary notification is almost equally useful in the poorer parts of the city; (2) all spitting in workshops should be prohibited. This is easier to state than to effect, but

with a great effort it may be managed. The first thing is to bring home to masters and operatives the vital necessity of the measure. Men required to spit should carry a pocket spittoon; (3) increased efforts should be made to secure so far as possible systematic wet sweeping daily in workrooms. The dry sweeping usually practised is likely to do much harm if spitting goes on. It would be an additional safeguard if the rooms were dredged with a disinfectant, as in the case of wool-sorters, under the special regulations; (4) attention to ventilation and lighting. As regards the lighting of workrooms, it is essential that there should be sufficient light by which to cleanse the workrooms in all parts, though more than this would be beneficial. If lighting must be artificial, it should be by electricity, or if gas is used it should be regarded as essential to use intensified lights by which complete combustion can be effected, with reflecting shades and tubes connected so as to carry off the wastegases and aid ventilation. [A.O.J.K.]

Examination of the Pancreas in Diabetes Mellitus.—Weichselbaum and Stangl¹ report 32 cases of diabetes, in all of which they made studies of the pancreas with especial reference to the islands of Langerhans. They found the pancreas diseased in all the cases, but the changes affecting the islands of Langerhans were especially marked and constant. These alterations concerned the number, size, and structure of the islands. There was diminution of their size and number in all the cases, but in addition they were affected by one or more of three special changes: simple atrophy of the epithelium, vacuolation and liquefaction of the epithelium, and sclerosis of the islands; occasionally hemorrhage and calcareous infiltration were also present. All of these changes, however, led to diminution of size and ultimate destruction. The alterations in the parenchyma of the pancreas were neither constant nor ever sufficiently marked to be considered of primary importance. The lesions included atrophy of the tubules, proliferation of the central acini, increase in the amount of interstitial connective tissue, interstitial pancreatitis both acute and chronic, fat necrosis, lipomatosis, cirrhosis of the pancreas, and atheroma of its arteries. Their results correspond very closely with those of other recent observations. The authors believe that the parenchymatous alterations and those in the islands of Langerhans are entirely independent of each other. While they are not positive in the statement that the changes in the islands of Langerhans cause diabetes, still they believe that the evidence gathered of late by themselves and others is in favor of the existence of such a causal relation. In addition to pathologic changes mentioned above they base their opinion on the facts that the alterations in the islands of Langerhans have never been observed in other diseases; that cases in which pancreatic disease exists without change in the islands of Langerhans are nondiabetic; that the Langerhans changes are constant in diabetes, the alterations in the rest of the pancreas are not; and that inasmuch as the two parts of the pancreas are so different in their development and structure it is likely that they also vary in their function. [E.L.]

Transmission of Human Tuberculosis to Cattle.—Johannes Fibiger and C. O. Jensen² report the results of their experiments on inoculations of cattle with bacilli from human beings affected with localized tuberculosis, with the object of ascertaining whether the organisms from these local lesions, *e. g.*, chronic intestinal tuberculosis, behave differently from the ordinary human tubercle bacilli, and whether, through their greater virulence for cattle, it is possible to detect their bovine origin. Inoculations of calves from three cases of tuberculosis of children showed the bacilli to be so virulent as to warrant the conclusion that the cases were all due to infection from cattle. Taking all their cases together they found the greatest variation in the virulence of bacilli for calves—from complete avirulence to virulence of the highest degree. This suggests the thought that possibly the virulence of tubercle bacilli for cattle is gradually weakened by retention in the human organism. [C.S.D.]

On Sugar as a Food.—L. M. Cowley³ presents a review of recent contributions on the value of sugar as a food, and finds that in most cases it fills a true physiologic need, and is

¹ Wiener klin. Woch., September 18, 1902.

² Berliner klinische Wochenschrift, September 22, 1902.

³ Revista de Medicina y Cirurgia, September 10, 1902.

¹ British Medical Journal, September 13, 1902.

naturally sought for in such fruits and plants as contain it. It has been demonstrated to be a most economic ration, owing to the ease with which it is assimilated and to the relatively large amount of energy which it affords. It has been shown by Lucke, of Strasburg, and others to possess marked antiseptic properties, and because of this virtue is employed as a topical dressing. [C.S.D.]

Intestinal Secretion and the Action of Drugs Thereon.

—Edkins¹ states that he was unable to demonstrate experimentally the existence of an intestinal secretion, and that he was unable to find in the work of others any convincing evidence of the existence of such secretion. He is disposed to think that the actions of cathartics is due to (1) removal or destruction of the intestinal epithelium; (2) diffusion of some part of the drugs into the lymph spaces, thus allowing them to affect the nerve endings, and so cause an increase of peristaltic movements; (3) escape of lymph into the lumen of the gut, causing a watery state of the contents, though this is probably of much less importance than the exalted peristaltic action. It is not in the least necessary to call in the aid of a secretion heightened by the action of drugs. Normally there is practically no evidence of the existence of such a secretion. [A.O.J.K.]

The Classification of Cirrhosis of the Liver.—As stated by Arthur R. Edwards² a classification of hepatic cirrhosis may be made upon an etiologic, pathologic or clinical basis. Schematism and over refinement are often observed in the classifications made, yet it is difficult to formulate a division to include all varieties without some contradictions, either pathologic or symptomatic. Accurate theoretic and pathologic differentiation is important with reference to the therapy, as in syphilitic cirrhosis, in malaria, gout, diabetes, dyspepsia, lead poisoning or other kindred causes, and again in the atrophic cirrhosis, in the relief of which surgery now plays a constantly increasing role. [F.C.H.]

Diaphragmitis.—Rohrer³ calls attention to the pathologic findings in cases of inflammation of the diaphragm complicating pneumonia. He believes it to be a common complication of pneumonia and says that in most of those cases in which it is not found it will be observed that the specimen was obtained from a part of the diaphragm remote from the inflamed lung. Extension of the inflammatory process from the pneumonic lung to the diaphragm takes place in two or three ways—(a) by direct extension; (b) by the lymphatics; (c) by the blood vascular system. He says that to inflammation of the diaphragm is due in large part the "pleuritic stitch pain," also the pain in the abdomen often complained of, especially by children. When the patient lies on the affected side the pain is diminished because there is less motion of the chest-wall and diaphragm in that position. The dyspnea of frequency, always present in pneumonia, is due in large part to the patient's efforts to restrict the movements of the diaphragm. The condition is principally a myositis, and may be mild or intense, in keeping with the grade and extent of the pneumonic condition. It is of bacterial origin, the usual microorganism being the pneumococcus. [C.A.O.]

Bacteriologic Research in Six New Cases of Noma.

—A. Trambusti⁴ concludes from these cases and from the experience of Comba, Longa, and others that the bacillus isolated by him and described in *Il Policlinico*, January, 1902, is not the specific cause of this disease, and that noma is not to be regarded as a specific malady but as a form of gangrene which may be determined by a variety of microorganisms in association with the species commonly found in the body cavities communicating with the exterior. [C.S.D.]

Tetanus and Vaccination.—McFarland,⁵ as a result of an analytic study of 95 cases of this rare complication, concludes: 1. Tetanus is not a frequent complication of vaccination. 2. The number of cases observed during 1901 was out of all proportion to what had been observed heretofore. 3. The cases are chiefly American, and occur scattered throughout the eastern United States and Canada. 4. The cases have nothing to do with

atmospheric or telluric conditions. 5. A small number occurred after the use of various viruses. 6. An overwhelming proportion occurred after the use of a certain virus. 7. The tetanus organism is in the virus in small numbers, being derived from the manure and hay. 8. Occasionally through carelessness or accident the number of bacilli becomes greater than usual, and may lead to the epidemic occurrence of tetanus. 9. The future avoidance of the complication is to be sought for in greater care in the preparation of the vaccine virus. [A.O.J.K.]

The Toxicity of Methyl Alcohol.—Reed Hunt, associate professor of pharmacology in Johns Hopkins University, Baltimore, Maryland,¹ was led by the reported cases of poisoning from methyl alcohol used as an ingredient in medicine, or in flavoring agents, such as essence of Jamaica ginger, peppermint, etc., to review carefully the symptoms of acute and chronic poisoning from this substance. In acute poisoning with methyl alcohol the state of coma is deferred, but the duration of the intoxication is prolonged. There is a marked falling of bodily temperature, and hemorrhages from the abdominal tract occur. Convulsions of a rhythmic or choreiform character occur, and sometimes persist for a day or two, being followed by loss of sensation and of reflex movement. Convulsive movements of the eyes are characteristic, and often constitute nystagmus of a pronounced type. There is usually dilation of the pupil. Methyl alcohol is capable of injuring the eye to a far greater extent, and also in smaller doses, than is ethyl alcohol. In cases of chronic methyl alcohol poisoning, the ganglion cells of the retina showed degeneration changes. The interesting and highly important discovery has been made that methyl alcohol is partially oxidized in the body, and that its administration leads to the formation within the body of a markedly poisonous acid (formic). Even when small quantities of methyl alcohol are administered, quantities too small even to cause narcosis, formic acid is still found in the urine. This shows how difficult it is for the body to completely oxidize methyl alcohol. The tendency to attribute the poisonous qualities of methyl alcohol to impurities appears to be without good reason, as it has been found that even in crude commercial preparations of wood alcohol impurities are not present in sufficient quantity to cause death. In this connection Kuhnt and others have decided that the blindness and death in the cases which they have studied could never have been caused by any of the impurities or by all combined, but that they are due to the methyl alcohol alone. [C.S.D.]

Carcinoma.—In discussing the causation of carcinoma, Reyburn² says that it is probably always local in its early stages, and that its origin is due to an injury or local irritation of the part affected. He believes that it is a disease of senility or decay of the tissues, or at least occurs at the time when the retrograde metamorphosis of the tissues is taking place. It is comparatively rare in hot climates, and especially where the diet of the inhabitants is composed chiefly of rice or other starchy foods. The disease is very prevalent at the present time where animal food is largely consumed; the number of cases of carcinoma has been found to increase in proportion to the increase in the consumption of nitrogenous or animal foods. The writer says that the theory of Dr. Gaylord, that carcinoma is caused by a protozoan or animal microorganism, seems to be disproved by later investigations, and that the probability is that carcinoma is simply erring epithelium which has taken an abnormal growth and development. [C.A.O.]

A case of hemophilia in a woman with symptoms of defective circulation in the legs and threatened gangrene of the toes, and the occurrence of death with cerebral symptoms, is reported by Arkwright.³ [A.O.J.K.]

Typhoid Fever and Tuberculosis.—Péhn⁴ cites two cases to show the successive development of these two diseases as opposed to the former view that there is an antagonism between them. The first was a robust man of 34, who had a severe and long-continued attack of typhoid fever. Six weeks after its onset the signs of pulmonary tuberculosis appeared and later

¹ British Medical Journal, September 13, 1902.

² The Chicago Medical Recorder, September, 1902.

³ Maryland Medical Journal, September, 1902.

⁴ Il Policlinico, September, 1902.

⁵ Journal of Medical Research, vii, 474, 1902; Lancet, ii, 703, 1902.

¹ Johns Hopkins Hospital Bulletin, August and September, 1902.

² Washington Medical Annals, September, 1902.

³ Lancet, ii, 737, 1902.

⁴ Lyon Médical, November 2, 1902.

large numbers of tubercle bacilli were found in the sputum. The second case was a woman of 24, who, while in a hospital, developed pulmonary tuberculosis and typhoid fever intercurrently. The first patient is still living and engaged in hard labor; the second died within four months. [A.G.E.]

The Movements and Innervation of the Stomach.—May,¹ as a result of experimental investigations, concludes that the vagus controls both motor and inhibitory fibers of the stomach musculature, and that the influence of these fibers is definite and easily demonstrated. On the contrary, it is believed that the splanchnic nerves have no direct influence, either motor or inhibitory, on the muscular wall of the stomach. [A.O.J.K.]

The Clinical Value of Ehrlich's Dimethylamidobenzaldehyde Reaction.—Kozickowsky,² by a large number of experiments and tests, determined the clinical significance of Ehrlich's dimethylamidobenzaldehyde reaction. To obtain this test a tube is filled one-third full of urine and 10 drops of the dimethylamidobenzaldehyde solution added. If the reaction be positive, the color of the urine will turn red. The author uses a scale of colors to determine the intensity of the reaction by comparison. This scale is marked with the following tints: cognac color, rose color, light and dark red. A pathologic condition is indicated only when one of the two last colors are present. The test-tube should be allowed to stand for one minute before determining the presence of the reaction. Kozickowsky tested 1,000 specimens of urine, and concluded that the pathologic reaction occurs in the severe constitutional diseases. It is not a specific test for any one disease, nor does it occur in all severe diseases. It is of clinical significance, however, because it may indicate the development of a complication or a severe stage of a disease. This reaction, with the aid of the clinical symptoms, should be an indicator of the degree of intoxication, and its disappearance for several days in succession indicates a lessening in the severity of the disease. The author determined that fever alone could not produce this reaction. [W.E.R.]

Fatal Ulcerative Streptococcus Colitis; Blood-casts of the Colon.—Beck³ reports that a male patient of 34 had suffered at the age of 16 for three weeks from an acute attack of dysentery, and at the age of 22 from typhoid fever and pneumonia, after which he enjoyed remarkably good health. In the present attack he suffered from periodic attacks of diarrhea lasting two days and occurring at intervals of about one week. After four of these attacks he was free for several weeks when the diarrhea returned, the disease again being characterized by periods of intermission, but in each successive attack the symptoms became more pronounced, and there was rapidly progressing emaciation and corresponding weakness. During these attacks he had never observed blood in the stools. Eight days before admission he was seized with intense abdominal pains, and began to have frequent evacuations of the bowels—15 to 20 movements daily. The patient passed two casts of the intestine measuring 13 cm. and 42 cm. (5 inches and 13 inches) respectively. The patient died in collapse and necropsy showed the large intestine to be the seat of numerous ulcers. Spreads made and observed microscopically showed numerous colon bacilli and streptococci. [A.B.C.]

An instance of temporary reminiscence of a long-forgotten language during the delirium of bronchopneumonia is reported by Freeborn.⁴ [A.O.J.K.]

Experimental Examinations Concerning the Nature of the Circulatory Disturbances in Collapse During Acute Infectious Diseases.—The teaching concerning the cause of circulatory weakness in collapse during acute infections has been, until lately, that it depends upon a paresis of the vasomotor center of the medulla. Pässler and Rolly's⁵ denial of this is based upon a series of experiments with dogs infected with diphtheria toxin in whom the disturbance was claimed to have been due to cardiac paresis. To decide this question they are using an entirely new method of experimentation.

The working capacity of the heart in rabbits was tested by measuring the blood-pressure of infected animals before and during collapse, in the carotid artery and in the auricle, the demands on cardiac power being increased at the same time by abdominal massage and compression of the aorta. The reflex irritability of the vasomotors was noted through the faradic stream. They used diphtheria toxin and pneumococcus cultures for experimentation, and after producing intoxication with them, it was seen that the vascular disturbance always began as a vasomotor paresis. The heart muscle acted so well through it all that even after the beginning of the arterial palsy the blood-pressure remained the same. Cardiac weakness appeared only after the carotid pressure sank secondary to complete vasomotor paresis, and this is more due to a deficiency of the blood-supply to the heart muscle, due to the vascular paresis, as proved by the fact that if sufficient blood is given to the heart by aortic compression and greater distention of the bloodvessels the cardiac weakness disappeared for the time. The pneumococcal infection did not injure the heart muscle, but the diphtheria-heart showed a diminished resisting power in asphyxia, the direct result of the diphtheria poison. [E.L.]

Leukocytosis in Pneumonia.—Lambert and Daley¹ report their observations of leukocytosis in 87 cases of acute lobar pneumonia, varying in degree of severity and extent of lung involvement. They found that there was no ratio existing between the amount of leukocytosis and the height of the temperature. When two or more lobes were involved the count was higher than when only one lobe was affected, though the severity of the infection influenced the count more than the extent of pulmonary exudate. A persistent low count, *i. e.*, below 7,000, indicates a fatal prognosis. Of 21 fatal cases the count varied from 10,600 to 56,000, averaging 32,778. In some cases the count began with 13,000 to 14,000, and fell rapidly to 2,600 on the day of death. In others, just before death the count rapidly rose to from 20,000 to 23,000. In 21 cases with protracted resolution, the counts varied from 8,000 to 63,000, averaging 21,851. Of 40 uncomplicated, moderately severe, and very severe cases the count averaged 22,268. In the mild cases with high temperature the average count was 15,577, with low temperature the average count was 12,669. Extension of the process is often followed by an increase in leukocytosis. When there is an extension of the process and resolution of previous consolidation the count rises. In one case, complicated by a serous effusion, the count rose from 19,600 to 25,400. In six cases in which empyema complicated pneumonia there was a sudden rise in the count to about double the count on the previous day. They conclude that variation in the count points to (1) an extension of exudate, (2) sudden resolution, (3) both of these, (4) or to a sudden development of a purulent infection superimposed upon a preexisting pneumonia. [J.H.W.R.]

Contribution to the Study of Cyclic Vomiting in Children.—F. Valagussa² is of the opinion that recurrent vomiting occurs in children inheriting a uric diathesis, that it is a sign of abnormal metabolism and may be absolutely separate from any affection of the gastrointestinal apparatus. The disease is not a morbid entity but a complex syndrome of which vomiting is the principal symptom. The pathogenesis of the recurrent attacks holds the relation of an acid intoxication of the organism, which we designate uricacidemia, and the recurrent vomiting may be considered as the equivalent of gouty attacks in children of arthritic heredity. [C.S.D.]

Pneumococcal Meningitis: Recovery with Persistence of Slight Brachial Paralysis.—This case is reported by Archard and Grenet.³ The patient was a man of 58, with symptoms including intense pain in the head, back and legs, chills, fever, sweating, etc. Spinal puncture was performed six times, cultures from the fluid removed at one of them showing the characteristic diplococcus. Hytologic examination of the fluid obtained at various punctures showed the following: Only polymorphonuclear cells; lymphocytes, 81%; polymorphonuclears, 19%; some endothelial cells; polymorphonuclears, 55.6%; lymphocytes, 44.6%; polymorphonuclears, 92.7; lympho-

¹ British Medical Journal, September 13, 1902.

² Berliner klinische Wochenschrift, November 3, 1902.

³ Maryland Medical Journal, November, 1902.

⁴ Lancet, 1, 1885, 1902.

⁵ Münchener medicinische Wochenschrift, October 21, 1902.

¹ The St. Paul Medical Journal, December, 1902, p. 844.

² Il Policlinico, November, 1902.

³ Gazette heb. de Médecine et de Chirurgie, November 13, 1902.

cytes, 7.3%; complete disappearance of polymorphonuclears, a few lymphocytes present; entire absence of cellular elements. Cytoscopy of the fluid gave the following for the six specimens: -0.55, -0.41, -0.38, -0.56, -0.50. The oscillations of the leukocytes followed more or less closely the irregular fever, the great polymorphonuclear increase noted as occurring in the fourth sample being coincident with a marked recrudescence of fever. The favorable termination of the case was perhaps due to the comparatively low virulence of the organisms, inoculation into a mouse not causing its death. [A.G.E.]

Hairballs and Other Concretions in the Stomach.—Fenwick¹ discusses hairballs and other concretions in the stomach, pointing out that hairballs are much more common in young women than in other persons, and that while they may be present without noteworthy symptoms they usually occasion more or less gastric disorder. Vegetable tumors are much less common than hairballs, and consist usually of fruit skins, fruit stones and stalks, or the fibrous roots of certain medicinal plants. Gastroliths usually occur in men about middle age, who from a morbid desire for alcohol in any form have been in the habit of drinking varnish, polish, or any other resinous fluid containing it. Most cases have been mistaken for carcinoma of the stomach (on account of the common palpable tumor), but the diagnosis is usually possible by attention to the age and sex of the patient, the duration of the complaint, and the physical characters of the tumor which, in the case of the hairball, is crescentic or globular in form smooth, hard, painless, and so freely movable that it can be pushed upward beneath the left costal arch. Furthermore, the outlines of the tumor cannot be distinguished from those of the stomach, HCl is usually present in the vomit, and it is impossible to insert a tube more than two inches into the stomach. In most cases the appropriate treatment is operative. [A.O.J.K.]

The Causes and Treatment of Angina Pectoris and Allied Conditions.—Breuer² agrees with the schools of French clinicians, who consider true angina pectoris with its violent retrosternal radiating pain, its feeling of cardiac oppression, and impending death, a consequence of the sudden anemia of the heart muscle. The coronary arteries or the aorta in their neighborhood are sclerosed; they supply sufficient blood to the heart in a period of rest, but when bodily exertion or increased arterial pressure call for more blood they cannot supply sufficient and the anemia thus produced causes the stenocardial conditions. The cardiac weakness, which was formerly considered the cause of the attack, is only a result of the anemia and is proportional to it. The diagnosis of true angina from pseudoangina is usually easy. In the former disease the attacks are usually, if not always, due to heightened muscular efforts; in the latter, of which there are four subvarieties (hysterical, reflex gastric, neuritic, and toxic), they are spontaneous, or brought on by mental emotion. He considers the treatment of angina from the standpoint of its attacks and their prevention. The best drugs for the former are morphin, amyl-nitrite, and nitroglycerin, for the latter erythronitrol, nitroglycerin, the iodids, but especially does he praise theobromin, which was first recommended by Askanazy in 1895, and which is considered by him one of the most beneficent therapeutic discoveries of the age. It is best given in the form of diuretin in daily doses of from 40 to 50 grs., which then must be gradually reduced until the minimal dose preventing the attack is found. It, like the nitrites, prevents the attack only while being taken, but it can be used for weeks without the slightest unpleasantness. The author publishes a number of observations in which theobromin or one of its derivatives was used, and in all of them—and they included not only true coronary angina, but also such allied states as aortic, aneurysmal and nicotinic stenocardia, and several cases of gastric and abdominal cramps, some of which came to autopsy later proving themselves to have been arteriosclerosis of the abdominal aorta and its branches—was the number of attacks markedly diminished. He discusses the differential diagnosis of these various states, intermittent dysperistalsis due to intestinal anemia, intermittent claudication, etc., tracing their connection

to angina pectoris and other sclerotic conditions. The action of theobromin diminishes the pathologic reflex irritability of the arteriosclerotic bloodvessels, preventing the onset of spasms, just as do the slower acting nitrites. It also probably diminishes blood-pressure. He also advises the drug in cases of headache, in which the origin is probably arterial. [E.L.]

A case of membranous gastritis terminating in recovery of the patient (with a review of the literature) is reported by Grünbaum.¹ [A.O.J.K.]

Actinomycosis in America.—After summarizing previous contributions to the subject W. J. Ewing² gives an account of six cases noted by himself. About 100 cases of this disease have occurred widely spread throughout the United States. Though the affection is not confined to either sex or to any special age or occupation, it occurred in 36% of the cases in persons handling cattle or grain. The clinical characteristics vary with the part of the body attacked; abscesses are formed and when facial the pain is often mistaken for toothache and teeth are extracted without relief. Bronchial cases simulate pulmonary tuberculosis and abdominal cases appendicitis. Diagnosis is uncertain without demonstration of the ray-fungus, which occurs in the contents of the abscess. The spread of the disease is sluggish by infection of contiguous tissue or by metastasis, the blood current acting as carrier. Treatment with injections of cynamyl, muriate of cocain, zinc chlorid, and silver nitrate, respectively, has resulted favorably in some cases. Many cases have been treated surgically by excision, incision, and curetage. Recovery followed with great difficulty and only after repeated operation, except when potassium iodid was used in connection with operative treatment, in which case the action of the drug brings about a solution of the cellular infiltration around the abscess and the discharge of the ray-fungus in imitation of nature's own method of healing. [C.S.D.]

Pancreatic Lithiasis.—Kinnicutt³ reports a case of pancreatic lithiasis, the calculi having been recovered from the stools, and reviews the literature (6 cases). Of the symptoms described by different writers, nausea, vomiting, and diarrhea, cannot be regarded as characteristic. The pain does not differ in kind or location from that of cholelithiasis, although in one case the location of the pain along the left costal arch was possibly suggestive. The presence of an unusual number of undigested striated muscle fibers in the stools cannot be regarded as positively diagnostic. An abnormal amount of fat in the feces is by no means a constant or even frequent symptom of pancreatic disease. The presence or absence of jaundice is not of diagnostic importance. The decisive evidence of pancreatic lithiasis is the recovery of the characteristic concretions in the stools. With the exception of the concretions in the stools the symptoms mentioned may fail to furnish evidence of pancreatic lithiasis, but their various combinations may be suggestive. Thus, attacks of epigastric colic of obscure nature, with or without jaundice, associated with a large number of muscle fibers in the stools, accompanied or followed by glycosuria, should be regarded as a reasonable basis for a diagnosis of pancreatic lithiasis. Müller's investigations indicate that a greatly diminished splitting up of the ingested fat *per se* positively indicates the absence of pancreatic juice in the intestinal digestion. In this case, therefore, in the absence of cachexia or other signs of a neoplasm of the pancreas or of neighboring organs which would occlude the ducts by pressure, a pancreatic lithiasis should be suspected. [A.O.J.K.]

Tropical or Amebic Abscess of the Liver and Its Relationship to Amebic Dysentery.—Rogers⁴ states that the ameba is constantly found in an active condition in the wall of tropical abscesses of the liver, although frequently absent from the pus in its cavity. The ameba is the only organism constantly found in such abscesses. Staphylococci and other pyogenic bacteria are absent from the pus in a great majority of cases when the abscess is first opened. In cases in which a complete record is available there is either a history of dysentery, or lesions of this disease are found postmortem in over 90% of the cases, and it cannot be certainly excluded in the

¹ British Medical Journal, 1902, ii, 1096.

² Münchener medicinische Wochenschrift, September 30 and October 7 and 14, 1902.

³ Lancet, ii, 283, 1902.

⁴ Johns Hopkins Hospital Bulletin, November, 1902.

⁵ American Journal of the Medical Sciences, cxxiv, 948, 1902.

⁶ British Medical Journal, ii, 844, 1902.

remainder. The dysentery precedes the liver abscess or lesions in the large bowel of an antecedent date are found postmortem in 95% of the cases. The form of bowel disease associated with the large tropical or amebic abscess of the liver is amebic dysentery. Severe sloughing forms of catarrhal dysentery may be associated with small multiple pyemic abscesses, which is a totally distinct condition from tropical or amebic abscess, and is very rarely recognized during life. Quinin solutions rapidly destroy the ameba, and may be used with advantage in washing out liver abscesses after they have been opened. They are also worthy of a trial as injections after aspiration of the pus as a possible curative measure, especially in such cases as are free from the ordinary pyogenic organisms. [A.O.J.K.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

EDITORIAL COMMENT

Antiseptic and Aseptic Surgery.—Since the days when Pasteur first showed that germs cause wound supuration and Lister devised his carbolic acid method of destroying bacteria, so many other methods of accomplishing the same end have been devised, that to enumerate them would be an almost endless task. While the number of chemicals and the methods of using them are so numerous, no efficient bactericide has yet been found which does not also affect delicate tissues to some extent. This was first laid down as a principle by Lister in his own words as follows: "An antiseptic is injurious to the cellular elements of the body as well as to microbes. The art of the surgeon lies, therefore, in employing it in a sufficient but not excessive dose." The knowledge of this injurious effect on the tissues led to the introduction of the methods of aseptic surgery. By means of boiling and the use of autoclaves we are now able to prepare germ-free dressings and instruments without the use of antiseptics. Gloves, masks and elaborate operating-room outfits have added still further to the complex possibilities of preparation but in the hands of certain operators have resulted in increased safety to the patient. Some like Schleich have gone so far as to entirely discard the use of antiseptics, even in the preparation of the hands and the skin of the patient and this method when thoroughly carried out has given good results. Bacteriologic examination, however, shows that without the use of antiseptics, germs are always present and perfect healing is due to the vitality of the parts. At present the majority of conservative surgeons who claim to practise aseptic surgery have continued to make use of antiseptics to some extent, believing that there is less danger from injury to tissues with suitable solutions than from bacteria. While the introduction of aseptic methods gives excellent results without any wound reaction it is certain that except in the hands of those thoroughly trained by long experience with careful men, the method is far less safe than the antiseptic method. A point which is frequently forgotten is that no matter how careful the preparation of the operator and the patient, both must keep clean after being once prepared. Of late the tendency seems for the pendulum to swing back in favor of the more liberal use of antiseptics than formerly, though extreme measures such as the use of the spray, originally recommended by Lister, are not being reintroduced. As would be natural to expect, a number of papers which have recently appeared in the Lister jubilee number of the *British Medical Journal* especially emphasize the advantages of the antiseptic method as compared with aseptic methods. So eminent a surgeon as Lucas-Championniere, of Hotel Dieu, Paris, makes the statement that he has always exactly followed the original Lister method and he believes that accidents are always the penalty of infidelity to this well established principle. While few have adhered to the original method, we

believe that those who have done so are not as far from the position of the average conservative surgeon of the present day as those, like Schleich, who have gone to extremes in aseptic methods, and so far as the safety of the patient is concerned, this middle ground will in the future no doubt be the one generally adopted.

REVIEW OF LITERATURE

Adhesive Perigastritis Secondary to Gastric Ulcer.—Duplant¹ speaks of the symptomatology and treatment of these lesions and reports several cases. Two types of perigastritis are observed, the first and most frequent corresponding to ulcers on the small curvature and anterior surface of the stomach. In this type, the left lobe of the liver, the parietal peritoneum under the left false ribs and the omentum may be adherent to the stomach. Consequently pain is felt on the left side and is increased by pressure under the left false ribs. A slight induration or even a tumor may be felt in the left epigastric region. The second type corresponds to pyloric ulcers. Subjective symptoms are not marked unless there is pyloric stenosis. Perigastritis rarely induces vomiting unless there is stenosis. Treatment is surgical intervention and Duplant believes that gastroenterostomy should be added to freeing of adhesions, whether there be pyloric stenosis or not. [A.G.E.]

Congenital Hydronephrosis.—Acker² reports two cases. The condition was due to congenital malformation of the urinary canal. In the cases described the cause was found in the bladder near the opening of the ureter or the verumontanum. Both cases were operated upon, death ensuing in one case in three hours and in the other in eight hours. [J.H.W.R.]

Aseptic Method of Lister in the Present and in the Future.—Lucas-Championniere³ gives great praise to Lister and says he gave a scientific basis to surgery. He made it rest on established truths. He did away with that uncertainty in which the greatest surgeons up to that time had left it, and inspired by the ideas of Pasteur concerning the infinitely little and on fermentations, he conceived the idea that the infinitely little and its germs of all kinds everywhere strove against any efforts of the organism toward repair. His first practical attempt consisted in withdrawing a compound fracture from the action of these germs. He recognized that without cutting off the access of air he was able to transform this compound fracture into a center in which the process of repair was identical with that occurring at the center of the simple fracture. He could at will withdraw it from these complications of wounds which, he maintained, were all of a septic nature. To free the wound from germs was sufficient. He removed those which had collected in it, he prevented the introduction of new ones at the time of dressing and their access during the interval between the dressing and the final cicatrization of the wound, and thus proved to the world the practicability of his ideas concerning the aseptic treatment of wounds. [A.B.C.]

Malignant Disease of the Gallbladder.—Mayo⁴ states that of 405 operations on the gallbladder and biliary passages, for all causes, 20 were for malignant disease. He then discusses the etiologic relationship between gallstone disease and cancer of the gallbladder, concluding from the following facts that gallstones are the most important etiologic factor: 1. Gallstones are almost constantly present in primary malignant disease of the gallbladder and rarely in secondary. 2. The relative proportion of gallstone and malignant disease of the gallbladder in women and men is practically identical. 3. The pathologic lesions found are best explained by this theory. 4. The similarity in age frequency. If the proportion be only 1 in 20 it certainly aids in deciding that the early removal of active gallstones is sound surgery. The diagnosis is considered, attention being called to the fact that a cystic gallbladder of long standing or an adherent bladder shrunken upon a mass of stones may give rise to a hard tumor simulating malignant disease. Four cases are reported, cholecystectomy being followed by recurrence in three. One of the latter was a partial hepatec-

¹ *Yon Medical*, December 14, 1902.

² *Washington Medical Annals*, November, 1902, p. 330.

³ *British Medical Journal*, December 13, 1902.

⁴ *Northwestern Lancet*, December 15, 1902.

to my. Mayo states that all cases in which the liver or the glands in the fissure of the liver are secondarily involved are followed by early recurrence. [A.G.E.]

Surgical Treatment of Chronic Nephritis.—Lepine¹ discusses the surgical measures useful in chronic nephritis and reviews the literature on the subject. Certain cases reported by Harrison, Israel, Edebohls and others, had led to the hope that by irritating the periphery of the kidney, thus relieving congestion and stimulating the formation of new bloodvessels, an amelioration in the process of chronic nephritis might be accomplished. Lepine believes in the cases of displaced kidney in which the ureter is twisted, and in consequence a nephritis has developed, that fixation of the kidney is justifiable. Clinical experience has demonstrated in certain cases the usefulness of this operation, which has been followed by a disappearance of the nephritic pain and the bloody urine, symptoms which have resisted previously all medical treatment. After decortication in cases of Bright's disease, the urine is first diminished and then increased, but without presenting any change in composition during the following weeks. To determine the effect of operative procedures on venous stasis he performed experiments on dogs, artificially producing venous stasis, then later decapsulating the kidney. There was no appreciable increase in the amount of urine after the last operation. In the case of painful unilateral congestion which has resisted all medical measures, or a case of anuria following a "poussée congestive," operation is indicated. He believes it is possible by decapsulation to favorably affect the functional activity of the secreting cells of the kidney, but the operation is a serious one and is particularly grave when done upon a patient more or less enfeebled, and who is perhaps threatened with uremia. Operation upon simple Bright's disease cannot be advised. [J.H.W.R.]

Acute Hemorrhagic Pancreatitis.—The case described by Lando² was that of a middle-aged man who died 31 hours after the onset of acute epigastric pain and vomiting. Autopsy showed areas of fat necrosis in the abdominal wall and omentum, but the changes in the pancreas were different from those of previously reported cases. Lando compares them as follows: (1) Instead of an infiltration of red blood-cells, there were only the remains of their disintegration; (2) instead of normal areas interspersed between the necrotic ones, there could not be found in any portion perfectly normal acini; (3) instead of small-celled infiltration being marked, it was seen in only a few scattered areas; (4) instead of a marked increase throughout of the connective tissue, there was only a slight increase in the region of the tail of the organ. [A.G.E.]

Traumatic Stricture of the Esophagus.—Borden³ reports the case, which was operated upon by Abbe's method. The patient, a man, while insane had swallowed a solution of iye, which resulted in the development of a stricture of the esophagus. An unsuccessful attempt was made to dilate the stricture by retrograde dilation, and later Abbe's method was successfully employed. This consisted in passing from above downward through an opening in the neck into the stomach a filiform sound, to which was attached a silk thread. The sound was brought through the previously made opening in the stomach and traction with a sawing motion was made with the silk thread until it was possible to pass a stomach tube. The operation was successful, both wounds healing rapidly. [J.H.W.R.]

Plugging with Iodoform Gauze in Operations Performed in Cavities of the Body.—Von Bergmann⁴ describes the method in three operations in which the pharyngeo-oral cavity has to be opened, viz., resection of the upper jaw, operations on the tongue, and total extirpation of the larynx. In each of these operations he packs the wound with iodoform gauze, and the results show rare infection, even though the area of operation is in close contact with the secretions from the mouth. Up to the year 1900 he had performed 47 total and 23 partial resections of the upper jaw. Of the 47 resections, 7 patients died—4 of broncho pneumonia, 1 of collapse, 1 of pul-

monary embolism, and 1 of erysipelas. Of the 23 partial resections, 1 patient died of pneumonia. Infection occurred in one case, that of erysipelas. In extirpation of the tongue, or of large pieces of the tongue for carcinoma, he invariably carries out Langenbeck's method. The wound which remains in the floor of the oral cavity and in the lateral wall of the pharynx is tightly plugged with iodoform gauze as is the wound in extirpation of the upper jaw, the method for which he describes in detail. He has performed 159 of these operations, 131 of the patients recovering and 28 dying. Of the deaths, 16 occurred in the course of a few hours following the operation or during the first two days, shock being responsible for them. In the remaining 14 deaths, 9 were caused by aspiration pneumonia, thus showing infection of the wound in a very small percentage of the cases. He has performed 46 operations on the larynx, 20 for total extirpations and 28 one-sided operations or excision of small segments. Of the 20 total operations, 6 patients died soon after the operation, not one of cellulitis of the throat, but all of aspiration pneumonia. Up to 1890 he had performed 11 total extirpations with 5 deaths. After that he never performed the operation without shutting off the mouth and throat cavity from the trachea, and in 9 subsequent operations there was but 1 death. [A.B.C.]

Tuberculous Rheumatism: Essential Hydrocele of Tuberculous Origin.—By essential hydrocele Rome¹ means that form which is without granulations or classic tuberculous lesions and with integrity of the testicle and epididymus. He reports the case of a man of 60, who at the age of 14 had synovitis of the right knee, this being followed by three other attacks, the last at the age of 60. The man also had double orchitis at the age of 16. At the age of 57 a right hydrocele appeared, this and the knee being operated on three years later. The tunica vaginalis was thickened but showed no classic tuberculous lesion. The testicle and epididymus were normal. Animals inoculated with the fluid developed tuberculosis. [A.G.E.]

Chronic Pancreatitis.—Hardin² reports the case, which occurred in a woman of 49, who had previously had both breasts removed for cancer. The symptoms came on acutely and consisted of severe pain in the epigastrium lasting for four hours, which was followed by a sense of fulness and discomfort in the region of the stomach, associated with frequent eructations of gas. Attacks of pain recurred every third day, while during the interval the stomach symptom persisted. There were present some rise of temperature, jaundice, nausea, constipation, and neurasthenic symptoms. The examination was practically negative, except for slight tenderness and resistance to deep pressure in the epigastrium. An operation was performed, but as the pancreas was found enlarged and nodular the presence of a cancer was suspected, and nothing was done except to open and drain the gallbladder. A small piece of the pancreas was removed for examination, which showed chronic pancreatitis but no cancer. The patient recovered entirely. He divides the causes of chronic pancreatitis into (1) obstruction of the pancreatic duct by calculus in the duct, a gallstone in the common bile duct, or a gallstone in the diverticulum of Vater; (2) infection by microorganisms; (3) toxic substances in the blood. He discusses the symptoms, diagnosis, prognosis, and treatment of this disease, which was first described in 1896 by Riedel, though not until recently has its true significance been recognized. The treatment is purely surgical. [J.H.W.R.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Early Rupture of Tubal Pregnancy.—The rupture of a tubal pregnancy in a young woman seven days after missing one menstrual period is reported by Banga.³ Symptoms were those of internal hemorrhage, and operation 38 hours after the onset revealed a small, ragged perforation of the left tube near

¹ La Semaine Médicale, December 3, 1902, p. 397.

² St. Paul Medical Journal, January, 1903.

³ Washington Medical Annals, November, 1902, p. 375.

⁴ British Medical Journal, December 13, 1902.

¹ Gazette heb. de Médecine et de Chirurgie, November 20, 1902.

² Washington Medical Annals, November, 1902, p. 357.

³ Chicago Medical Recorder, December 15, 1902.

the uterus, in which an artery was still bleeding. No adhesions were present, the peritoneum being smooth to the edge of the perforation. There was no bloody discharge from the uterus before, nor had there been up to two weeks after the rupture. [A.G.E.]

Quadruple Pregnancy.—Baudouin¹ reports an interesting case that occurred in the service of Dr. Mataranga, of Paris. A woman of 33, twice married, had borne seven children, five by the first and two by the second marriage. The eighth pregnancy was quadruple, there being two placentas. The membranes of the first ruptured about 24 hours before the other. The first contained three female fetuses, two of them being united from the umbilicus to the clavicles, forming a sternopage. The other was normal, and is still living. The second pouch contained a male fetus that was dead. Baudouin calls special attention to the fact that this was a quadruple pregnancy from two ovums, one of which produced three fetuses of the same sex. This placenta contained ridges, dividing it into distinct compartments. [A.G.E.]

Invagination of Uterus Due to Ventral Fixation.—Holland and Robinson² report a case of invagination of the uterus that occurred in a woman of 26 who, in 1898, had been treated for posterior displacement by ventral fixation. Normal labor was followed by invagination of the uterus and death. Examination showed that a space in the fundus of the uterus three inches square had atrophied as the result of the peritoneal band produced by operation, this being only about one-eighth the thickness of the adjacent uterine wall. [A.G.E.]

Spontaneous Rupture of the Uterus During Labor.—Lafourcade³ describes a case of uterine rupture that occurred during the presence of the attending physician and very shortly after an examination had been made. The patient was a woman of 42, in her fifth pregnancy. The preceding deliveries were spontaneous. The uterine tear was 18 cm. long, two-thirds on the left side of the organ and one-third transversely above the isthmus. The fetus and placenta passed into the peritoneal cavity. Laparotomy and supravaginal hysterectomy were followed by recovery of the patient. The uterus showed no abnormality except a slight interstitial myositis. [A.G.E.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

EDITORIAL COMMENT

The Increase of Drug Habits Becoming a National Menace.—In the *American Journal of Pharmacy* for November, 1902, is the report by Mr. Hynson, chairman of the committee appointed by the American Pharmaceutical Association to investigate the question of the acquirement of the drug habit. This report, while it is written from the standpoint of the pharmacist, reveals a state of affairs so truly appalling that it merits the consideration of every physician, indeed of every person interested in the welfare of society. As perhaps the most accurate means of determining the question of the increase in the drug habit in the last few years, the committee gives the statistics concerning the importation of two plants most commonly employed for this purpose, namely, opium and cocain. Since 1898 the population of the United States has increased 10 percent; the amount of opium imported, however, has increased to the startling extent of 500 percent, and this despite the fact that it is less frequently used by the physicians than in years past. The importation of opium for 1902 amounts to the astounding sum of 712,000 pounds; and this is exclusive of more than a ton of morphin. This increase in the importation of opium is paralleled in the case of cocain, the quantity of that alkaloid brought into the country in the year covered by the report being three times as large as the importation

of 1898. As the committee points out it is impossible that there should have been any such enormous increase in the legitimate demand for the drug. Indeed, it would seem probable that the administration by physicians, certainly of opium and probably also of cocain, has diminished rather than increased, and it is thus safe to conclude that practically all of this supernormal demand is by drug "fiends." From responses to letters addressed to a number of pharmacists and physicians in various cities and towns in the East, the committee concludes that in the eastern portion of the United States out of every 1,000 inhabitants about 3 are addicted to the use of some drug other than alcohol. The condition of affairs among certain classes is almost inconceivable; thus one of the correspondents whose business is in the Tenderloin district of New York is personally acquainted with 200 opium habitues, while the police officers assert that cocain adulterated with acetanilid is peddled from door to door as an ordinary necessity of life. Such a condition of affairs is so threatening to the very existence of society that its causes cannot be too thoroughly investigated in order to discover a proper remedy. The committee believes, and we think justly so, that a great part of the responsibility for this horrible state of affairs rests upon the drug dealers, both retailers and wholesalers. When a customer returns to a drug store week after week to purchase large quantities of morphin or cocain, or a jobber sells cocain in large quantities at frequent intervals to a retailer, the dealer must know that the consumer is using the drug for improper purposes and certainly has, as the committee claims, a right to refuse to supply it; nay more, he is morally obliged to do so. To quote the words of Mr. Hynson: "The excuse so often made—'If I don't sell it to him, some one else will'—is as cowardly as it is specious." It would seem that the only way to prevent these immoral sales is by legislative enactment, and the two professions of pharmacy and medicine should unite for this purpose.

REVIEW OF LITERATURE

Lactose and Magnesia.—Huchard¹ recommends the following as an antacid and as a laxative:

Lactose 39 grams (10 drams)
Calcined magnesia 62 grams (2 ounces)

One dessertspoonful to one tablespoonful daily in a half glass of water. [L.F.A.]

Treatment of Uterine Hemorrhages.—A. Martinet² employs hypodermic injection of the following in uterine hemorrhages:

Bonjean ergotin 2 grams (31 grains)
Glycerin 10 cc. (2½ drams)
Distilled water 10 cc. (2½ drams)

From 1 to 10 cc. (15 to 150 minims) of this solution may be injected in 24 hours, depending upon the amount and persistence of the hemorrhage. [L.F.A.]

Anesthesin.—Paraamidobenzoic acid ethylester or anesthesin is a white powder, odorless and tasteless, fugaciously irritating to mucous membranes, soluble in ether, alcohol, fatty and ethereal oils; slightly soluble in hot water, not at all in cold water. It is not poisonous in even larger doses than 2 grams (30 grains). It belongs to the orthoform group of anesthetics and is considered the best of these by Spiess.³ He contrasts the use of the two groups and concludes that we cannot do without either. For operative purposes the cocain group is a necessity; for the after-treatment, orthoform. Spiess uses anesthesin in all minor injuries, in painful surgical dressings, in painful affections of the skin or mucous membrane when the diseased nerve endings can be reached by the agent. In whooping cough and acute coryza he considers it almost a specific. [E.L.]

Treatment of Chronic Diarrhea with Insufficiency of the Gastric Juice.—Soupault⁴ states that in certain cases of

¹ Gazette Medicale de Paris, November 22, 1902.

² Chicago Medical Recorder, December 15, 1902.

³ Gazette Medicale de Paris, December 13, 1902.

¹ Journal des Praticiens, Vol. xvi, No. 22, 1902, p. 350.

² Bulletin Général de Thérapeutique, Vol. cxliv, No. 13, 1902, p. 507.

³ Münchener medizinische Wochenschrift, September 30, 1902.

⁴ Bulletin Général de Thérapeutique, Vol. cxliv, No. 9, 1902, p. 351.

diarrhea, due to deficiency in the gastric digestion, a rapid amelioration and even complete cure may be obtained by the administration of hydrochloric acid, as follows:

- Hydrochloric acid 6 to 8 grams (1½ to 2 drams)
- Syrup of lemon 150 grams (5 ounces)
- Distilled water 1 liter (1 quart)

A large glass of this should be drunk during each meal. Patients may drink it pure or diluted with an equal amount of water. [L.F.A.]

Strophanthus and Camphor in the Treatment of Acute Myocarditis.—Lemoine¹ prefers strophanthus in the treatment of acute myocarditis when it is necessary to support a failing heart. He usually prescribes it in the following way:

- Extract of strophanthus005 gram (½ grain)
- Extract of triticum { enough
- Syrup of acacia { to make } . 1 pill

One pill morning and evening. Sometimes three pills may be taken, rarely four, and this number should not be exceeded. In cases of collapse, strophanthus must be associated with a rapidly diffusible stimulant. Under these circumstances 16 to 30 minims of ether may be injected subcutaneously, or the following prescription may be used:

- Camphor05 gram (7½ grains)
- Ether
- Distilled water } of each 4 grams (1 dram)

Fifteen to 45 minims of this solution may be injected subcutaneously in 24 hours. [L.F.A.] [Camphor solution, 1:10, in oil or ether, is the best cardiac stimulant now at our command. A syringeful (say 20 minims) may be given hypodermically and repeated as needed. s.s.c.]

Treatment of Chronic Diarrhea.—Lyon² directs attention to a proper diet in chronic diarrhea, to the gastric and intestinal medication, and to the treatment of the general condition of the patient. When there is lenteric diarrhea the food must be as easily digestible as possible; in cases in which there is a deficiency in the secretion of pepsin the food should consist of pure milk and of starchy vegetables prepared with milk. If there is hypopepsia accompanied with dilation and active fermentation it is first necessary to perform lavage of the stomach several times with boiled water in order that the milk will be tolerated. In cases of hypopepsia, without dilation and with decreased gastric secretion, kephyr is preferred to milk because it stimulates secretion and increases the acidity of the gastric juice. The gastric treatment comprises measures which will stimulate the remaining healthy glands of the mucous membrane of the stomach and which will combat fermentation. The first indication may be met by the administration of 2 grams (30 grains) of sodium phosphate in a half glass of hot water or hot vichy water before breakfast, or the following prescription may be used:

- Sodium chlorate 10 grams (2½ drams)
- Syrup of belladonna 30 grams (1 ounce)
- Distilled water 120 grams (4 ounces)

One dessertspoonful before meals.

Small doses of sodium bicarbonate may also be given before meals. Massage of the stomach has given good results; it acts as a tonic to the muscles of the stomach, decreases stasis which is a persistent cause of fermentation, and aids in the propulsion of food through the alimentary canal. [L.F.A.]

Treatment of Rheumatic Endocarditis.—Huchard³ reviews the treatment of rheumatic endocarditis and concludes that from the beginning of an attack of acute articular rheumatism, when the endocarditis in its very first stage is unrecognized and without waiting for the appearance of inflammatory endocarditis, sodium salicylate should be given promptly in doses varying from 4 to 8 grams (1 to 2 drams) for adults, and from 3 to 5 drams (45 to 75 grains) for children. By this means he believes that the development of rheumatic endocarditis and the later lesions of the valvular orifices may be prevented. When the endocarditis has already begun and is of recent origin, the employment of the iodids and mineral waters may result in a definite cure. Chronic endocarditis, of one or two

years' standing, should receive the usual treatment for valvular disease of the heart. Careful attention to the diet is imperative. Digitalis and quirin may be used as indicated. [L.F.A.]

The Toxic Varieties of the Family Rhus.—Schwalbe¹ has made microscopic examinations of members belonging to the rhus family, and reports that the oil which is the active poisonous principle of the plant is contained in canals throughout the entire plant, the roots, stems, leaves, etc., being traversed by them. Straight and curved hairs are connected with these canals, and in them the oil is seen as yellow globules and in clumps. The hairs are found on the under surface of the leaves; the stems are surrounded by them. As remedies for the poison he advises repeated applications of a ¼-1% solution of potassium carbonate or weak solution of ammonia. [E.L.]

Treatment of Alopecia.—Gastou² favors the following treatment of alopecia: 1. Diseased areas should be isolated and circumscribed by epilation; to facilitate cure the parts should be stimulated. Infectious zones, dental lesions (Jacquet), and organic or visceral disturbances should be sought and treated. If the alopecia is limited, or if there are multiple areas, epilation should be practised around each. 2. The treatment consists of daily frictions with a pledget of cotton dipped in

- Carbolic acid 4 grams (1 dram)
- Acetic acid 50 drops
- Glycerin } of each 60 cc. (2 ounces)
- Alcohol }

The area is then covered with

- Salol 1 gram (15 grains)
- Vaselin 19 grams (5 drams)

Wash the hairy skin with Van Swieten's solution.

3. When the alopecia persists alternate Van Swieten's solution with one of the following stimulating lotions:

- Chloral 1 gram (15 grains)
- Camphorated alcohol 180 cc. (6 ounces)
- Spirit of turpentine 15 cc. (4 drams)

or,

- Chloral 1 gram (15 grains)
- Corrosive sublimate2 gram (3 grains)
- Spirit of turpentine 15 cc. (4 drams)
- Compound spirit of turpentine 30 cc. (1 ounce)
- Camphorated alcohol 150 cc. (5 ounces)

In case of dry seborrhea the following may be applied on and around the diseased areas:

- Sublimed sulfur 3 grams (45 grains)
- Balsam of Peru 15 grams (4 drams)
- Vaselin 15 grams (4 drams)

In case of oily seborrhea:

- Salicylic acid } of each 1 gram (15 grains)
- Turpeth }
- Styrax ointment 10 grams (2.5 drams)
- Balsam of Peru 31 grams (1 ounce)
- Vaselin 19 grams (5 drams)

Every six or eight days the surface may be rubbed with a cotton tampon dipped lightly in

- Carbolic acid 8 grams (2 drams)
- Glycerin or alcohol 15 drops

This should be wiped off immediately afterward and the application should be made only by the physician and never when there is redness, oozing or vesication. [L.F.A.]

FORMULAS, ORIGINAL AND SELECTED.

Hypodermic Injection for Syphilis.—

- Mercury biniodid 0.4 gram (7 gr.)
- Potassium iodid 0.5 gram (8 gr.)
- Sodium phosphate 1 gram (15 gr.)
- Normal saline solution, sufficient to make 50 cc. (1½ oz.)

One cubic centimeter of this solution contains one centigram of biniodid of mercury. [H.C.W.]

For Exophthalmic Goiter.—

- Desiccated adrenal substance3 gram (5 grs.)
- Desiccated thymus substance3 gram (5 grs.)

Mix. Make a compressed tablet, which is to be allowed to dissolve slowly in the mouth; or encapsulate dry and give with water. This dose is to be given twice daily at first and increased according to effect. [s.s.c.]

¹ Journal Médical de Bruxelles, Vol. vii, No. 39, 1902, p. 622.
² Le Mois Thérapeutique, Vol. iii, No. 4, 1902, p. 44.
³ Journal des Praticiens, Vol. xvi, No. 41, 1902, p. 641.

¹ Münchener medicinische Wochenschrift, September 30, 1902.
² Journal des Praticiens, Vol. xvi, No. 13, 1902, p. 360.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended January 10, 1903:

SMALLPOX—UNITED STATES.			Cases	Deaths
California:	Sacramento.....	Dec. 20-27.....	1	
	San Francisco.....	Dec. 21-28.....	12	
Colorado:	Denver.....	Dec. 20-27.....	3	
Illinois:	Chicago.....	Dec. 27-Jan. 3.....	6	
Indiana:	Evansville.....	Dec. 27-Jan. 3.....	1	1
	South Bend.....	Dec. 27-Jan. 3.....	1	
Maine:	Biddeford.....	Dec. 27-Jan. 3.....	26	
Maryland:	Baltimore.....	Dec. 27-Jan. 3.....	1	
Massachusetts:	Boston.....	Dec. 27-Jan. 3.....	20	4
	Cambridge.....	Dec. 27-Jan. 3.....	5	
	Chelsea.....	Dec. 26-Jan. 2.....	1	
	Fall River.....	Dec. 27-Jan. 3.....	3	
	Lawrence.....	Dec. 27-Jan. 3.....	1	
Michigan:	Grand Rapids.....	Dec. 27-Jan. 3.....	7	
Nebraska:	Omaha.....	Dec. 27-Jan. 3.....	3	
New Hampshire:	Manchester.....	Dec. 27-Jan. 3.....	8	
	Nashua.....	Dec. 27-Jan. 3.....	2	
New Jersey:	Camden.....	Dec. 27-Jan. 3.....	3	
New York:	Buffalo.....	Dec. 27-Jan. 3.....	1	
	New York.....	Dec. 27-Jan. 3.....	4	
North Carolina:	Charlotte.....	Dec. 1-31.....	126	21
Ohio:	Cincinnati.....	Dec. 26-Jan. 2.....	7	1
	Cleveland.....	Dec. 27-Jan. 3.....	7	1
	Dayton.....	Dec. 27-Jan. 3.....	10	
Pennsylvania:	Altoona.....	Dec. 27-Jan. 3.....	3	
	Erie.....	Dec. 27-Jan. 3.....	5	
	Philadelphia.....	Dec. 27-Jan. 3.....	15	1
	Pittsburg.....	Dec. 27-Jan. 3.....	16	7
	Williamsport.....	Dec. 27-Jan. 3.....	1	
Rhode Island:	Newport.....	Dec. 27-Jan. 3.....	1	1
	Warwick.....	Dec. 24-31.....	4	
South Carolina:	Charleston.....	Dec. 27-Jan. 3.....	4	
Tennessee:	Memphis.....	Dec. 27-Jan. 3.....	4	
Wisconsin:	Green Bay.....	Dec. 23-Jan. 4.....	2	
	Milwaukee.....	Dec. 27-Jan. 3.....	4	
SMALLPOX—FOREIGN.				
Argentina:	Buenos Ayres.....	Oct. 1-31.....	12	
Belgium:	Ghent.....	Nov. 8-15.....	1	
	Ghent.....	Dec. 6-13.....	2	
Brazil:	Bahia.....	Nov. 29-Dec. 13.....	12	
Canada:	Quebec.....	Dec. 20-27.....	2	
Ecuador:	Quayaquil.....	Dec. 13-20.....		3
France:	Marseilles.....	Nov. 1-30.....		37
Great Britain:	Leeds.....	Dec. 13-20.....	11	
	Liverpool.....	Dec. 13-20.....	56	
	London.....	Dec. 6-13.....	1	
	Manchester.....	Dec. 6-13.....	3	
	Palermo.....	Dec. 6-20.....	25	
Italy:	City of Mexico.....	Dec. 14-23.....	4	1
Mexico:	Moscow.....	Nov. 20-Dec. 6.....	4	
Russia:	St. Petersburg.....	Dec. 6-13.....	16	3
Turkey:	Constantinople.....	Dec. 7-14.....	1	
YELLOW FEVER.				
Colombia:	Panama.....	Dec. 22-29.....	4	
Ecuador:	Guayaquil.....	Dec. 13-20.....		12
Mexico:	Tampico.....	Dec. 20-27.....		14
	Vera Cruz.....	Dec. 20-27.....	14	4
CHOLERA—INSULAR.				
Philippine Islands:	Manila.....	Nov. 2-15.....	184	124
	Provinces.....	Nov. 1-15.....	232	170
CHOLERA—FOREIGN.				
Egypt:	Alexandria.....	Dec. 1-13.....	82	64
PLAGUE—UNITED STATES.				
California:	San Francisco.....	Dec. 11.....	1	1
PLAGUE—FOREIGN.				
Mexico:	Ensenada.....	Dec. 31.....	Officially reported.	
	Mazatlan.....	Dec. 31.....	Officially reported.	

Changes in the Medical Corps of the U. S. Army for the week ended January 10, 1903:

ARWINE, JAMES T., contract surgeon, is granted leave for twenty days.
 BAKER, CHARLES L., contract surgeon, is granted leave for one month.
 RUSSELL, First Lieutenant FREDERICK F., assistant surgeon, leave granted September 29 is extended fourteen days.
 ADAIR, GEORGE F., contract surgeon, will proceed to Fort Morgan for temporary duty, relieving Captain Henry Page, assistant surgeon, who will thereupon return to his proper station, Fort Monroe.
 WALL, FRANCIS M., contract surgeon, is granted leave for one month with permission to apply for an extension of one month.
 ROUSSEAU, ZOTIQUE, contract surgeon, now at Watervliet Arsenal, N. Y., will report to the commanding officer of that arsenal for duty.
 THOMPSON, LOUIS A., contract surgeon, is relieved from duty at Fort Thomas and will proceed to his home, Dayton, O., for annulment of contract.
 O'BRIEN, PATRICK, hospital steward, now at San Francisco, Cal., will report at Fort Miley for duty at that post.

TEMPLE, OSCAR F., hospital steward, now at San Francisco, Cal., having relinquished the unexpired portion of furlough granted him from the division of the Philippines, is relieved from duty at Fort McDowell, and will be sent to Fort Ethan Allen, to relieve Hospital Steward William Lyon. Steward Lyon will proceed to Manila, P. I., for assignment to duty.

The following changes in the stations and duties of officers are ordered: First Lieutenant John J. Kelly, assistant surgeon, is relieved from duty at Fort Porter, and will proceed to Jackson Barracks for duty to relieve Captain Henry C. Fisher, assistant surgeon. Captain Fisher will proceed to Baltimore, Md., and assume the duties of attending surgeon and examiner of the recruits in that city.

BURFORD, OLIVER H., contract surgeon, will proceed to Jackson Barracks and report to Captain Henry C. Fisher, assistant surgeon, for duty.

HUBBARD, WILLIAM H., hospital steward, is relieved from further duty at Benicia Barracks, and will proceed to Manila, P. I., for assignment to duty.

BROWN, Colonel JUSTUS M., assistant surgeon, leave granted September 16, is extended to and include February 13.

VOSE, First Lieutenant WILLIAM E., assistant surgeon, is relieved from further duty at Columbia Arsenal, Columbia, Tenn., and will proceed to Fort Logan H. Roots.

VAN DEUSEN, First Lieutenant JAMES W., assistant surgeon, leave granted November 29 is extended one month.

LYSTER, First Lieutenant WILLIAM J. L., assistant surgeon, now at Fort McDowell, will report to the commanding officer of that post for duty.

CHAMBERLAIN, GEORGE E., contract surgeon, is granted leave for one month.

BENTLEY, CARLE E., contract surgeon, will upon being relieved from duty at Fort Logan H. Roots, proceed to his home for annulment of contract. Leave for one month is granted Contract Surgeon Carle E. Bentley.

BJORCK, NELS J., hospital steward, Manila, P. I., is relieved from further duty in the division of the Philippines and will proceed to San Francisco, Cal., and report to the commanding general department of California.

Changes in the Medical Corps of the U. S. Navy for the week ended January 10, 1903:

BIGERT, E. S., medical director, retired, detached from the Naval Recruiting Station, New York, and to continue duty at Marine Recruiting Station, New York—January 3.

WOOLVERTON, T., medical inspector, retired, ordered to the Naval Recruiting Station, New York—January 3.

HOLLOWAY, J. H., assistant surgeon, commissioned assistant surgeon from September 26, 1902—January 3.

GUTHRIE, J. A., passed assistant surgeon, detached from the Yorktown and ordered to the Vicksburg—January 5.

OHNSORCK, K., assistant surgeon, detached from the Vicksburg and ordered to the Yorktown—January 5.

PECK, A. E., assistant surgeon, detached from the Annapolis and ordered to the Naval Station, Cavite, P. I.—January 5.

WEBB, U. R., assistant surgeon, detached from the Naval Station, Cavite, P. I., and ordered to the Annapolis—January 5.

STEPHENSON, B. F., medical inspector, retired from active service on account of disabilities incurred in the line of duty January 3, 1903, and to continue on duty at Naval Hospital, Portsmouth, N. H.—January 7.

DICKSON, S. H., medical inspector, detached from the Iowa and ordered to the Newark as fleet surgeon of the South Atlantic Station—January 7.

HAAS, H. H., passed assistant surgeon, detached from the Montgomery and ordered to the Prairie—January 8.

PAGE, J. E., passed assistant surgeon, detached from the Newark and ordered to the Montgomery—January 8.

Changes in the Public Health and Marine-Hospital Service for the week ended January 8, 1903:

BAILHACHE, PRESTON H., surgeon, granted leave of absence on account of sickness for thirty days from January 6—January 8, 1903.

CARTER, H. R., surgeon, leave of absence for three days from January 5, 1903, under paragraph 179 of the regulations.

GREENE, J. B., passed assistant surgeon, relieved from duty at New York (Stapleton)—December 31, 1902.

GRUBBS, S. B., passed assistant surgeon, to proceed to Guaymas, Mexico, for special temporary duty—January 8, 1903.

PARKER, H. B., assistant surgeon, to report to chairman of board of examiners at Washington, D. C., January 12, 1903, to determine his fitness for promotion to the grade of passed assistant surgeon—January 5, 1903.

VON EZDORF, R. H., assistant surgeon, to report to chairman of board of examiners at Washington, D. C., January 12, 1903, to determine his fitness for promotion to the grade of passed assistant surgeon—January 5, 1903.

ANDERSON, J. F., assistant surgeon, to report to chairman of board of examiners at Washington, D. C., January 12, 1903, to determine his fitness for promotion to the grade of passed assistant surgeon—January 5, 1903.

ROBINSON, D. E., assistant surgeon, relieved from duty at Seattle, Washington, and special temporary duty at Port Townsend Quarantine and assigned to duty at Port Townsend Quarantine—December 31, 1902.

KEYES, J. M., acting assistant surgeon, granted leave of absence for thirty days from January 5—December 24, 1902.

SEMS, F. F., acting assistant surgeon, granted leave of absence, on account of sickness, for thirty days from January 1, 1903—January 5, 1903.

BROWN, F. L., pharmacist, granted leave of absence for ten days from December 25—December 27, 1902.

SCHLAAR, W. F., pharmacist, relieved from duty at Washington, D. C., and directed to proceed to Boston (Chelsea), Mass., and report to medical officer in command for duty and assignment to quarters—January 6, 1903.

Resignation.

KEYES, J. M., acting assistant surgeon, resigned to take effect February 3, 1903.

American Medicine

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National gratitude to medical scientists is a duty which every physician should lose no opportunity of encouraging. We are indeed naturally prone to be glad if the popular feeling toward us is not one of hatred, and if it is only one of indifference—not a medical name appears in the so-called Hall of Fame—we pass on in wonder if the world will ever know or care for its greatest benefactors. Any one of a half dozen medical discoveries made by American medical men are as valuable to humanity as those commemorated in any monument or hall of fame. A bill has been introduced in the Senate and House at Washington providing for a pension of \$4,000 a year for the widow of Dr. Reed. It is not necessary to tell members of the profession, and especially the readers of *American Medicine*, of Dr. Reed's services. There can be but one opinion, that they have been such as to call for national recognition. That the amount of the proposed pension is by no means large when all the circumstances are considered will be admitted. We beg every physician to use all his influence, direct and indirect, with his senator and representative at Washington, to secure the passage of the Act, and to prevent any cutting down of the amount of the pension. There are a thousand other methods of preventing waste of the public funds that might well be instituted. Ingratitude for unselfish scientific medical discovery is one of the most deplorable and most expensive of our national sins.

The shortening of college courses as related to preparation for the study of medicine is a subject of very present interest to American educators. In this connection recognition has undoubtedly been taken of a fact referred to some years ago by President Gilman in his discussion of university problems, viz., that the distinctive college has been disprized by the modern high school. Any rearrangement of requirements for collegiate degrees or for entrance into professional studies must take account of the fact that our best secondary schools are to a large extent meeting "the old idea of a liberal education intermediate between that of the preparatory school and that of the professional or technical school." Graduates of the highest institutions of this country and Europe now fill instructor's chairs in the secondary schools of our great cities and they have been quick to seize upon every foot of ground abandoned or

neglected by the colleges until the latter in their zeal to attain university rank find themselves overlapping at each end of their course. There have arisen in many communities great city colleges, sometimes so-called, as in New York and in Baltimore; sometimes, as in Philadelphia, still retaining the name of high school. There has been very naturally an extension of good teaching and modern methods from the universities into the secondary schools and the proposition to shorten the college course is but an attempt to readjust curriculums to a new order of things. The important point to be considered after all is that the student shall have formed habits of attention, memory, discrimination, classification, and judgment, and such habits having been formed the college need not hesitate to shorten the way leading to higher and professional studies.

Surgery in Remote Country Districts.—In the city, with numerous hospitals, surgical assistants, trained nurses, and all the armamentarium which the modern hospital affords we are prone to assume that only with such conveniences can clean surgery be done; in fact, that no surgery is being done save in well appointed places. That the facilities which hospitals and trained assistants afford give us the desirable condition no one will, of course, gainsay; but that they are absolutely essential to aseptic surgery will be disputed, and correctly, by many country doctors. We forget that many parts of our country are far removed from any of the conveniences deemed necessary for successful surgical work. What shall the country physician do, called as he often is, into remote districts to find a patient desperately ill from an affliction demanding surgical interference? Distance, time, poverty, and prejudice on the part of the patient dispel all thoughts of a hospital. Illustrative of the difficulties met and the success achieved, a few words quoted from a Southern practitioner of known veracity may not prove amiss. He says:

"In modern surgery the first step in any operation is, of course, asepsis. With abundance of trained assistants and a small brigade of nurses, in a well appointed hospital it is a simple matter to be clean. But in the country, in a small farmhouse or cabin, with only surface water and kitchen utensils on the one hand, and rags, dirt, cobwebs, and a desperately ill patient on the other, what would our city surgeon and his trained assistants do? One would be safe in saying he would

be more confused and less able to apply his presumably more extensive knowledge than his country brother, who has never had the pleasure of hospital facilities nor trained help, but has invariably had to depend on such facilities as his own ingenuity could devise, and with the help of those who, perhaps, have never before seen an operation. But even under these adverse circumstances we can do clean and successful surgery, and it is being done daily by the bright, active, country doctors, and many lives are being saved."

Concerning his method of preparation and adaptation of means to an end we quote further, as follows :

"By carefully scrubbing the floor and walls with soap and water, then a strong carbolic or corrosive solution, with all furniture removed and windows open, it is possible to convert a dirty room into a place in which clean surgery can be done. Boil the necessary sheets, towels, basins, instruments, cotton, gauze, and suture and ligature material. Water previously boiled is poured while hot into clean jugs or pitchers and allowed to cool. The hands are sterilized in the usual way, and the operating table, improvised by placing a door, shutter or wide board on barrels, chairs or benches, is covered with boiled wet sheets. Small tables, benches or chairs are likewise covered and serve as a place for instruments, dressings, etc. The patient is shaved and scrubbed in the usual way, placed upon the operating table and the field of operation surrounded by boiled, though wet, towels or sheets. The instruments, dressings, ligature and suture material are covered by sterile towels. The entire time necessary for such preparation should not exceed two hours, and in very urgent cases, and with intelligent though untrained assistance may be done in half this time. Under these apparently adverse circumstances the writer has repeatedly opened up the shoulder, knee and ankle joints, the skull cavity, and the abdomen without a single instance of infection."

When we remember that such practical and successful work is being done, especially in the sparsely settled portions of country, by scores of bright, careful and energetic men, it should divest us of some of our preconceived ideas about the absolute necessity for hospital facilities in doing successful aseptic surgical work. Hospital conveniences are necessary for the refinements of surgery; but for practical, urgent, and life-saving surgery their necessity has not yet become absolute. The country doctor yet plays an important role in surgical work, and it is not probable that this will become less in the future. It is often quoted of the elder Gross that he always felt like taking off his hat in the presence of the country doctor—the broadest, most resourceful and most useful of medical men.

The Plague at San Francisco.—At a conference of health officers of many States, held at Washington this week under the presidency of Surgeon-General Wyman, the chief topic of discussion was the danger of the spread of bubonic plague throughout the United States because of the action of the State Board of Health of California and the city government of San Francisco. The whole profession and country have stood aghast at the shame and ignominy whereby the existence of plague at San Francisco has been concealed and denied. Dr. Glennon, sent to San Francisco by the Surgeon-General to investigate and report upon the facts, telegraphs that 93 cases of the disease have occurred in the city—6 in whites, 4 in Japanese, and 83 in Chinese. Of 22 dead rats found in Chinatown, 11 were infected. The following was part of a resolution passed by the conference :

"The gravity of the situation is greatly increased by the gross neglect of official duty by the State Board of Health of

California and the obstructive influence of the recent Governor of California, by the failure of the city government of San Francisco to support its city Board of Health, and by the obstacles opposed to the operations of the United States Public Health Service."

It is incomprehensible that the professional conscience and the mere self-interest of the American people should so long have permitted this criminal selfishness of a few blind and stupid people in California. Let there be a speedy end of the disgrace. If Surgeon-General Wyman has not the power, it should be supplied by the President of the United States. "The public safety is the supreme law."

Eponymic Terms in Medical Literature.—The *Spectator* has recently published some interesting communications on the need of some word to express the ever-increasing class of terms derived from surnames, *e. g.*, boycott, macadam, mackintosh, gerrymander, and an ample list of "long-tailed words in -osity and -ation" has been proposed by correspondents to supply the apparent deficiency. It is curious that no one has referred to the word *eponym*, already in our standard dictionaries, and having the exact significance desired. Man has ever sought to embalm the memory of important persons, places or things by the use of eponyms. Cities, mountains, temples, fountains, glaciers, and marine abysses all bear tribute to geographic or geologic notables. With botanists, flowers and fruits, from St. Maw's clover and timothy grass to the baldwin and shaddock have served to grace the memory of the lovers of plants. Zoologists have followed suit with Steller's rhytina and a veritable Noah's ark of other creatures whose enumeration would serve as the index of a naturalist's directory. The mineralogist is particularly prone to the use of cognomial appellations, while astronomers, chemists and electricians have given us "anthroponomatic" terms which have become so familiar as to lose the dignity of capitalization; watts, ohms, and amperes are words familiar to school boys, while faradism and galvanism crowd elbows with mesmerism, eddyism and other terms suggestive of the charlatan. The history of anatomy, physiology, pathology, and therapeutics shows every advance in knowledge to be marked by "onomataneric" terms of inestimable value to the student of medical progress, every niche in the bodily temple being occupied by the shadowy suggestion of the fathers of medicine from Fabricius and Vater to Paget and Langerhans. So far as the memory of the average medical student is concerned, the terms eustachian valve, Pacini's corpuscles or the island of Reil serve as well to fix his anatomic acquisitions as would a more strictly scientific terminology, and thus far the language of medicine offers no greater difficulties to the novice than that of the other sciences, and the attempt on the part of certain writers to eliminate altogether from medical writing the so-called aneronomatic terms is not at all likely to meet with success.

Teaching the Humanities Minus the Spirit of Humanity.—During the centuries in which the arts

and sciences lay dormant the teaching of the classics was essential to the perpetuation of the ideals and culture of Greek and Latin civilization. Latin was particularly necessary as the universal language of educated men, and through the study of the classics the lamp was kept burning in the temple of wisdom. So long as Latin served as a means for conveying a familiarity with the highest human ideals and attainments, so long as it was the accepted language of historic record and employed in the teaching of the learned professions, so long as it had to do with human nature, interests or affairs, did it as a factor in education exert humanizing influences. Gradually, however, the methods characteristic of scientific research have been adopted in the teaching of languages, and the student of Latin and Greek no longer acquires the old-fashioned familiarity with classic writers, but spends the bulk of his time in the elucidation of syntactic obscurities, a drill of undoubted value, but not because it gives any peculiar insight into human interests or affairs. The crowding of the curriculum in preparatory schools and colleges, together with other factors, has gradually brought about the fact that that Latin and Greek which affords no familiarity with classic ideals and writers represent the humanities with humanity left out. For centuries it was necessary to read Greek to get at the beautiful truths of the New Testament, but the King James version has brought the spirit of Christianity to millions and in the same way the best that classic civilization had to offer is available through translations. Latin having therefore to a very considerable extent shifted its place and purpose in education is, like Greek, rapidly giving way to studies which, if they do not hold up classic standards, do serve to bring the student into closer touch with the spirit of modern civilization. If Latin can be so taught as to make Horace and Virgil as familiar as Scott and Tennyson then we could wish every professional man a classical training. If a Latin course means but a feast of grammatical dry bones, then let the student get at more humanizing food without loss of time. There is little force in the utilitarian plea that the classics as now taught are of practical use to the physician in the understanding of medical terminology; all that he needs in this way can be secured by the perusal of books such as Goodell's "Greek in English," or even the good old "Scholar's Companion."

If the classics are to hold their own as studies preparatory to medicine they must rest their claims solely on humanistic grounds, they must stand for the good, the true, and the beautiful, as science and modern languages can place a stronger plea on the ground of practical utility.

Abandonment of Latin by Medical Writers.—The constant perusal of medical literature shows clearly that so far as an intelligent use of medical terminology goes the student of medicine needs Latin no more than he needs Arabic. To be sure, some medical writers are pleased to lard their sentences with occasional Latin phrases, but a collection of these suffices to show how few and hackneyed they are, and how little force and elegance they lend to medical writings. Most authors

are satisfied to garnish their pages with bits of such Latinity as *ante mortem, contagium vivum, habitus phthisicus, in articulo mortis, in utero, in vitro, loco dolenti, materies morbi, per os, per primam, post abortum, prime viæ* (we no longer meet with *secundæ viæ*), and *primum movens*. Others, particularly the authors of English textbooks and contributors to English journals, are fond of quoting, either in the body of the text or as chapter captions, selected aphorisms such as Galen's "*Dolor dolentibus inutile est,*" Hippocrates' "*Spasmos febris accedens solvit,*" Leibnitz's "*Natura non agit saltatim;*" that of Harvey, "*Omne vivum ex ovo,*" often occurs in Virchow's paraphrase "*Omne cellula e cellula,*" while Borelli's "*Qui bene diagnoseit bene curat,*" seems to be a favorite. None of the expressions ordinarily used would suffer in force if rendered in English, and the writers would avoid all suggestion of pedantry. We recall a former teacher whose frequent use of the expression gained him the nickname of "*pari passu*" without greatly adding to his dignity. Modern medical terminology and nomenclature augments so rapidly and presents such a hodge-podge of derivatives that only the lexicographer concerns himself with etymologic significance—to others the terms are but symbols. The advertising pages of medical journals are replete with the proprietary names of new remedies, built on the "*unecda biscuit plan,*" while eponymic terms mark the progress of medical discovery at every stage. In none of these is Latin in the least helpful.

The Profits of a Prophetess.—Mrs. Eddy, as is well known, disbelieves in the materiality of the world, and consequently in the material existence of the money of the world. It is strange therefore to find her so shrewd and careful to gather wealth, nonexistent and immaterial as it is. How much she has made by the sale of immaterial souvenir spoons we do not know, but every believer we understand has been made to buy one or two. How much she has made by the sale of her immaterial photographs one can also not estimate, nor from all the other skilfully devised methods of securing the immaterial dollars of her immaterial adherents. For three weeks' instruction her pupils have been required to give her 300 nonexistent dollars, but we do not know the number of spiritual pupils she has taught. Of one source of income, however, we can make some more definite estimate. One of the late editions of her immaterial book was numbered 220. The number is immaterial. As it is sold at an absurdly high price, high at least for other material people, the net profits on each copy cannot be much less than \$2.00. If each edition was only 1,000 copies the profits of going into the Eddyite kind of book-business have been nearly half a million of spiritual dollars! And yet Americans are said to be cunning in money matters! Mrs. Eddy has surely demonstrated that they are the most gullible of all people. African savages could not be humbugged so easily.

Ophthalmic-Oscillatory Ophthalmology for Inter-Ocular Diseases.—There lies before us a circular, noteworthy because of a number of qualities, the

linguistic and scientific being the chief. As to the last we have this statement:

"The master minds in the field of Ophthalmology, both in Europe and this country, have worked upon the theory that to stimulate the interocular circulation, rebuild the capillaries which become inactive in the interstitial tissues of the nerve papillas of the retina, nutrition would become active and the retina would again respond to the action of light."

It required 20 years for the "gentleman of high medical standing" to devise a couple of little glass cups placed over the eyes whereby the eyes are drawn outward when a vacuum (and no hyphen between those two *u*'s, nor any diereses over them!) is created, etc., and the oscillation causes a regular vibration of the optic nerve. Among other "inter-ocular diseases" we are assured that "cortical opacity of the lens are most successfully treated." Also the other inter-ocular diseases, "glaucoma, choroiditis, retinitis, atrophy"—these also "can be cured." "No one discovery since Holtzholm gave the ophthalmoscope to the medical world has ophthalmology received so valuable a discovery." U. S. Senator Money is said to endorse "this wonderful machine," and several doctors are mentioned as having been cured by it of inter-ocular diseases. Money can do wonders of course, but we fear it is powerless to change the truths of ophthalmology and of English grammar. Poor Ophthalmology! and the fame of Holtzholm! and the unprotected patients who are exhilarated!

The coinage of new words and new degrees continues to amaze the poor lexicographer. He can hardly keep step with the advance guard of scientific workers, but he cannot come within sight or sound, at least of understanding, of those of the cranks. It is a strange delusion of the ignorant that by the use of ill-formed, unnecessary, nonunderstandable, and highfalutin words they can make people still more ignorant than themselves believe that something great and novel and mysterious is going on or to be bought. Circulars lie before us as we write of a strange institution which promises to teach its students "mentology" for \$50. The "first section" of "mentalopathy" will be taught, "including all laboratory expenses," for another \$50, and the "second section" for a third \$50. "Psycho-theology" requires another \$50, and so on. For degrees and diplomas in all the departments, \$300 is asked. These degrees and diplomas are, in mentalopathy, "Men. B," and "Men. D." "Log." is that for "Logic;" in Mentalology, M.Ph.D.; in "psycho-theology," P.T.D.; in "ethics," that of E.D. When was the original degree of D.F. conferred?

Invention and physiology are often intimately related and interdependent, a fact that may be overlooked, and that is illustrated by the labor and ingenuity expended in trying to shorten the work of nerve and hand in telegraphing. An operator who sends 15,000 words in 8 hours, makes about 180,000 depressions and relaxations of the key. The nerve impulses are by no means limited to these 360,000 distinct movements as one who has studied physiology at once understands. The result is telegraphers' paralysis, and many devices

to prevent it. The dot and dash, each with its separate double movement, have not been shortened or mechanized until recently. The "autoplex" is said to reduce the number of depressions of the key to about one-third the number required without it. "Mississippi" by the old way required 31 depressions, which by the autoplex are reduced to 12. The method by which this is brought about is by means of a lever, which if thrown to the right makes dots mechanically until thrown to the left, when it makes dashes. It is said that an operator learns to use it expertly within a week.

The Pride in Old Age.—In the thirty-eighth annual report of the Home for Aged and Infirm Colored People of Philadelphia there is an account of one of the inmates, Mary McDonald, who "if so," must be over 131 years of age. The only proof of the "if so" is that the woman remembers persons living and events taking place in 1777 and 1778. We have entire sympathy for the cause of the care of the aged and infirm, but this must not be allowed to influence the statistics of centenarians. It is very doubtful if anybody has ever lived 131 years, and when the sole proof of such a claim is the memory of events transpiring and persons living over 100 years ago, there is no dependence whatever to be placed upon the report. Psychologists know how readily the mind transforms the record of things told by others into memory of things experienced by self. All who have carefully attended to their subtle mental processes have probably detected the unconscious method of the mind whereby "what elders have said becomes what I have seen." This habit may become almost the single prop of self-esteem in old age.

The etiology and cure of cancer is made perfectly clear by the following communication to the president of a medical school:

Dec 31—1902 (Happy new year)
—, N. Y. — R. F. D.

Dear Sir:—I see by the *N Y Herald* you dont know what causes a cancer or its cure. I think I can explain it so you can understand, as it is quite necessary doctors should know how to cure every part of the human system is why I write this, though our lives are all done "from before the foundation of the earth." First a vein is bursted by some cause, bruise or pressure, and then the blood is decomposed (killed) in that spot, and other blood like bees in a hive goes to see what is the matter and while trying to heal the spot become poisoned by the dead blood and so the cancer grows like a boil and poisons the whole body and life ceases. Now to cure it is to bind on a poultice of clay, that kills the bachali of all skin disesas even to leprocy or small pox, It draws the swelling all down so a core can be taken out. Tea made of Chinese night soil can poison a person when made of scroffula, leprosy or any other disesase though doctors preachers undertakers and lawyers get a job Please answer

Medical Diplomas Fraudulently Obtained.—Professor James B. Angell, president of the University of Michigan, is credited with the following statement in his annual report. "We have for some years had reason to suspect that diplomas, especially our medical diplomas, had occasionally been fraudulently obtained. It happens, of course, that now and then a diploma is either lost in the transportation of baggage or destroyed by fire. For some years we issued a duplicate diploma on the simple request by letter of the holder of the original. Of late years we have required the applicant to send us an affidavit, swearing to the loss of the diploma and to the circumstances of the loss. We write the word 'duplicate' in red ink on the new diploma. It has been found even these precautions do not furnish an absolute safeguard against fraud."

BOOK REVIEWS

Practical Diagnosis: The Use of Symptoms and Signs in the Diagnosis of Disease.—By HOBART AMORY HARE, M.D., B.Sc. Lea Brothers & Co., Philadelphia and New York.

Hare's Practical Diagnosis needs no introduction to the profession. It should be stated, however, that the fourth edition has been exhausted and the fifth edition, much amplified, thoroughly revised and up to date, has appeared. The author's plan of discussion and elucidation is one which will appeal to the student and busy practitioner. The book is divided into chapters, as follows: Feet and Legs, Hemiplegia, The Eye, The Blood, The Thorax and its Viscera, etc. Under each of these is discussed all the pathologic conditions which are likely to affect that particular part of the body. Thus necessary information, so far as diagnosis is concerned, may be had without exhaustive and perplexing research. To quote the author's own words: "The present edition differs materially from its predecessors in the fact that its scope has been broadened to include not only the symptoms, discussed in the manner just described, but also the physical signs and clinical tests which experience has proved reliable." It will be seen, therefore, that the work is not only revised, but that it is amplified advantageously. It contains 236 illustrations and 25 colored plates, is written after the author's usual clearness, and is issued synchronously with the ninth edition of his Textbook of Practical Therapeutics, to which it is a companion volume.

The International Textbook of Surgery.—By American and British Authors. Edited by J. COLLINS WARREN and A. PEARCE GOULD. W. B. Saunders & Co., Philadelphia.

To surgeons it need hardly be recalled that the first edition of this splendid and exhaustive work, consisting of two volumes, one devoted to General Surgery and the other to Regional Surgery, was issued but two years ago. The work deservedly attracted wide and favorable attention, coming as it did from men in both England and America who have achieved an eminence which commands authority. Further commentary is unnecessary, except to state that the editors, conscious of the rapid progress made in surgery, particularly in military surgery, determined to bring the work up to the very latest findings. To this end, therefore, the chapters pertaining to military and naval surgery have been thoroughly revised and rewritten; likewise the chapters having to do with the lymphatic system; the surgery of the kidneys, the surgery of the spleen, etc. The whole work has been carefully revised, not only by the individual and special authors, but by the editors as well. In the present edition the volume on General Surgery has 461 illustrations and nine full-page colored plates, and the volume devoted to Regional Surgery has 499 illustrations and eight full-page colored plates. This valuable contribution to surgical literature and science should have a place in the library of every one engaged in surgical work.

Cellular Toxins or the Chemical Factors in the Causation of Disease.—By VICTOR C. VAUGHAN, M.D., LL.D., and FREDERICK G. NOVY. Lea Brothers & Company. Octavo; pp. 495. Cloth, \$3.00 net.

The first edition of this work appeared 14 years ago under the title "Ptomaines and Leukomains, or Putrefaction and Physiological Alkaloids." The advance in knowledge regarding the synthetic substances produced by microorganisms has been such as to render the title of former editions inappropriate. Moreover, the text has been for the most part rewritten and several new chapters added, making the work an authoritative treatise, including all advances made in the knowledge of the subject down to the close of the year 1901. The chapter on the Specific Precipitins and that on Lysins are particularly valuable and alone worth the price of the book to all practitioners who wish to obtain a clear comprehension of specific serums, of agglutination and of hemolytic and bacteriolytic phenomena. We know of no other work in English in which is to be found a more thorough presentation of the sub-

ject of Food Poisoning than that presented in Chapter X, under which, adopting the terminology of Husemann, the authors include the poisoning from mussels (mytilotoxism), that from fish (ichthyotoxism), that from the flesh of diseased animals (kretotoxism), that from cheese (tyrotoxism), that from milk (galactotoxism), and that from vegetable foods infected with molds and bacteria (sitotoxism), including lathyrism and maldism. The latter term refers to what is ordinarily known as pellagra, a disease prevalent in Southern Europe, and which becomes in certain localities a national calamity, 56,000 cases having occurred in Lombardy alone in a single year. The authors offer no positive information concerning the poisonous substance which causes this disease, but a recent discovery is that the poison is inherent in the spores of the common green mold *Penicillium glaucum*. The chapters on the examination of Poisonous Foods, on Methods of Extracting Ptomaines, on the Importance of Bacterial Products to the Toxicologist and on the Chemistry of Ptomaines and Leukomains are perhaps of greater interest to the physiologic chemist than to the general practitioner; but the final chapter, on Autogenous Diseases, though brief, is suggestive as to the absorption of poisonous excretory proteids by the intestinal walls, especially in infants, as to the action of certain secretions and excretions on tissues with which they have no normal relation, as, for example, that of normal bile on the pancreas. Here also is discussed the subject of diseases due to abnormality in those organs whose function is to prevent the passage of certain substances into the general circulation, as that of the thyroid in preventing that form of mucinemia known as myxedema.

The Work of the Digestive Glands.—Lectures by Professor J. P. PAWLOW, Director of the Physiologic Department of the Institute for Experimental Medicine. Translated into English by W. H. THOMPSON, M.D., Dublin. (Sole authorized English translation.) Philadelphia: J. B. Lippincott Company, 1902. Price, \$2.00.

This book is an English translation of the work first published in the Russian language in 1897. It also includes the later work of Pawlow on the physiology of the bile, succus entericus, and salivary secretion. This, with more recent notes by the author, brings the work up to date. The book consists of nine lectures detailing the results of experiments by Pawlow and his associates regarding the excitation of the digestive glands, their action, interrelation, etc. The work of Lecture IX, dealing with the physiology of the bile and the succus entericus, was done five years later than the preceding. This last chapter also considers the pathology and experimental therapeutics of digestion. The methods of experimentation are given and their accuracy discussed. This is a valuable book; one that merits careful reading by the practising physician as well as by the experimental physiologist. The efficient translation makes the book very readable.

A Treatise on the Diseases of the Eye, Nose, Throat, and Ear: For Students and Practitioners.—By Various authors. Edited by WILLIAM CAMPBELL POSEY, A.B., M.D., and JONATHAN WRIGHT, M.D. Lea Brothers & Company, 1902.

This massive volume of over 1,200 large octavo pages is the joint product of 27 well-known authors, and it is safe to assume that no important thought in the three specialties is omitted. The rational arrangement and general uniformity of conciseness, thoroughness, practicality, and simplicity of language, as well as the absence of overlapping, bear witness to the efficient editorial supervision. The contributors are eminently practical and progressive practitioners and an international aspect is given to the work by the inclusion of several writers from Great Britain and Canada. In the main, a conservative attitude has been maintained and the needs of the general practitioner rather than the ultra-specialist and theorist have been kept in mind. Worthy of especial mention are the chapters The Eye in Relation to General Health, The Histologic Pathology of Diseases of the Nose and Throat, and Purulent Inflammation of the Middle Ear. The sections on Diseases of the Eye occupies 666 pages, that on Nose and Throat 384 pages,

and on Diseases of the Ear 124 pages. The work is well printed on good paper and is profusely illustrated with 650 engravings and 35 plates in colors and monochromes, not all of which are noteworthy for excellence. A comprehensive index is included. The only really adverse criticism to be made is the questionable taste of the publishers in producing such an unnecessarily large and unwieldy volume by combining under one cover complete treatises on specialties that are now commonly disassociated in colleges, clinics, societies, periodicals, and practice. Literary productions on the ear, nose, and throat may be combined with good reason and the interrelation of the subjects is plainly evident, but works on the eye should be published separately, notwithstanding commercial reasons for combination.

The Elements of Bacteriologic Technic.—A Laboratory Guide for the Medical, Dental, and Technical Student. By J. W. H. EYRE, M.D. W. B. Saunders & Co., Philadelphia and London, 1902.

We have only words of commendation for this book. When one refers to it for a certain technic, he finds it stated concisely and clearly, and not hidden in a mass of uncertain and antiquated instructions. The illustrations are numerous and instructive. It is difficult to select chapters of special merit, but those on staining methods, experimental inoculation of animals, and bacteriologic analyses are models of conciseness and definite information. The terminology of Chester has been adopted throughout. We can recommend this book to students as one that supplements the usually scanty details of technic that are given in larger and more imposing works of this class. The typography and binding are all that could be desired.

Little Masterpieces of Science.—Edited by GEORGE ILES. Doubleday, Page & Co., New York.

These six little volumes, admirably selected and edited, are made up of essays by the best writers in six divisions of scientific work—the skies and earth, invention and discovery, natural history, exploration, health and healing, and mental science. The medical volume contains articles on the history of the Discovery of Anesthesia, by Sir James Paget; Jenner and Pasteur, by Sir J. R. Bennett; Pasteur and His Work, by Geddes and Thomson; Tuberculosis and its Prevention, by Dr. Prudden; Malaria and Mosquitos, by Dr. Sternberg; the Art of Prolonging Life, by Dr. Robson Roose; Natural Life and Death, by Dr. B. W. Richardson; Care of the Eyes, by Buel P. Colton; and The Progress of Medicine in the Nineteenth Century, by Dr. Billings.

How to Succeed in the Practice of Medicine.—By JOSEPH McDOWELL MATTHEWS, M.D., LL.D. John P. Morton & Co., Louisville, Ky.

This little volume of over 200 pages contains a great fund of practical hints and suggestions from one who speaks from the standpoint of experience and authority. Some idea of the scope of subjects considered may be had from a mere mention of the themes discussed. They are: Requirements for entering the medical profession; location; marriage; ethics; the first year; specialties in medicine; the business side of it; the young versus the old doctor; the country versus the city doctor; art in medicine; some rare types you will meet; lights and shadows. Every young man beginning the practice of medicine should read this book carefully, for it is not only entertaining but it furnishes suggestions, warnings and directions too valuable to be missed. Every physician, young and old, should read especially the chapter devoted to "The Business Side of It;" and many a layman would find both pleasure and profit in perusing its pages. Doctor Matthews has rendered a distinct service to the profession and credit to himself in producing this book.

Regional and Minor Surgery.—By GEORGE GRAY VAN SCHAIK, M.D. The International Journal of Surgery Company, New York, N. Y.

It is soon apparent to him who begins the general practice of medicine that one of the branches grossly neglected during his course of instruction is so-called minor surgery; and it is

this very work which the general practitioner will be called upon to perform. The little volume written by Dr. Van Schaick on this subject is well adapted to the needs of the busy general practitioner. The author has wisely avoided the subjects of a technical nature and has confined himself to the ordinary but scientific treatment of such subjects as are usually grouped under the head of the title. The work is a grouping of discussions under headings such as The Hips, The Nose, The Hand and Fingers, etc., etc., and under each heading are discussed the various surgical affections to which the member is liable, together with the proper treatment of the same. The work is well written, profusely illustrated, and merits a place in our surgical literature.

BOOKS RECEIVED.

[Prompt acknowledgment of books received will be made in this column, and from time to time critical reviews will be made of those of interest to our readers.]

Botany and Pharmacognosy.—By HENRY KRAEMER, Ph.D., Ph.D., Professor of Botany and Pharmacognosy, and Director of the Microscopical Laboratory in the Philadelphia College of Pharmacy. Illustrated with plates from original drawings by the author. Printer, Edward Stern & Co., Inc., Philadelphia.

Therapeutics of Dry Hot Air.—By CLARENCE EDWARD SKINNER, M.D., LL.D., New Haven, Conn., Professor of Thermotherapy in the New York School of Physical Therapeutics, Editor of the Department of Thermotherapy in the Journal of Advanced Therapeutics, Physician in Charge of the Newhope Hot Air Sanitarium, New Haven, Conn., Member of the American Medical Association, American Electro Therapeutic Association, American Röntgen Ray Society, American Association for the Advancement of Science, Yale Medical Alumni Association, etc. 200 pages, substantially bound in cloth. Price \$2.00. A. L. Chatterton & Co., New York.

System of Physiologic Therapeutics: A practical exposition of the methods, other than drug-giving, useful in the prevention of disease and in the treatment of the sick.—Edited by SOLOMON SOLIS COHEN, A.M., M.D., Senior Assistant Professor of Clinical Medicine in Jefferson Medical College, Physician to the Jefferson Medical College Hospital, and to the Philadelphia, Jewish, and Rush Hospitals, etc. Vol. V. Prophylaxis—Personal Hygiene—Civic Hygiene—Care of the Sick.—By JOSEPH MCFARLAND, M.D., Professor of Pathology, Medico-Chirurgical College, Philadelphia; HENRY LEFFMANN, M.D., Professor of Chemistry in the Woman's Medical College, Philadelphia; ALBERT ABRAMS, M.D. (University of Heidelberg), formerly Professor of Pathology, Cooper Medical College, San Francisco; and W. WAYNE BARCOCK, M.D., Lecturer on Pathology and Bacteriology, Medico-Chirurgical College, Philadelphia. Illustrated. P. Blakiston's Son & Co., Philadelphia, 1903.

Progressive Medicine, Vol. IV, December, 1902: A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences.—Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 412 pages, 54 illustrations. Per volume, \$2.50, by express prepaid. Per annum, in four cloth-bound volumes, \$10.00. Lea Brothers & Co., Philadelphia and New York.

Surgical Anatomy and Operative Surgery: For Students and Practitioners.—By JOHN J. MCGRATH, M.D., Professor of Surgical Anatomy and Operative Surgery at the New York Post-Graduate Medical School, Visiting Surgeon to the Harlem Hospital and Assistant Visiting Surgeon to the Columbus Hospital, New York. Illustrated with 27 illustrations, including colors and half-tones. Royal octavo, extra cloth, \$4.00 net, sheep or half Russia, \$5.00 net. F. A. Davis Company, Philadelphia.

Book on the Physician Himself and Things that Concern His Reputation and Success.—By D. W. CATHELL, M.D. The Twentieth Century edition, being the eleventh edition, revised and enlarged by the Author and his son, WILLIAM T. CATHELL, A.M., M.D. Pages, 411, royal octavo, extra cloth, \$2.00 net. F. A. Davis Company, Philadelphia.

A Pocket Textbook of Anatomy.—By WM. H. ROCKWELL, JR., M.D., Assistant Demonstrator of Anatomy, College of Physicians, Columbia University, New York. In one 12mo volume of 600 pages, with 70 illustrations. Lea's Series of Pocket Textbooks. Edited by BERN B. GALLAUDET, M.D. Cloth, \$2.25 net; limp leather, \$2.75 net. Lea Brothers & Co., Philadelphia and New York.

Saunders' Medical Hand-Atlases: Atlas and Epitome of Diseases of the Mouth, Pharynx, and Nose.—By DR. L. GRUNWALD, of Munich. From the second revised and enlarged German edition. Edited, with additions, by JAMES E. NEWCOMB, M.D., Instructor in Laryngology, Cornell University Medical School; Attending Laryngologist to the Roosevelt Hospital, Out-Patient Department. With 102 illustrations on 42 colored lithographic plates, 41 text-cuts, and 219 pages of text. Cloth, \$3.00 net. W. B. Saunders & Co., Philadelphia and London, 1903.

Saunders' Medical Hand-Atlases: Atlas and Epitome of Human Histology and Microscopic Anatomy.—By Privatdocent DR. J. SOBOTTA, of Wurzburg. Edited, with additions, by G. CARL HUBER, M.D., Junior Professor of Anatomy and Histology, and Director of the Histological Laboratory, University of Michigan, Ann Arbor. With 214 colored figures on 80 plates, 68 text-illustrations, and 218 pages of text. Cloth, \$4.50 net. W. B. Saunders & Co., Philadelphia and London, 1903.

Materia Medica and Pharmacology.—By DAVID M. R. CULBERTII, Ph.G., M.D., Professor of Botany, Materia Medica, and Pharmacognosy in the Maryland College of Pharmacy; Professor of Materia Medica and Pharmacognosy in the University of Maryland Medical and Dental Schools. Third edition, enlarged and thoroughly revised, with 473 illustrations. Lea Brothers & Co., Philadelphia and New York, 1902.

AMERICAN NEWS AND NOTES.

GENERAL.

Bubonic Plague Conference.—The National Convention of Delegates from the various State Boards of Health called to consider the danger threatened by the possible introduction of the bubonic plague into the United States assembled in Washington, D. C., January 19. This convention was called by the Surgeon-General of the Marine-Hospital Service, and was demanded by the State Boards of Health of Connecticut, Colorado, Texas, Louisiana, Minnesota, Maryland, Illinois, New York, and Pennsylvania. Representatives of 19 State Boards of Health were present at the conference. Resolutions were unanimously adopted declaring that the present danger to California and to the United States lies primarily in the persistence, during nearly three years, of a definite nidus of plague infection in that part of San Francisco known as Chinatown; that the gravity of this circumstance has been greatly increased by the gross neglect of official duty by the State Board of Health of California and the obstructive influence of the recent Governor of California, by the failure of the city government of San Francisco to support its city Board of Health, and by the obstacles opposed to the operations of the United States Public Health Service.

Miscellaneous.—Dr. Nelson H. Henry has been reappointed adjutant-general of New York.—At a recent meeting of the trustees of the Columbia University, Dr. L. E. La Fetra was appointed instructor in diseases of children and chief of clinic in that department at the College of Physicians and Surgeons. BALTIMORE, MD.: Dr. Leonard K. Hirschberg has been appointed director of the laboratory of hygiene at the College of Physicians and Surgeons of this city. NEW YORK CITY: On January 1, Dr. Emily Dunning began a two years' term as resident physician and ambulance surgeon at Gouverneur Hospital. She is the first regular woman interne appointed to any hospital maintained by the city.—Dr. Myron P. Denton and Dr. George M. Creevy have been appointed to Bellevue, and Dr. Samuel J. Kopetzky to Harlem hospitals as expert anesthetists. CHICAGO, ILL.: Professor G. N. Stewart, of Cleveland, Ohio, has been elected head of the department of physiology in the University of Chicago, taking the place left vacant by the resignation of Dr. Jacques Loeb.—Dr. Robert F. Weir has retired from the presidency of the New York Academy of Medicine and Dr. Andrew H. Smith has been installed as his successor.—Announcement has been made that Dr. George T. Stewart, formerly superintendent of Bellevue, has been appointed superintendent of the four contagious disease hospitals under the control of the Board of Health.

Plague in Mexico.—It is asserted that 107 deaths have occurred from plague in Mazatlan since January 1 and that new cases are being reported constantly. The 14 cases with 13 deaths which have occurred at Ensenada are believed to be due to infection brought by persons arriving from Mazatlan, although this fact has not been proved. It is now stated that the disease has spread to Toporico, having been carried by a white man who admitted he was from Mazatlan and who said he had little trouble in getting through the quarantine lines. It is rumored that the disease has been discovered in a number of the small interior towns in Sonora. The Guaymas quarantine against ships from Topolobampo, Mazatlan, and even San Francisco is being rigidly maintained. A late report states that the people of Topolobampo are dying like sheep and the survivors are leaving the stricken city as fast as possible, many going at night in skiffs. It is feared these departures will spread the disease. The appearance of plague at Mazatlan and Ensenada could readily be explained by the following facts given in the Public Health Reports: "Mazatlan has about 30,000 inhabitants and is the point where most Chinamen land who desire to enter the United States illegally from the south. They reship at San Francisco from the trans-Pacific steamer to the coastwise Pacific mail and land at Mazatlan, where they take the 'Curacao' to Ensenada and there await their chance to get across the border. The vessel makes a round trip a month between San Francisco and several Mexican ports."

Dr. Reed's Services to Humanity.—Entirely out of the class to which belong so many private pension bills is one soon to be submitted to Congress in behalf of the widow of Walter Reed, major and surgeon, United States Army. His services to humanity and to his country were very great, for it was due to his energy, intelligence, and courage that the relation between mosquitos and yellow fever was established in Cuba, and not only that island freed—forever, if the measures the efficacy of which he demonstrated are not neglected—from a disease that had devastated it for 200 years, but our Gulf and South Atlantic States relieved of a danger that constantly threatened them, and had often inflicted enormous losses of life and property upon their citizens. Dr. Reed did not, like one of his associates, die of the disease from which he saved others, but he took the chance of doing so without hesitation, despite the fact that, because of a heart affection, he had not for some years past been able to secure insurance upon his life. Certainly the country owes him a debt of gratitude, and a pension that would put his wife and daughter beyond want would be a

fitting expression of that feeling. As has been well said, so important was the result of Dr. Reed's work that if this alone were the outcome of our war with Spain, its cost in blood and treasure would have been measurably repaid. Enough popular interest in the pension bill should be shown to insure its passage, and not much effort should be needed when it is found so easy to put on the rolls so many names that cannot pass the far from too searching scrutiny of the Pension Bureau.—[*New York Times.*]

Hospital Benefactions.—PHILADELPHIA: The will of the late Dr. Bushrod James devises \$55,000, several pieces of real estate in the city, and several lots at Island Beach, N. J., to the city of Philadelphia, for the purpose of establishing a free hospital in Philadelphia for the treatment of diseases of the eye and ear. The will directs that the proposed hospital be called the Washington James Eye and Ear Institute, and that the \$55,000 be invested as an endowment fund, the income to be used for its maintenance.—The University of Pennsylvania Hospital has received a gift of \$10,000 for the endowment of two free beds from a woman who wishes her name withheld.—According to the will of the late Henry C. Cochran the following bequests will become effective on the death of his widow: The Pennsylvania Hospital will receive \$10,000, \$5,000 of which is to be used for improving the conditions of the insane; the Presbyterian Hospital will receive \$5,000; the University of Pennsylvania Hospital, \$5,000; the Philadelphia Polyclinic, the Gynecean Hospital, and the Medico-Chirurgical Hospital, each \$1,000; the Philadelphia Dispensary and the Northern Dispensary, each \$500.—The late James Wilson bequeathed \$1,000 to the Presbyterian Hospital. BUFFALO, N. Y.: The late W. C. Mills, of this city, bequeathed \$10,000 to the Buffalo General Hospital. NEW YORK CITY: According to the will of the late Isaac T. Carpenter, upon the death of his sister the following institutions will each receive \$1,000: The Woman's Hospital, New York Society for the Relief of Ruptured and Crippled, German Hospital and Dispensary, New York Eye and Ear Infirmary, Mount Sinai Hospital, New York Infirmary for Women and Children, New York Homeopathic Infirmary for Women in the City of New York, Home for Incurables, and the Nursery and Children's Hospital.

EASTERN STATES.

Distribution of Vaccine Lymph.—The report of the Massachusetts State Board of Agriculture regarding the production of vaccine lymph at the State Agricultural College for free distribution, which is now under consideration in the House, states that a part of the veterinary department of the college could be used in the production of vaccine, their being stables, laboratories, and apparatus available for the purpose, but that it would be necessary to erect an additional building for stabling and laboratory purposes. It is estimated that such a building would cost about \$9,000, and the apparatus necessary for its equipment about \$2,500 more. It is suggested that an annual appropriation of \$3,000 be made to cover salaries and incidental expenses. The board believes the plan is practicable; that the work can be done at a minimum cost; and that the location of the college is a distinct advantage in the distribution of lymph.

NEW YORK.

The McKinley Memorial Hospital for Diseases of the Digestive Organs, of New York City, has applied to the State Board of Charities for permission to incorporate. It is intended to treat diseases of the digestive organs and to establish a laboratory for original investigation.

The recommendations in Governor Odell's message pertaining to medical matters were as follows:

Separate buildings for superintendents and medical staffs at Poughkeepsie, Utica, Buffalo, Binghamton, Rochester, and Gowanda (\$225,000); home for nurses, Kings Park (\$51,000).

Tuberculosis hospitals at six institutions (\$90,000).

Transfer of inmates of Bedford Reformatory to reformatories for women at Hudson and Albion; its conversion into a hospital for insane (\$150,000).

Prohibition of use of Elmira Reformatory by the United States Government.

Removal of State Industrial School (Rochester).

Amendment of child labor law so as to make effective the statutes regarding the employment of children.

Amendment of tenement-house law.

PHILADELPHIA, PENNSYLVANIA, ETC.

Health Certificates for Teachers.—A resolution has been passed by the Board of Education of Philadelphia which will require students entering the Normal School to present a certificate of good health. The idea is to prevent those entering and graduating from the school who are unable to act in the capacity of teachers. This plan has been followed successfully in Chicago and Denver.

The Chair of Obstetrics, Woman's Medical College of Pennsylvania.—Professor Anna E. Broomall last spring resigned the chair of obstetrics in the Woman's Medical College of Pennsylvania, but consented to remain in the college for one year only. Her connection with this department will therefore terminate with the close of the present session. The faculty will consider the subject of nominating a successor at a very early date, probably during the present month.

SOUTHERN STATES.

Study of Criminals.—The House Judiciary Committee has reported favorably on the bill establishing a laboratory for the study of the criminal, pauper, and defective classes in connection with the Department of Justice. The bill provides that there shall be established in the Department of Justice a laboratory for the study of the abnormal classes. Such work will include not only laboratory investigations, but also the collection of jurisprudential, sociologic and pathologic data, especially as found in institutions for the criminal, pauper and defective classes and as may be observed in hospitals, schools, and other institutions, also investigation of anarchistic criminals, mob influence and like phenomena. The causes of social evils are especially to be sought out, with a view to lessening or preventing them. These results and those of similar work are to be collected and published from time to time. There is to be a director of the laboratory at an annual salary of \$3,500. Specialists to assist him are to be employed in investigations, and such other help as may be necessary to carry on the work. An appropriation of \$20,000 is made in the bill, one-half of which is to be immediately available. When the legislative, executive, and judicial appropriation bill passed the House no provision was made for continuing the work of a specialist in criminology and cognate subjects in the Bureau of Education, Mr. Harris, chief of the bureau, it is understood, having recommended that no appropriation be made. The work has heretofore been done by Mr. Arthur Macdonald, who has published a number of monographs and books on the criminal and defective classes.

WESTERN STATES.

"Wisconsin Medical Journal."—The first number of this journal, which is edited by Dr. Arthur J. Patek, of Milwaukee, appeared this month with an exceptionally high grade of contributors. The publication will be issued monthly, the subscription being placed at \$2.00 per year.

Barbers Aspire to be "Doctors."—The *Chicago Tribune* is authority for the statement that the "tonorial artist" of Chicago aspires to be a "doctor of medicine." A bill is prepared which the Legislature of Illinois will be asked to pass. It requires that all shops and implements be kept clean and sanitary, and that the barbers be versed in medical knowledge. It also requires the examination of all applicants after they have served three years' time with a licensed barber. The bill further provides for a board of five commissioners and ten inspectors.

FOREIGN NEWS AND NOTES

GREAT BRITAIN.

Editorship of the "Practitioner."—It is announced that Malcolm Morris, who has retired from the editorship of the *Practitioner* after eight years' incumbency, will be succeeded by W. Cecil Bosanquet.

Decreased Birthrate in London.—According to the statistics for 1902 the birthrate for London reached the lowest figures since registration began, the rate being only 29 per 1,000 inhabitants. The deathrate is given as 17.1 per 1,000, the lowest since 1840; the marriage rate was 17.6 per 1,000.

CONTINENTAL EUROPE.

Hospital for Lepers in Paris.—The authorities of Paris propose to erect a hospital for lepers in that city and an appropriation of 25,000 francs has been asked for this purpose. In the city of Paris there have been reported 19 cases of leprosy, and it is asserted that the physicians of Paris have less concern in regard to the contagiousness of leprosy *per se* than for the strong predilection which lepers have for tuberculosis.

OBITUARIES.

Oliver Wendell Weeks, past surgeon-general of the Grand Army of the Republic, died in Marlon, Ohio, January 13, aged 62. He was graduated from the Cincinnati College of Medicine and Surgery in 1865. He was president of the Board of the United States Pension Examining Surgeons during Presidents Harrison, McKinley, Roosevelt, and part of President Cleveland's administrations. He was a member of the American Medical Association, Ohio State Medical Society, and president of the Marion County Medical Society. He was an ex-member of the board to examine applicants for the West Point Military Academy and the Annapolis Naval Academy from the Eighth and Thirteenth Congressional Districts.

Frederick J. Bancroft, of Denver, died in San Diego, Cal., January 17, aged 68. He was graduated from the medical department of the University of Buffalo in 1861. He served as a surgeon with the Union forces during the Civil war, and was chief surgeon of the Colorado and Southern Railway and Colorado Midland Railway Companies. He was

an occasional contributor to medical literature, his works being mostly upon effects of climate upon certain diseases.

El H. Coover, a prominent physician of Harrisburg, Pa., died January 13. He was graduated from the Jefferson Medical College, Philadelphia in 1850. He was a member of the American Medical Association, Pennsylvania State Medical Society, Dauphin County Medical Society, and was a Founder and first president of the Harrisburg Academy of Medicine.

E. Edwin Spencer, of Cambridge, Mass., January 19, aged 69. He was graduated from the Cincinnati Eclectic College in 1856, and from the Worcester Medical College in 1859. He was city physician of Cambridge until 1891, when he was appointed a member of the Board of Health, and afterward became its chairman.

Anson S. Fraser, of Sarnia, Ont., December 31, aged 56. He was graduated from the medical department of Queen's University in 1869. He was for nine years examiner in physiology for the Ontario Medical Council and was largely instrumental in the establishment of the Sarnia General Hospital in 1896.

Mareus A. Bogie, in Kansas City, January 4, aged 62. He was graduated from the Long Island College Hospital, Brooklyn, in 1864. He was chief surgeon to the Kansas City Belt Railway and a member of the International Association of Railway Surgeons.

James N. West, of Toccoa, Georgia, January 11. He was graduated from the Jefferson Medical College, Philadelphia, in 1891. He was a member of the Georgia State Medical Association and was medical examiner for a number of life insurance companies.

Irving S. Vallandigham, in Middletown, Del., December 30, aged 62. He was graduated from the University of Maryland in 1862. He served as an assistant surgeon in the Confederate Army and was a member of the American Medical Association.

Henry Van Ostrand, in Yankton, S. D., December 26, aged 84. He was graduated from the Geneva (N. Y.) Medical College in 1843. During the latter part of the Civil war he served as assistant surgeon to the First Michigan Engineers and Mechanics.

Robert E. Williams, an assistant surgeon in the United States Volunteers, died at the United States General Hospital, Presidio, of San Francisco, December 30, aged 58. He was graduated at the University of Georgetown, Washington, D. C., in 1870.

Henry H. Howland, in Denver, Colo., December 27, aged 53. He was graduated from the medical department of the New York University in 1873. He was a member of the American Medical Association and was well known as a laryngologist.

George T. Motter, of Taneytown, Md., died in Westminster, Md., January 16, aged 61. He was graduated from the medical department of the University of Nashville in 1864. During the Civil war he was a surgeon in the Federal Army.

Ralph Brooks, in Hampton, Va., January 4, aged 27. He was graduated from the University of Pennsylvania in 1897, and at the time of his death was first assistant physician at the National Soldiers' Home, Hampton, Va.

John Allard Jeancon, of Newport, Ky., January 13. He was graduated from the Royal College of Surgeons, London, Eng., in 1854. During the Civil war he served as surgeon of the Thirty-second Indiana Volunteer Infantry.

Susan R. Pray, of Brooklyn, N. Y., January 13, aged 45. She was graduated from the Woman's Medical College of the New York Infirmary, New York City, in 1882. She was a member of the Health Board for thirteen years.

Charles Edmond Chase, in Woburn, Mass., December 26, aged 53. He was graduated from the University of Vermont, Burlington, in 1873. He was a prominent member of the Massachusetts Medical Society.

H. B. Tingley, a well-known physician of Borough of Queens, New York City, was killed by a train at Rockaway Beach, January 14, aged 45. He was graduated from the Baltimore Medical School in 1889.

John B. Amiss, of Harrisonburg, Va., January 4, aged 68. He was graduated from the New York University in 1858, and was a member of the National Association of Railway Surgeons.

Robert H. Goldsmith, a well-known physician of Baltimore, Md., died January 14, aged 70. He was graduated from the University of Maryland School of Medicine in 1852.

Charles A. Osborne, in Owosso, Mich., January 2, aged 70. He was a graduate of the Buffalo Medical College and served as surgeon during the Civil war.

L. A. Burgess, of New Iberia, La., January 15, aged 72. He was graduated from the medical department of the Tulane University, New Orleans, in 1856.

George W. Howard, a retired physician of Vicksburg, Miss., January 12, aged 68. He was graduated from the Medical College of Virginia in 1863.

William H. Hildreth, a retired physician of Newton, Mass., died January 15, aged about 65. He was a graduate of the Dartmouth Medical College.

William G. Cole, in Van Wert, Ohio, January 1. He was graduated from the New York University in 1843, and served as a surgeon in the Civil war.

- T. L. Webb**, in Cookeville, Tenn., December 24, aged 50. He was graduated from the Georgia College of Eclectic Medicine and Surgery in 1889.
- W. W. Watkins**, in Carthage, Mo., January 2, aged 75. He was graduated from the College of Physicians and Surgeons, Keokuk, Iowa, in 1882.
- William C. Gallagher**, in New York City, January 5, aged 40. He was graduated from the Bellevue Hospital Medical College, New York, in 1886.
- Ernest W. Bradley**, at Grass Valley, Cal., December 28, aged 48. He was graduated from the Hahnemann Medical College, Chicago, in 1879.
- William H. Haviland**, in Columbus, Ohio, December 30, aged 38. He was graduated from the Starling Medical College, Columbus, in 1889.
- Charles H. Black**, in Turtle Creek, Pa., January 2, aged 53. He was graduated from the Jefferson Medical College, Philadelphia, in 1875.
- Charles W. Hedges**, in Newkirk, Okla., December 21, aged 26. He was graduated from the Vanderbilt University, Nashville, Tenn., in 1901.
- Ralph G. Morgan**, in Indianapolis, Ind., January 1, aged 29. He was graduated from the Medical College of Indiana, Indianapolis, in 1898.
- John E. Palmquist**, in Holdrege, Neb., December 21, aged 32. He was graduated from the University of Minnesota, Minneapolis, in 1896.
- William Lindsay**, in Strathroy, Ont., December 9, aged 59. He was graduated from the medical department of Victoria University in 1869.
- Nesbitt F. Jordan**, in Bloomington, Ill., December 28, aged 45. He was graduated from the Medical College of Ohio, Cincinnati, in 1884.
- William S. White**, in Lexington, Va., December 20, aged 59. He was graduated from the University of Virginia, Charlottesville, in 1875.
- Schuyler F. Shidler**, near Sheridan, Mo., January 3. He was graduated from the College of Physicians and Surgeons, Chicago, 1888.
- Ephraim W. Gantt**, in Lockport, N. Y., January 5, aged 72. He was a graduate of the College of Physicians and Surgeons, New York.
- Allen G. Berry**, in Ashland, Ky., December 30, aged 43. He was graduated from the Kentucky School of Medicine, Louisville, in 1886.
- J. Henry Rider**, in Cape Girardeau, Mo., December 23, aged 61. He was graduated from the Missouri Medical College, St. Louis, in 1870.
- Jacob L. Heller**, of Philadelphia, January 12, aged 36. He was graduated from the Jefferson Medical College, Philadelphia, in 1892.
- James Beahan**, in Rochester, N. Y., January 3, aged 80. He was graduated from the Jefferson Medical College, Philadelphia, in 1852.
- William H. Middleton**, in Camden Point, Mo., December 25. He was graduated from the Washington University, St. Louis, in 1866.
- Robert G. Petway**, in Nashville, Tenn., December 24, aged 68. He was graduated from the Nashville (Tenn.) Medical College in 1855.
- William Bevier**, in Waterloo, Ind., December 29, aged 80. He was graduated from the Eclectic Medical Institute, Cincinnati, in 1852.
- Louis Charette**, in Glens Falls, N. Y., December 26, aged 87. He was graduated from the Albany (N. Y.) Medical College in 1852.
- James T. Scott**, in Paynesville, Mo., December 28, aged 70. He was graduated from the Missouri Medical College, St. Louis, in 1854.
- James DeWolf**, near Baraboo, Wis., January 5, aged 60. He was graduated from the Harvard University Medical School in 1866.
- William L. Demmon**, in Clarkston, Mich., December 28, aged 30. He was graduated from the Detroit College of Medicine in 1894.
- William E. Brownell**, in New Bedford, Mass., December 27, aged 45. He was graduated from the New York University in 1879.
- William J. Deane**, at Kingston, N. Y., December 31, aged 36. He was graduated from the University of Buffalo, N. Y., in 1895.
- Waldo E. Clark**, at Saginaw, Mich., December 19, aged 45. He was graduated from the Detroit College of Medicine in 1887.
- L. E. Towne**, in Broadhead, Wis., January 6, aged 76. He was graduated from the Rush Medical College, Chicago, in 1868.
- William A. Looney**, in Vienna, Ill., January 5, aged 74. He was graduated from the Rush Medical College, Chicago, in 1868.
- Daniel P. Buckey**, at Flemington, W. Va., December 29. He was graduated from the Baltimore Medical College in 1894.
- H. Van Gerhart**, in San Diego, Cal., December 28, aged 29. He was a graduate of the Missouri Medical College, St. Louis.
- J. J. Arendale**, in Waller, Tex., January 5. He was graduated from the University of Tennessee, Nashville, in 1894.
- William R. Freeman**, in Bellbuckle, Tenn., January 1. He was graduated from the University of Nashville in 1871.
- George W. Harding**, in Ahmednagar, India, January 13. He was a graduate of the Rush Medical College, Chicago.
- James McCullough**, of Watertown, N. Y., January 13, aged 48.
- J. W. Summers**, of Cameron, S. C., December 28, aged 65.
- James H. Lowe**, in Atlanta, Ga., January 21, aged 82.
- John Stevens**, in Bangor, Me., December 21, aged 67.
- Arthur J. Padron**, in New Orleans, December 30.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

HYDROGEN DIOXID IN MERCURIAL STOMATITIS.

BY

ALBERT H. FRIDENBERG, M.D.,

of New York City.

The tendency to mercurial stomatitis depends so much upon individual predisposition, that, given teeth that are defective, or even artificially sound, plus the indication for vigorous mercurial treatment, one can by no means be assured, no matter how minutely one has instructed the patient in the care of his mouth or impressed upon him the importance of certain prophylactic measures, that this justly dreaded complication can always be prevented. Even when the customary injunctions are faithfully adhered to, cases of mercurial stomatitis are not infrequent, often very severe, and notoriously rebellious to treatment. The evils of "salivation" must not be underestimated. The patient suffers intensely, often being deprived of rest, sleep, and the ability to masticate and to swallow food for many days in succession. Pain, insomnia and insufficient nutrition combine to sap rapidly the vital forces and thus become potent factors for evil, especially when added to the natural inroads of the specific disease in question. The plight of such a subject presents a composite picture of misery, physical and mental, not readily forgotten when once witnessed, owing not only to the actual suffering entailed, but equally because of the overwhelming depression of spirits so frequently attendant upon the revelation of the presence of an infection, the loathsome, treacherous, protracted and uncertain nature of which is but too well appreciated by the intelligent class. In fact, by some authorities, the baneful effects of salivation, when severe, are represented as second only in importance to the destructiveness of the original disease itself.

In an emergency of this kind, recently, I exhausted the list of remedies usually suggested, to no avail, when, finally, I had recourse to the use of hydrogen dioxid locally, and with such unexpectedly gratifying results that I am impelled to put this memorandum on record, with no apologies, even in view of the comparative triteness of the subject.

The case was that of an anemic and highly nervous young married woman, infected by her husband, and in the early secondary stage. Her face and body were so thickly sown with the typical maculopapular eruption that she was hardly recognizable. The pharynx and tonsils were affected. Her hair was falling out copiously; she had violent cephalalgia and acute nocturnal osteocopic pains. Her mental and physical distress was extreme and bordered on hysteria. Energetic mercurial treatment was therefore imperative. After ten inunctions in as many days, and in spite of the usual prophylaxis of the buccal cavity, stomatitis set in and rapidly assumed a severe form. The tongue was swollen, flabby, indented; the gums were tender, softened, reddened, and receded from the roots of the loosened teeth; the edematous pillars of the fauces made of each act of deglutition an agonizing effort; the dribbling of viscid saliva and the fetid breath added to her wretchedness. The inferior maxilla and the cervical region were everywhere exquisitely sensitive to the touch. The usual remedies proved inefficient. Neither potassium permanganate, silver nitrate, tincture of galls, rhatany, nor even the once popular mercuric chlorid in weak solution availed. Internally atropin and duboisin were administered. They appeared, for a time, partially to control the flow of saliva, but they did not alter the local condition nor give relief. The patient was exhausted by loss of sleep and of sustenance and by constant pain, and was rapidly getting into a desperate condition. She whimpered for relief. It occurred to me to try hydrogen dioxid, which I advised as a mouth-wash, diluted, one part in three of water, every half hour. The result was most gratifying, the patient experiencing, within 24 hours, a measure of relief not previously obtained with all the other remedies combined, faithfully employed for five days. In two days she was comfortable, and thereafter recovery was rapid and complete.

Those of us who are familiar with this undesirable complication and with the difficulties attending its management, will appreciate the boon of a remedy, which, while free from the objectionable features of others much favored heretofore, seems to act with promptness and precision.

INSUSCEPTIBILITY TO VACCINATION.

BY

WM. C. WOODWARD, M.D.,
of Washington, D. C.

To the Editor of *American Medicine*:—Apropos of certain recent very positive statements to the effect that insusceptibility to vaccination does not exist, you inquire, "What is the greatest number of nontaking vaccinations known to any of our readers?" I personally have been vaccinated so frequently that I cannot recall the exact number of times. I think I can safely say, however, that it was somewhere between 15 and 30. These vaccinations covered a period extending from childhood to the present time. They have been done with numerous varieties of vaccine matter, including in childhood humanized virus. The operations have been performed by local practising physicians, inspectors of the Health Department, on one or two occasions by medical officers of the Marine-Hospital Service, once by a representative of a propagator of vaccine lymph, and once by a physician directly connected with the propagations of such lymph. Not one of these vaccinations has been successful. I have frequently come into contact with smallpox in the wards of the smallpox hospital and elsewhere, and have as yet felt no ill effects from such contact.

I have made it a practice to be vaccinated practically after each exposure to infection, and notwithstanding the above facts will continue such practice.

THE FABLE OF THE SICK DOCTOR.¹

(With apologies to Mr. Ade.)

The Doctor who never had any Time to take his own Medicine or consider his own Symptoms, Got Sick suddenly like a Mere Patient.

They rushed him to the Hospital in the Ambulance, put him to bed, took his Temperature, and decided on an Operation because he had a New-Fangled Ailment.

But the Doctor had no enthusiasm about his Case. He Felt Sick.

The Surgeon came around with that Brisk, Professional Air that is part of the Business, and patted him on the Back and Patronized him with sundry Jollies. But the Doctor had his Private Opinion that it was No Joke.

The Nurses, who are Good Girls but human, said in their hearts: "Here is a chance to get on the Right Side of the Doctor, so he will call us Ministering Angels." And their Assiduity fairly rustled. But the Doctor was an Old Bachelor who sometimes said "Damn" when he felt like it. And certain restraints are necessary in the Presence of Ministering Angels.

The Doctor had a Hobby on germs when he was well. He could tell you the Difference between Bacilli who were Second Cousins removed, and those who did not Go in the same circles of Society, and in Latin words long enough to cross the page and Lap Over. But when they began scrubbing him with solutions and doing him up in Antiseptics and Oiled Silk, and Regretting that they couldn't put him in the Sterilizing Kettle before the Operation to make him perfectly Aseptic, the only reason he did not Quit the Place was that the Power had Given Out.

The Doctor could give you Hard Facts for an article on the beneficence of Modern Abdominal Surgery, which is the euphonious for Free-Hand Carving, but when the Surgeon was ready he was as Well SCARED as a man can be and keep up Cheerful Appearances. Long training in the Lugubrious Business had made Cheerful Appearances second nature with him.

When he Returned to Earth he wished he had continued in the Air Ship. He felt like a Premature Baby in an Incubator. If he'd been the First Heir he couldn't have attracted more Attention when he made his first Noise. Between feeling his pulse and fanning him, hot-water Bottles and Ice packs, basins at Intervals and alcohol sponges Frequently, tender solicitude and Fluttering Anxiety, he was the Whole Thing.

¹A contribution from a lay friend, representing the layman's point of view.

The Doctor knew, Professionally and from Text Books, of the Baleful Effects of Alcohol, and he could be jocund with the fruitful grape on Provocation. When he began to feel of his Symptoms and his Head, and to Diagnose his Case from Force of Habit, he admitted that it was a Double Distilled Sulphuric-and-Brimstone, Alcoholic "JAG" (in the vernacular). Which is to say that he was Coming Out of the Ether. And he was Sicker than a Dog, and Sorry for himself.

But the Surgeon declared the Operation was Successful.

Then all the Doctor's Friends Mourned.

"For," they said, "That Settles It—the Man will Die."

A hospital is a Training school for Meekness of Spirit. When a man who has always walked in Authority and Commanded in Power gets into a little white bed with a big surgeon over him and half a dozen nurses to represent the Tyranny of Petticoats, he needs to be a brave and discreet man or he'll get called a Crank.

There are two kinds of patients in a hospital—patients and Cranks. A patient is a Sick Person who takes his Medicine. A Crank is a Person who requires a Firm Hand and the Head Nurse.

When the Attending Physician said, "Don't give him That"—"See that he takes This"—and the nurse wrote it down in her book and it became that Cast Iron, Rigid and Unimpeachable Legislation "The Doctor's Orders"—the Sick doctor smiled in a sick fashion and remembered all the Cast Iron and Unimpeachable "Doctor's Orders" for which he had been responsible.

Beside, a man who has been House-boating on the Styx and on liquid diet will put up with most anything when he Gets Back to Terra Firma.

As a Doctor, wise men had hung upon his words, and what he said invariably proceeded. As a patient, he was not supposed to have any common sense or to use his own brain for purposes of personal cerebration; when it was time to sleep the light was put out; when it was time to wake the nurse sloshed Soapsuds in his eyes and towed him into a knowledge of the hour of the morning when the night nurse "Did Up her work for the day." When he desired sustenance the ministering Angels turned Deaf ears to him; when it was Time for anything they poured it Down his throat. When he entreated for a Smoke he learned that the Ladies objected to Tobacco, and the Attending Physician declared that he would have a chance to Smoke Hereafter. But the Attending Physician had smoked his own After Dinner Cigar and could afford to be facetious.

In the course of time he became a Grateful Patient. Every Case eventually becomes a Grateful Patient, for the Good Name of the Institution. The others die. Gratitude is the first Stage of Convalescence. He listened for the rustle of petticoats down the corridor and the jingle of safety-pins hung in a string to the band of a starched linen apron. He listened to the ceaseless footsteps of Ministering Angels who work 25 hours a day with no pay for overtime. And he learned more about the cheerful Humanities and the brotherhood of man and the sisterhood of woman than he had ever read in the Christian Poets or the Heathen Philosophers, and if there had been but One Ministering Angel it would have been Fatal. As it was, he thought up Extenuating Circumstances for Mr. Roberts, of Utah.

But about the time he arrived at a realizing sense that life was a Bed of Roses and that he Owned the Greenhouse, the thermometer suddenly Dropped and he Felt a Chill. There was a New Patient in the next Room, and he heard the Tender Solicitude rustle through the wainscoting. And they came and Turned him out of the Place and hung a New Chart on the footboard, and they said: "We are Glad to get Rid of you. For you are no longer an Interesting Case. You are Well."

Now, as a Medical Man, he had hitherto taken a very complacent view of the Profession. But Thirty Days in Solitary Confinement had given him time to Think. A new Relation of things Percolated through his inner consciousness with the comfort of Being Taken Care Of, and he said in himself: "Go to! Half the patients would Die were it not for the Nurses."

Moral: A Doctor can learn a heap about his own Business if he tries being a Patient.

M. A. W.

ORIGINAL ARTICLES

INFLUENCE OF NEPHRECTOMY UPON ABSORPTION.*

BY

S. J. MELTZER, M.D., AND W. SALANT, B.S., M.D.,
of New York City.(A preliminary communication from the Rockefeller Institute for
Medical Research.)

Our study of the effects of subminimum doses of strychnin upon nephrectomized rabbits brought to light the fact that these animals can gradually receive a good deal more than the fatal dose without manifesting any reaction. In discussing this remarkable result we mentioned among other explanations the possibility that in nephrectomized animals absorption from subcutaneous tissue is perhaps impaired. This latter suggestion, although in conformity with the view prevailing among pathologists, is as yet only a surmise; so far as we know this question was not yet made a subject of a systematic experimental study. The reason for the assumption that absorption is impaired after nephrectomy is found in the well known pathologic fact of the appearance of edema and ascites in the course of some diseases of the kidneys. All theories on the formation of edema seem to agree that it is due to an increased transudation of serous fluid from the blood into the lymph spaces and that the plethoric condition of the blood, which is brought about by the diminished excretion of water by the diseased kidneys, is at least one of the causes of the increased transudation. With these premises in view it seems obvious that the entire removal of the kidneys surely ought to lead to plethora and an increased transudation and therefore also to a decrease in absorption from the lymph spaces.

However, in the many nephrectomies we have performed on rabbits and guineapigs we have never observed edema following this operation; nor have other experimentors recorded an increase in transudation after the removal of the kidneys. We have therefore decided to subject the question as to the behavior of absorption after nephrectomy to an experimental test.

We shall report here only our essential results, and those very briefly. The experiments were made on rabbits by introducing salt solutions through a fine opening into the peritoneal cavity and removing it very carefully again after varying intervals. There was a normal control rabbit for each nephrectomized animal. Lumbar nephrectomy was practised and care taken not to injure the peritoneum.

The first series of experiments was made with a solution of 0.8% sodium chlorid, it being considered approximately isotonic with the serum of the rabbit.

The result was a surprise. Not only was the absorption in the nephrectomized rabbits not less than in the normal, but it was distinctly better. In five experiments the average absorption for the normal was about 20 cc. per kilo to 22 cc. for the nephrectomized animal. The differences were still more striking when the percentages of the injected volume were compared: 43% for the normal to 65% for the nephrectomized rabbit.

These results, which seem to show that nephrectomy rather favors absorption, directed our attention to a factor which has been hitherto neglected in the considerations of the effects of nephrectomy; it is the increased osmotic pressure of the blood. As the urine has usually a higher osmotic pressure than the blood, it seems quite obvious that after nephrectomy the osmotic pressure of the blood ought to be increased. If this be correct, then a solution of 0.8% sodium chlorid, which is about isotonic with the blood of normal rabbits, is probably hypotonic with the blood of the nephrectomized ones; hence the better absorption in the latter animals.

In our next experiments we have carried out several series with solutions of sodium chlorid of 1%, 1.2%, 1.5% and 2% concentrations. We shall not give particulars. It will suffice to state that, for instance, in the series with solutions of 1.2%, the average of seven experiments for the normal amounted only to 0.5 cc. per kilo against 12 cc. per kilo for the nephrectomized rabbits, or 0.6% for the normal against 25% of the injected volume in the nephrectomized animals. That means that the absorption of a solution of 1.2% sodium chlorid was in nephrectomized animals at least 24 times as good as that which took place in normal ones. With solutions of 1.5% sodium chlorid there was in three out of four normal animals a negative absorption, that is, more fluid was recovered than injected; while in nephrectomized animal there was in each case still a considerable positive absorption. Only in the series with 2% solutions was there one case also among the nephrectomized animals in which more was recovered than introduced.

Our experiments demonstrate clearly that after nephrectomy absorption is considerably improved. They clear up the mysteries why no edema was observed after nephrectomy in animals or in pathologic cases of acute anuria in human beings lasting some times five to six days. The first effect of complete anuria is not an increase of the normal transudation but an increase of the power of absorption of the blood.

A full report will appear soon in the *Journal of Medical Research*.

The experiments were carried out in the pathologic laboratory of the College of Physicians and Surgeons, New York. We wish to acknowledge our indebtedness to Professor Prudden, the director of the laboratory.

SECONDARY CARCINOMA OF THE LIVER, WITH
REPORT OF A CASE IN WHICH THE LIVER
WEIGHED 15,110 GMS. (33½ LBS.)*

BY

HENRY A. CHRISTIAN, A.M., M.D.,
of Boston, Mass.

Instructor in Pathology, Harvard University; Second Assistant Visiting Pathologist, the Boston City Hospital.

[From the Pathological Laboratory of the Boston City Hospital.]

Among 1,650 consecutive postmortem examinations recorded in the Pathological Laboratory of the Boston City Hospital, 60, or 3.63%, showed carcinoma affecting some organ of the body. Of these 1,650 cases, 362 patients were under 20, so that the percent of carcinomatous involvement for adult patients was 4.65%. Again this total of 1,650 cases includes 268 from the South Department, where only the acute infectious diseases, as scarlet fever and diphtheria, are treated. Deducting these there remain 1,382 cases, of which 4.34% were carcinomatous.

The liver was involved in 25, or 41.66% of the 60 cases of carcinoma. This represents 1.51% of the total number of autopsies, or 1.94% of those over 20. Of these 25 cases, the carcinoma was primary in the liver in 5, and secondary either by direct extension or by metastasis in 20. The percentage of liver involvement in this series of cases is apparently a small one.

In 4,200 autopsies at Guy's Hospital, reported by White,¹ 126, or 3%, showed carcinoma of the liver, and this corresponds with the figure given by Leichtenstern,² who in 6,019 autopsies found carcinoma of the liver in 174, or 2.89%.

In 311 cases of carcinoma at the Zurich medical clinic, reported by Siegrist,³ the liver showed involvement clinically in 45 cases, and this by postmortem examination was corrected to 77 cases, or 24.7% of the total.

* Presented at the meeting of the American Physiological Society, December 31, 1902, Washington, D. C.

* Contributed to Vol. XIII of the Medical and Surgical Reports of the Boston City Hospital.

An analysis of the 20 cases of secondary carcinoma of the liver shows 11 males and 9 females. The ages ranged from 28 to 70, as follows :

28 years.....	1 case.
3) to 40 ".....	2 cases.
40 to 50 ".....	3 " "
50 to 60 ".....	7 " "
60 to 70 ".....	7 " "

The duration of the disease, owing to the very indefinite character of the early symptoms, is difficult to estimate. When determinable it was in most cases from 3 to 8 months, and in some much less. In only one case was one year with certainty exceeded, and possibly in another in which there was a history of gallstone attacks during a period of 8 years. Jaundice was present in one-half of the cases, and ascites in one-third. In only 4 cases did the spleen exceed the average normal weight of 171 gms. as given by Orth, and in these cases the enlargement was explainable as the result of a concomitant acute infectious process, to which in one case was added a malarial splenitis.

In the 20 cases, the primary growth was in the stomach in 5, pancreas 4, large intestine and gallbladder, each 3, rectum 2, esophagus, breast, and prostate, each 1.

The picture presented by the liver in the different cases varied both as to the extent and character of the involvement. In 13 cases the liver surface was nodular, the nodules varying in size from 3 mm. to 6 cm., or even larger. Umbilication of the nodules was often present. The cut surfaces of the livers were thickly studded with carcinoma nodules, generally whitish in color, but frequently mottled by bile staining or foci of hemorrhage. The liver tissue between the nodules appeared normal or showed evidence of compression. In none was there more than a slight increase of connective tissue in the liver substance. In all of these cases all parts of the liver seemed to share equally in the diseased condition. In 4 cases the liver showed only a few nodules. In one of these there was a single nodule in the right lobe, in another one in the left lobe; a third showed two nodules, and a fourth a few. In 2 cases the liver was involved by extension in the immediate vicinity of a primary growth in the gallbladder, besides showing a few scattered metastases.

One case differed from all the others in having an almost perfectly smooth surface, and a very extensive diffuse growth in the liver tissue, with only here and there the formation of small discrete nodules. The involvement was more marked toward the periphery of the liver than at the center, and in places assumed an indefinite wedge-shaped distribution. The liver weighed 3,400 gms.

The structure of the liver growths was that of the primary, in most cases adenomatous in type. The size of the liver showed great variation. When the involvement was slight the liver showed little change, but even in cases with extensive and apparently equal involvement there was great variation in size. About half showed considerable enlargement. In no case was there marked atrophy.

The weights were :

1,000 to 1,500 gms.....	5 cases.
1,500 to 2,000 ".....	5 " "
2,000 to 2,500 ".....	2 " "
3,000 to 4,000 ".....	3 " "
5,000 and over.....	4 " "
Weight not given.....	1 case.

In one of the cases the liver weighed 8,100 gms., while another reached the enormous weight of 15,110

gms. The amount of abdominal space encroached upon by the liver in the former case is well shown in the accompanying photograph (Plate 1). The latter case, besides the enormous size presents other points of interest, and is here given in detail.

Clinical History.—G. W., aged 62, a bookbinder by trade, was born in Grisons, Switzerland. His family history presents no points of interest. His father, mother, and a sister lived to an old age, dying without any signs of a malignant growth.

Present History.—The patient came to America in 1868. In 1873 he had smallpox. With this exception there has been no previous illness. He has always been temperate in his habits, and denies venereal disease. Since he was about 30, he has drunk occasionally a small amount of beer and smoked in moderation.

Present Illness.—The present illness dates definitely from September, 1898. Prior to that period the patient seems to have had no symptoms, at least none suggesting the need of medical attention. At that time his physician was consulted for loss of



Plate 1.

strength, dyspnea on exertion and swelling of the abdomen. Just how rapidly these symptoms had developed is not known. His physician, Dr. Clement, states that, when seen in September, 1898, his liver extended far below the umbilicus on the right side, and well down to its level on the left side. The surface of this mass felt smooth, except near the mid line, where there was an area about 5 cm. in diameter, which was distinctly elevated.

The patient was ordered to take a vacation, and while away from Boston was very sick with vomiting, headache, and dizziness. At this time he was in bed for almost six months, and then was able to be up, occasionally working for a day. In May, 1900, he became confined to the house, his feet began to swell, and his abdomen continued to enlarge. He steadily lost weight, and became jaundiced. The size of the abdomen and the degree of jaundice has varied from time to time.

Until about August, 1900, constipation had existed, though relieved readily. On several occasions, about this time, small amounts of blood were passed by the rectum. This was at the time attributed to obstruction of the portal circulation.

On November 24, 1900, he was admitted to the service of Dr.

Sears, at the Boston City Hospital, for observation. A physical examination on this date shows a poorly developed, emaciated, slightly icteric man. His radial arteries are atheromatous, his pulse regular. The upper limit of the heart is at the second interspace; the right border at the level of third rib, 5.6 cm. to the right of the median line; the left border at the level of the fifth rib, 13.2 cm. to the left of the median line. The apex of the heart is not made out. Its action is regular and no murmurs are present.

Lungs are of good resonance, except on the right side, below the mid scapular region, where there is an area of dulness. A few moist rales are present chiefly in the bases.

The liver flatness begins at the fourth rib, and extends downward to a point 2.5 cm. below the umbilicus. A large part of the abdomen is occupied by an easily palpable tumor mass, whose lower edge can be felt 5 cm. below the umbilicus. This edge is irregular and blunt. Beginning at the mid line it can be traced to the right in an outward and slightly downward direction for 5 cm., but from here it dips more perpendicularly toward the pelvis. From the mid point toward the left, it can be traced outward and slightly upward to its intersection with the left mammillary line, where it again dips downward and outward toward the pelvis (Plate 2). The surface of the tumor

August, 1900. Slight amount of blood per rectum.
 November, 1900. Emaciated, icteric, liver border as in photograph.
 May, 1901. Very weak, emaciated, ascites, marked hydrops of legs.

August, 1901. Death. Known duration 35 months.
Postmortem Examination, August 20, 1901.—B. C. H., U.01.24.—Body of a gracefully built, emaciated man 166 cm. long. Rigor mortis present. Slight yellowish tinge to the skin. Marked edema of legs, the skin of which is tense and shiny. Abdomen is immensely distended, and at the umbilicus measures 111 cm. in circumference. The lower border of the ribs flares out at a wide angle to contain the immense tumor within.

The abdominal wall is very tense and very thin. Through it the nodulation of the tumor is distinctly visible. On opening the abdominal cavity a considerable amount of fluid escapes under pressure. The abdomen contains several thousand cubic centimeters of clear fluid. The entire upper and middle portions of the cavity are occupied by a greatly enlarged nodular liver. The point of insertion in the liver of the round and falciform ligaments is displaced to a point 11.5 cm. to the left of the median line. The distance between the tip of the ensiform cartilage and the lower border of the liver is 25 cm. From the tip of the right ninth rib to the lower border of the liver is 22 cm., from the tip of the left ninth rib to the lower border is 20 cm. From the costal margin to the insertion in the liver of the round ligament is 13 cm. The liver is entirely free from adhesions, and is held in place only by the normal ligaments. The diaphragm reaches to the third rib on the right side, to the fourth space on the left side.

The stomach lies behind the tumor mass, about in the normal position, and shows no nodules or other abnormality. Just below the border of the liver a portion of the transverse colon appears. Below this the space is occupied by coils of small intestine. Duodenum, jejunum, ileum, and colon are normal.

Pancreas is normal.

Mesenteric lymph nodes are not enlarged. A few of the retroperitoneal lymph nodes in the region of the pancreas are slightly enlarged, white, and firm.

The spleen is crowded into the left upper quadrant of the abdomen, is firmly adherent to the diaphragm, and is not enlarged.

The kidneys occupy a normal position. On section they are pale and firm. The capsule is slightly adherent, tearing away a small amount of kidney substance on removal. Adrenals are normal.

The right lung is firmly adherent everywhere to the parietes. It is greatly compressed and the lower half is entirely atelectatic. The upper half is air-containing, but very edematous.

The left lung is free from adhesions, air-containing, and very edematous. On the surface of the lower lobe are numerous whitish and reddish areas 2 to 3 mm. in diameter, composed of many short, delicate, filiform projections.

The heart is normal.

The aorta shows a few small patches of sclerosis.

In the rectum the mass described below can be palpated, but does not occupy a great portion of the pelvis, and there are no evidences of its having caused any obstruction.

Bladder and prostate are normal.

The liver (weight, 15,110 gms., 33.31 pounds avoirdupois) measures 38 cm. in greatest length from right to left border, 39 cm. in greatest length from superior to inferior border, and 19 cm. in greatest anteroposterior diameter. It is coarsely nodular. (Plate 3.) The nodules vary in diameter from 2 cm. to 8 or more cm., and project above the general surface from .5 to 3 or 4 cm. With the exception of these coarse nodules the surface of the liver is smooth and glistening, and there are no evidences of adhesions except along the lines of attachment of the normal ligaments of the liver. The general surface of the liver is dark red to pale red or pink in color. It is mottled with numerous small and fairly large, almost white areas, and a smaller number of somewhat similar, but bluish-black areas. Many of the larger nodules are mottled in color, dark red, brown, bluish-black and white. None of the nodules shows umbilication, but on palpation some suggest fluctuation, as if the central portions were much softened. The superior surface to the right of the falciform ligament is almost smooth in contradistinction to the coarsely lobulated appearance of the other parts of the liver, and is mottled with many small whitish and greenish areas, none of which measures more than 5 cm.

On section (Plate 4) the liver shows large and medium-sized, rounded areas of a dark red color. About some of these there appears to be an indefinite connective tissue capsule, but many are in direct contact with liver tissue. Between these masses the liver is yellowish-gray and appears fairly normal. There are some areas of liver tissue as large as 5 by 7 cm. None of the nodules seen in section shows evidence of central softening.

The gallbladder is normal, free from adhesions, lies in a deep groove between nodular projections of the liver, and is dark green in color. Bile ducts are normal.

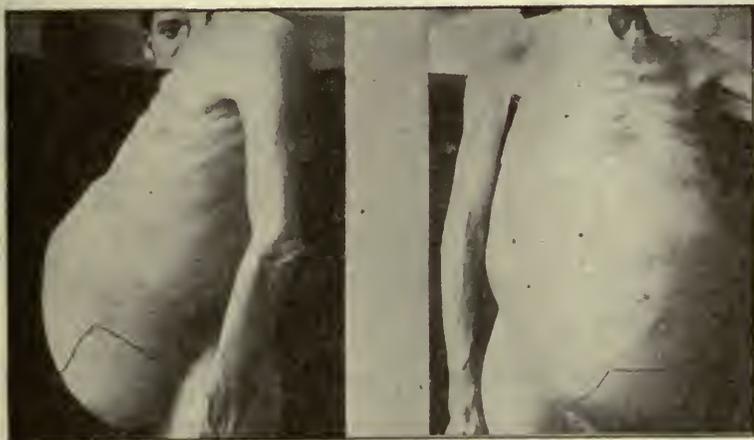


Plate 2.

thus bounded is hard, with several smooth mounds and ridges that are easily seen. Some of these have an elastic feel as though of fluid under tension.

The abdomen is tense and protuberant. Below the tumor edge there is tympany, except in the extreme flanks. The girth at a point 10 cm. above the umbilicus is 105 cm.

BLOOD COUNTS.

November 8, 1901:	
Red blood globules.....	3,704,000
Leukocytes.....	8,000
Hemoglobin.....	75%
Differential count of 200 leukocytes:	
Polymorphonuclear neutrophils.....	45.5%
Small mononuclears.....	31.5%
Large mononuclears and transitionals.....	9.5%
Eosinophiles.....	13.5%
November 24:	
Red blood globules.....	3,952,000
Leukocytes.....	9,800
Hemoglobin.....	50%
Differential count of 333 leukocytes:	
Polymorphonuclear neutrophils.....	50.8%
Large and small mononuclears.....	38.7%
Eosinophiles.....	10.5%

Three days after admission the patient returned to his home.

During all this time the patient's appetite remained good. He had a light general diet, with much milk. Occasionally there was distress after eating. Pain was never a prominent symptom, and often was entirely absent. Accumulation of fluid gave no trouble until the last few months of life, and then was most in evidence in the legs, which were frequently tapped, with much relief. Often as much as three quarts of fluid escaped during twelve hours. The abdomen during this time contained fluid, probably as much as it could accommodate. During this period his symptoms were such as could be explained by the mechanical pressure of an enormously enlarged liver on neighboring organs, combined with an increasing exhaustion. He died August 19, 1901.

Clinical Summary.—Previous history negative.

September, 1898. Loss of strength, dyspnea on exertion, swelling of the abdomen, liver border below the umbilicus.

May, 1900. Confined to house, feet begin to swell, abdomen continues to enlarge.

The portion of the inferior vena cava attached to the liver is normal.

In the rectum, situated approximately 7 cm. above the internal sphincter ani muscle, there is a slightly nodular, soft, brownish-black excrescence which projects 1 cm. into the lumen

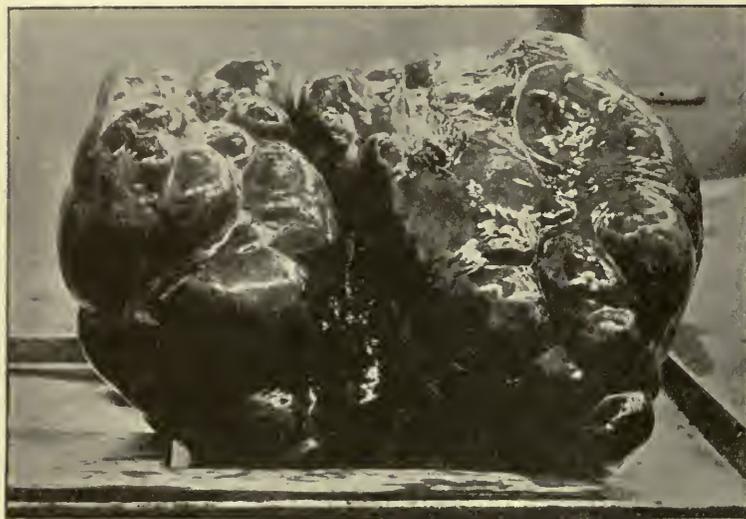


Plate 3.

of the rectum. The base of this is formed by a hard, indurated mass, whose maximum diameter is 3 cm. There is no evidence of ulceration of mucosa in this region. In the areola and connective tissue between the rectum and the sacrum is a hard, indurated mass, 10 cm. long, 3 cm. broad, and nowhere more than 1 cm. thick. This follows up behind the rectum, but is nowhere attached to it except at the site of the above-described excrescence. This excrescence is situated 2.5 cm. above the lower limit of this indurated mass.

Section through the middle of the nodule in the rectum shows an outer irregular border of purplish-black gradually shading into grayish-white in the center. This tissue is soft. Beneath this the tissue is hard, in places is glistening white, in others reddish with a few narrow bands of glistening white.

Anatomic Diagnosis.—Adenocarcinoma of the rectum, invasion of postrectal tissues, metastases in postperitoneal lymph nodes and in liver, compression and atelectasis of right lung, slight chronic diffuse nephritis, anasarca, hydroperitoneum.

Microscopic Examination.—In sections through the primary nodule in the rectum the surface is covered by mucous membrane. The outer one-third of this is necrotic, and shows no nuclear stain. The deeper parts stain fairly well. Much of the epithelium lining the glands has desquamated. That remaining intact is of the type normal to the rectum. In some places the mucosa is sharply limited, and the bases of the glands lie in a supporting framework of fibrous and elastic connective tissue, beneath which there is a well-formed muscularis mucosae layer. In other places there is no such line of demarcation, and the glands pass directly into the deeper tissues. All evidences of the other layers of the intestine—submucosa, muscularis and serosa—have disappeared. In place of these there is an adenomatous growth, subdivided by numerous connective tissue trabeculae, and this constitutes the entire thickness of the rectum at this point.

Where the normal glands of the rectum pass into the underlying tumor, the structure is that of fairly regular tubular glands, separated by narrow bands of loose connective tissue. This represents the simplest form of the growth. The greater part of the rectal growth and the metastases in the lymph nodes (postrectal and post-pancreatic) and liver are of a greater complexity.

In the latter the intertubular stroma is greatly reduced, often being represented by a single strand of connective tissue or a slight meshwork in which a small blood vessel is supported. The tubules have elongated and subdivided. The lumen in places is dilated, and filled with desquamated cells or red blood globules; in others it is narrowed, or has entirely disappeared by coalescence of the two layers. The result of such changes is the formation of large cellular areas separated by broad dense connective tissue trabeculae. In the cellular areas there is a very small amount of loose connective tissue in which the cells are grouped into gland spaces. Everywhere this adenomatous structure is present, though often obscured by desquamation of cells or approximation of two layers of lining epithelium; it is very evident where hemorrhage has taken place into the lumina and distended them into definite spaces lined by epithelium.

The epithelial cells of the tumor are columnar. Their height

varies, but in a given field they are of quite uniform size. They have oval vesicular nuclei, with fine chromatin granules. Most of them show one or two coarser chromatin granules, though irregular in contour, suggesting nucleoli. The nuclei are situated distally or in the mid zone of the cell rather than at its basal end. Mitotic figures are not numerous. The cytoplasm is homogeneous. Nowhere are there goblet cells. The epithelial cells form a layer, in places one cell deep, in others several cells deep. The desquamated cells are round and their nuclei are often shrunken and stain intensely. In many places the epithelial layer has separated from the basal membrane. The stroma of the tumor consists almost entirely of fibrous tissue, but in the coarser trabeculae there are numerous elastic fibers without any apparent relation to bloodvessels, beside those in the walls of the bloodvessels.

The postperitoneal lymph nodes show metastases of the same character as the primary growth in the rectum. In some nodes this almost completely replaces lymphoid tissue; in others it is present as very small nodules.

In the liver the growth is similar, though here there has been very extensive hemorrhage into the nodules. In most of these areas the red blood globules are discrete and remarkably well preserved. The liver tissue about these nodules is compressed, and the liver cells much atrophied. Radiating out between the liver lobules are broad bands of connective tissue, often containing new-formed bile ducts. There is a slight intralobular connective tissue increase, and in places small groups of separated atrophied liver cells are enclosed in the connective tissue trabeculae. There is very little evidence of necrotic changes in these liver nodules.

The villous processes described on the pleural surface of the lung are composed of loose vascular connective tissue. The other organs present no noteworthy lesions.

The greatest interest in this case lies in the enormous size of the liver. That secondary carcinoma produces the largest livers is generally conceded, and numerous cases have been reported in which the liver attained great size. Thus there are a number of cases with weights between



Plate 4.

8,000 and 10,000 gms. (18 to 22 pounds avoirdupois). Gordon⁴ describes one of 24 pounds and Axel-Key⁵ one of 25 pounds. Gould and Pyle⁶ ascribe to Kraus a case in which the liver weighed 25 pounds and to Gooch one

weighing 28 pounds. We have found one case exceeding ours in weight. This is one reported by Powell.⁷ He says, speaking of the size of the liver: "At a medium its ordinary weight may be estimated at about 3 pounds or somewhat more; but the variations of its weight and relative bulk are in many cases of disease most striking. I have seen a liver weighing a little short of 40 pounds." However the nature of the process in these last three cases is not stated.

A second point of interest in this case is its long duration, more than 35 months. Most writers state that a duration of one year is unusual, and those cases lasting two years are very exceptional. Leichtenstern² in 19 cases, collected from the Tübingen clinic and statistics of Frerichs and Murchison, finds an average duration of 20 weeks. In 25 cases, from Biermer's clinic, the average is 17 weeks. In³ 13 of our cases, in which the approximate duration could be estimated, the average is 25 weeks.

It is in just such a case as the one we have reported that a long duration might be expected. The primary growth was in the rectum and offered no obstruction to the lumen of the intestine. Hence interference with the digestive functions was reduced to a minimum. With a good appetite and no intestinal obstruction, nutrition was maintained, and in this case the symptoms seemed to depend on the mechanical obstruction of the enlarged liver. On the other hand, the larger number of cases follow a primary growth in the upper gastroenteric tract, where there is greater possibility of hindrance to metabolism and the downward course might be expected to be more rapid. Again with the longer duration there was greater chance for liver enlargement. It is of interest to note in this connection that the second largest liver in our series also occurred in a case in which the primary growth was low down in the gastroenteric tract, but here unfortunately the patient was admitted in a moribund condition and no history was obtainable.

In conclusion we wish to express our thanks to Dr. Clement and to the clinical and pathologic staffs of the Boston City Hospital for data and assistance.

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THROUGH-AND-THROUGH INTESTINAL SUTURE, WITH REPORT OF ADDITIONAL CASES.¹

BY

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In reviewing the literature of intestinal surgery, we find that the suture has passed through the following phases or progressive steps: 1. The suture including all coats, with the knot on the serosa, in the peritoneal cavity. 2. The suture including the peritoneum only. 3. The suture including the peritoneum and the muscularis. 4. The suture including the peritoneum and the muscularis, and penetrating but not perforating the submucosa. 5. The suture including all coats, with the knot on the mucosa, in the lumen. At the present time the question appears to be, whether to perforate or not to perforate all coats of the bowel wall.

¹ Read before the Mississippi Valley Medical Association, October, 1902.

That this was the trend of thought at the end of the nineteenth century is unmistakably evidenced by the following quotations:

N. Senn: "Any surgeon who hastily transfixes the bowel with a needle from 30 to 40 times in applying the Lembert suture is liable to perforate the whole thickness of the bowel once or more, and the puncture may become the seat of a perforation and the direct cause of a fatal peritonitis."

O. H. Allis: "The rule that the serous coat must only be pierced is no longer entertained; and the operator will act wisely if he penetrates the thickness of the intestinal wall."

Edw. Martin: "In regard to all intestinal sutures, it seems clear that the dread of penetrating the mucosa is one of the legacies left from preantiseptic days. The peritoneum will stand a great deal of insult if it is not soiled, and it will stand some soiling, if it is not insulted; but the combination is deadly. If there be infection carried by the thread traversing the mucous membrane there are few records to prove it. If the sutures are properly applied, some of them are almost certain to penetrate some part of the mucous membrane."

C. N. Dowd: "Can we put our sutures through the entire intestinal wall in order to gain this firm support? This seems to me to be the most important question concerning intestinal sutures at the present time, and the answer should be yes."

While the through-and-through suture was brought to the attention of the profession by Maunsell, and emphasized by Wiggin, who was the first to repeat the method of Maunsell in America, he was not a pioneer in this particular phase of intestinal suturing, being antedated by Bishop in 1885, and by Vesein in 1871. (Not to mention the old and obsolete methods, such as the "Glovers" and similar ones which were utilized before the Lembert principle of seroserous apposition had been advanced.)

Bishop described and employed a perforating suture in his so-called "continuous-interrupted" stitch, which like all others of this variety, not excluding Maunsell's and its many modifications, presents a weak spot which necessitates secondary or retaining stitches. Vesein utilized a suture that passed through all the layers of the intestinal wall, but was secured by merely a double twist of the ends instead of by their being tied in a knot.

The through-and-through suture knotted on the outside, on the serosa, without retaining stitches, was presented in September, 1892, by M. E. Connell with experiments which seemed to be entirely satisfactory. (This method differed from the older methods of perforating stitches, knotted on the serosa, in that the seroserous apposition and a diaphragm take the place of the attempt to unite the histologic elements, layer for layer, of the older methods.)

In the literature three cases are found in which this method has been employed upon the human being, and with perfect recovery of the patients. But despite this favorable outcome, both experimentally upon the lower animals and in actual experience upon the human being, it is acknowledged by the majority of authorities that the safest place for the knot in perforating stitches is within the lumen of the bowel.

It may be regarded as axiomatic that the ideal location for the knot of an intentional perforating stitch is outside of the peritoneal cavity in the lumen of the intestine; the term intentional is here used advisedly. It must necessarily follow that in an unintentional perforating suture the knot ought to be similarly located, *i. e.*, in the lumen.

If these two statements are true (and it has been shown that the great majority of intentional non-perforating sutures are in reality unintentional perforating sutures, owing to the comparative sizes of the needle and the submucosa) then the desirable situation for the knot, in practically all intestinal sutures, is *in the lumen of the gut*.

In the comparatively primitive methods of Bishop and Vesein an attempt is made to place the knot upon the mucosa. In the former the knot is tied in the line of union and then pushed into the lumen, a very unsafe procedure, and one which necessitates the introduction

of retaining or reinforcing stitches, and the principle of which is to be found resurrected by Dowd in the *Annals of Surgery* for July, 1902. In the latter (Vesey) the attempt is made, but as a result the security of the union rests upon a double twist of the threads instead of a firm and secure knot.

The method of Maunsell is an improvement upon the earlier attempts, in that all of the stitches at the site of the enterorrhaphy are securely knotted in the lumen. In order to do this a complicated invagination is necessary, and as a result a longitudinal incision at the convex border must be closed with sutures that include but a part of the entire wall, and are tied upon the serosa. This method of Maunsell's has been used quite extensively, and with almost uniform success. (In 1899, 29 cases were collected from the literature.) As is usual with successful procedures, it has been modified by many investigators, notably Cheatle, Hartigan, Ullman, and Wiggin. Cheatle and Hartigan, each independently of the other, placed the second incision closer to the line of union; in fact, making it continuous with the circular incision at the convex border, in this manner doing away with the objectionable invagination. Cheatle afterward suggested that this longitudinal incision be closed transversely to the long axis of the bowel, *a la* Heinecke-Mikulicz, and so reduce the danger of stenosis. Ullman, after invaginating as does Maunsell, instead of suturing the cut ends, inserted a hollow cylinder of carrot and tied a circular ligature around the carrot and the two invaginated ends. The invagination was then reduced and the second incision closed with Lembert sutures.

Each of these methods are modifications, as claimed by their originators (improvement or not), in which the principle of the original method is retained and utilized. The essential and characteristic feature of the Maunsell operation is a complete line of through-and-through stitches knotted in the lumen at the site of the enterorrhaphy, and at a more or less distant point an incision by means of which it was possible to so place the stitches, and then the closure of this second incision by means of Lembert sutures. In December, 1898, Dr. Fredk. Holme Wiggin, of New York, presented what was termed a modification of the Maunsell method, in which all but the last few stitches of the enterorrhaphy are closed with perforating stitches, such as Maunsell recommended, through-and-through circular stitches tied in the lumen directly over the seam of the union. As it was deemed impossible to place the knots of these last few stitches in the lumen securely without resorting to the second incision, the operation was concluded by utilizing Lembert sutures for this final part of the procedure.

This method will be found to differ radically from that of Maunsell in that the line of union is but *partially* united by perforating stitches. The completeness, thoroughness and security, at the site of the union, for which Maunsell was willing to go through the difficult and complicated procedure of invagination, followed by the closure of the second incision, are entirely disregarded in the Wiggin "modification." It was evidently in an effort to do away with just such weak spots that Maunsell devised his operation. Had it been considered advisable to introduce through-and-through sutures but a part of the way around the circumference of the bowel, it is not likely that he would have made his second incision and invagination. The fundamental principle of the Maunsell method is perforating sutures tied in the lumen throughout the entire line of union. Any method which does not conform with the fundamental principle can hardly be consistently classed as a modification.

Oscar H. Allis, in 1902, strongly advocated the suturing of the entire thickness of the gut wall in intestinal anastomosis. His method is similar to that of Dr. Wiggin in that the last few stitches are inserted from the serous aspect of the bowel and are consequently knotted

on the outside of the bowel wall. But it is strikingly different in that these last few stitches, or the last stitch, are not Lembert, but instead deliberately include all the different layers of the intestinal wall, and are then knotted upon the serosa, the same as M. E. Connell advocated in 1892.

The perforating suture has been employed, not only in simple enterorrhaphy as we have seen, but also with the use of artificial aids in suturing. Such a suture was used with the bone plate and is today employed with the Murphy button. In both of these methods and their many modifications the through-and-through suture is tied upon the serosa; thus at first sight appearing to be contrary to the axiom regarding the location of the knot in stitches of this character, but on second thought this marked difference will be found between such sutures when employed alone and when with a foreign body. In the latter instance, the knot, while on the peritoneal surface, is shut off from the general cavity by the serous apposition external to the knot caused by the areas of the serosa brought together by the foreign bodies, while in the former instance the knot is in the free peritoneal cavity and not excluded by any adhesions of serosa external to it. In Breitenbach's suture a similar condition is found, the knot on the serosa, but the direction of the stitch places the knot toward the cut margins and thus it is excluded, more or less completely, from the free peritoneal cavity by apposed serosa.

A very pertinent question at this time might be put thus: Why should we employ a through-and-through suture in preference to a suture that aims to penetrate but a portion of the entire thickness of the intestinal wall?

Since the days of Lembert it has been handed down as an iron-clad rule that any stitch involving the serosa must not include the mucosa. But that this rule was being constantly broken, either consciously or unconsciously, no one can doubt, for as early as 1887 Senn says "Any surgeon who hastily transfixes the bowel with a needle from 30 to 40 times in applying the Lembert suture is liable to perforate the whole thickness of its wall once or more, and the puncture may become the seat of a perforation and the direct cause of a fatal peritonitis."

This rule of Lembert is to be found in force and emphasized as late as 1891 by Halsted, of Baltimore, in his article which calls attention to the clinical importance of the submucous layer of the intestinal wall.

The fact that the submucosa is strong and resisting, and capable of securely holding a stitch when once inserted, and that the other layers are of little value in this respect, is of the utmost importance in intestinal surgery, the credit of which adds another to the many laurels of that great teacher and surgeon, Samuel D. Gross.

Although the work of Gross upon this point is so complete and perfect that nothing has been added to it up to the present time, and it was completed and published in 1843, it did not attract any attention until Halsted in 1891 presented his work, which was, in effect, a repetition of that done long before by Gross. For some reason, possibly because the profession was not prepared for such an advance at that early date, the work of Halsted was proclaimed as an epoch-making event; while the previous work of Gross, similar as far as this important point is concerned, and which emphasized this particular phase of the intestinal suture, has been disregarded, or rather lost sight of, only to reappear at this later date with greater brilliancy.

The works of Gross and Halsted as regards the submucosa differ in this one particular. Gross says "it is the membrane *through* which the surgeon should always carry his needle in sewing up wounds of the intestines."

He evidently realized the comparative thinness of this layer; Halsted, on the other hand, failing to consider the comparative sizes of this layer and the ordinary

intestinal needle, states that the suture must "penetrate but not perforate" the submucous layer. I have shown¹ that the usual intestinal needle is approximately six times as large in diameter as the thickness of the inelastic human submucosa, rendering such a procedure as "penetration without perforation" an impossibility, at least practically impossible, for the surgeon of average training and manual dexterity. In order to emphasize the point I take the liberty of paraphrasing a few lines written by the immortal Abraham Lincoln:

Some surgeons may claim to split the submucosa all of the time, and all surgeons may claim to split the submucosa some of the time, but all surgeons can not claim to split the submucosa all of the time.

With this splitting of the submucosa out of the question, we must choose between two evils: the danger of not including the submucosa, with yielding as a result, on the one hand, and the real, or hypothetical, danger of perforating into the lumen, with "capilarity" as a result, on the other. To do away effectually with both of these dangers, the through-and-through suture, knotted in the lumen, is recommended.

Through-and-through to prevent the possibility of not including the submucosa, and thus absolutely excluding the yielding of stitches. This element of danger (yielding), according to Rosenthal, is the cause of the peritonitis in 50% of the cases which terminate fatally, and in speaking of which Edward Martin says: "Cases of fatal peritonitis are not due to penetration of the mucous coat, but to failure to include the submucosa."

Knotted in the lumen in order to diminish, if not exclude, the danger of leakage. In a suture that penetrates all the layers of the intestinal wall, with the knot on the serosa, the probability of leakage occurring is considerably greater than is this same danger when the knot is situated upon the mucosa within the bowel. Cluinski states that in all cases of union, by suture alone, in which leakage occurred, the seat of the leakage was at the site of the knot. Had the knot been within the lumen this leakage would, in all probability, not have taken place, for under such circumstances the knot, as well as the entire suture, would have been excluded from the peritoneal cavity; or, as Dr. Ferguson expressed it, "The possibility of leakage is minimized, as all coats of the bowel are included in its grasp. The mucosa is friable and the knot sinks in to the submucosa. All the knots being on the internal surface of the bowel, it takes but little seroserous lymph to seal up the peritoneal surface, and any drainage that takes place along the suture from the mucosa toward the peritoneum will at once be returned by capillary attraction to the inside of the bowel again."

The two advantages, (1) less danger of yielding or tearing; (2) less danger of leakage, even though yielding or tearing does not occur, while constituting the chief and foremost reasons for utilizing the perforating suture, are not the only advantages to be derived from its use. Among others of no inconsiderable importance may be mentioned (3) smaller diaphragm; (4) diminished adhesions; (5) less danger of necrosis; (6) no foreign body; (7) decrease in time.

3. *Smaller Diaphragm*.—In every method of suture which adheres to the Lembert principle, *i. e.*, seroserous apposition, a diaphragm, large or small, will invariably be formed, the size of which depends upon the method of union employed and the care with which the technic has been carried out. In a method requiring two or more rows of sutures the lumen will, of necessity, be encroached upon to a greater extent than it will if but one row of sutures is employed.

Dowd in his recent article credits Ballance and Edwards with saying that the Maunsell reinforced by the Lembert suture gives practically no diaphragm. This is directly opposite to the result of my experiments,

and also contrary to the statements made by these same gentlemen in the *Med. Chir. Trans.*, 1896, in which they say that while performing autopsies after the Maunsell operation the circular line of union was often located only with the greatest difficulty, owing to the fact that there was visible practically no diaphragm, while the location of the longitudinal incision, which was closed with Lembert's, was plainly visible and marked by a prominent ridge.

In the *Annals of Surgery*, June, 1902, Martin, of Philadelphia, cites an experiment as follows: "In one dog subjected to an end-to-end suture by the Connell suture and lower down to a similar procedure by the O'Hara forceps, some hard feces which passed through the upper line of junction lodged in the lower and produced an obstruction." This possible source of failure and danger is spoken of by Senn, in the following terms: "If in applying the Czerny-Lembert suture, more than a few lines of the margin of the bowel is inverted between the two rows of sutures there is great danger of causing primary traumatic stenosis by the projecting circular ring in the lumen of the bowel."

Murphy has shown that a broad serous approximation is not necessary, that a line of approximation is as good as half an inch; therefore, it is not advisable to include too large a portion of the gut wall in the bite of the stitch, the smaller the bite the smaller the diaphragm will be. Dr. Bartlett says: "The lumen in my five-day specimen was far too narrow, a result of the peritoneal sutures being placed too far from the free end of the gut, and of too much tissue being inverted in consequence. The remedy for this is apparent."

4. *Diminished Adhesions*.—The knot and free ends upon the serosa are prolific causes of the formation of adhesions, which are followed by their characteristic disagreeable, if not dangerous, symptoms. Adhesions are caused by raw (denuded of endothelium) surfaces or foreign bodies. By placing the knot and ends within the lumen, outside of the peritoneal cavity, the chances that these objectionable adhesions will be formed are materially decreased. To show that the importance of these adhesions is not exaggerated we refer to Halsted, who says: "The success of any form of intestinal suture is inversely proportionate to the extent of adhesions which result from the employment of the particular method."

5. *Less Danger of Necrosis*.—The possibility of the inverted margins of the cut ends being shut off from their blood supply and in consequence becoming gangrenous, has been pointed out by many, especially by Maunsell and by Senn, the former stating: "A double line of sutures should never be applied in intestinal surgery, it obstructs the circulation too much, and interferes with firm plastic peritonitis, and in some cases causing gangrene of the inverted portion of the gut." And the latter in the statement, "That the second row of sutures in the Czerny-Lembert has often been the cause of gangrene of the inverted margin of the bowel would not be difficult to prove by many postmortem records."

By utilizing but one row of sutures this danger of necrosis of the inverted margins of the cut ends can be eliminated.

6. *No Foreign Bodies*.—A perforating suture will invariably pass away into the lumen of the canal and be eliminated with the feces. A Lembert suture will become encysted, remaining as a foreign body, or slowly work its way through the intestinal wall into the canal and then away with the fecal current. If the Lembert suture does escape into the alimentary canal it will occupy a much longer time in doing so than will the stitch that includes the whole thickness of the intestinal wall.

Dr. Bartlett¹ presented a specimen in which all of the interrupted sutures but one had passed away within the

¹ Journal American Medical Association, October 12, 1901.

¹ Medical Bulletin Washington University, April, 1902.

first 16 days. In the writer's experiments in a 21 day specimen the continuous suture was found in the lumen, entirely free from the site of the union. We have found that a through-and-through suture will invariably pass away, and much sooner than will the Lembert suture.

In the perforating suture, with the knot placed on the mucous membrane, there is no burrowing of this bulky part of the stitch through the tissues to induce an irritation which may extend beyond the safety line.

The final outcome after the employment of this stitch is a clean adhesion of the serosa, leaving a union in which there is no foreign body of any description, not even a buried suture.

7. *Decrease in Time.*—By using but one row of stitches instead of two or more, the time of the operation is materially decreased. As is likewise done by the employment of the square, or what has been termed the "side-knot" stitch instead of the circular or "top-knot" stitch of Maunsell, as it decreases by one-half the number of knots to be tied.

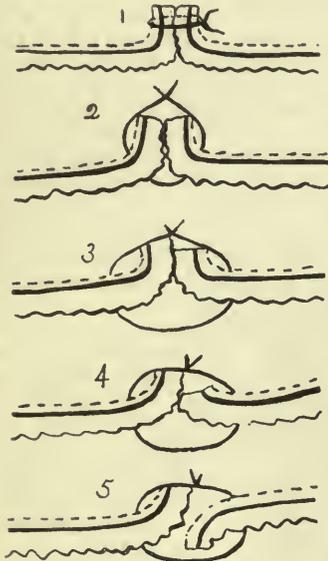


Fig. A.

The technic of introducing and tying the last stitch will occupy but a minute after a little practice. Regarding this technic we take the liberty to quote from De-Forrest Willard, who, in speaking of this method, says: "and was struck with its simplicity and with the rapidity of the operation." And from Alex. Hugh Ferguson: "The technic of the operation can be readily picked up by once performing the operation upon the dog or cadaver." And I might add—even upon the finger of a glove.

In speaking of the tying of the last knot in this method, Dr. Wiggin in a recent article says: "It would appear to be necessary, after separating the united tissues by passing the needle from the outside of the bowel into the lumen between them, to bring them into close approximation again by means of a Lembert suture, otherwise leakage of the intestinal contents might occur at this point."

This is, as stated in the above quotation, merely an appearance. The use of the words "united tissues" might be misleading, as no union exists at this time; the two walls are merely held in serous apposition by means of the stitches already inserted, and the needle is simply allowed to pass between them. No such leakage has occurred in a very extensive experience upon dogs, dating from October, 1898, when it was first accomplished by me, nor has leakage at this or any other point been noted in any of the cases in which this method has been employed upon the human being.

Upon a careful examination of the bowel walls at this point it is found that the cut ends are inverted, forming a diaphragm, with perfect serous apposition (see Fig. 4). Here, then, is found all that is essential for the establishment of a rapid and firm union, *i. e.*, seroserous apposition and at the same time all that is necessary to prevent leakage, *i. e.*, the diaphragm with the valve-like action. This diaphragm, which acts like a valve, is of the greatest value in preventing leakage, possibly of even more importance than serous apposition. Pressure from within the lumen will cause the two inverted ends which constitute the diaphragm to be forced more closely together. It is this fact, the same in principle as

is the prevention of the regurgitation of urine from the bladder into the ureter, that will and does prevent leakage of the intestinal contents after enterorrhaphy. The greater the force from within, the sutures not yielding, the closer will the opposite cut ends be held together, and the smaller will be the likelihood of the contents escaping.

Leakage is practically excluded, and none the less so, at the point where the needle was passed and the knot tied than at any other place; for the serous apposition at this point was interfered with but for a moment, and that moment before any attempt at histologic repair had been made by nature. As soon as the knot slips back into the lumen the same serous apposition and diaphragm obtains as before.

It is well known that in each and every suturing of the bowel regardless of the method employed, contamination of the serosa is unavoidable, but this is readily counteracted by flushing the area of suture with normal salt solution or the glycozone, which has been so highly recommended. Supposing, then, that some infective material, small in amount as it must be, is carried to the serosa in tying the knot, this, from the viewpoint of Edw. Martin, may be regarded as but a very little additional soiling to that already brought there in performing the enterorrhaphy proper, and no "insult" to the peritoneum.

In speaking of the square or side-knot stitch and the method of tying the last knot, thereby allowing all stitches to be through-and-through, Dr. Wiggin in the same article says: "These changes in detail are, in the writer's opinion, of no practical import."

The square or side-knot stitch should not be disregarded as it is a great improvement over the circular or top-knot stitch of Maunsell, and makes the use of a secondary or retaining stitch unnecessary, which is considered by most all to be essential when the latter is employed.

With the circular or top-knot stitch the two inverted cut ends lie within the circle formed by the suture

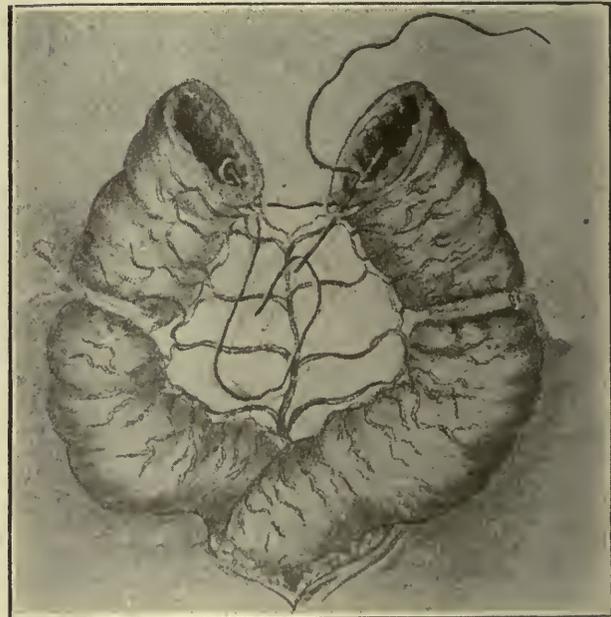


Fig. 1.—Mesenteric stitch.

thread (see Fig. A-2). Unequal pressure upon these ends as they lie within the suture may cause them to assume the relative positions seen in Fig. A-3-4, and with an aggravation of this unequal pressure, as might be caused by gaseous distention, or a mass of fecal matter, an exaggeration of the condition will result which may cause an

eversion instead of an inversion of one cut end (see Fig. A-5). Thus giving rise to a seromucous instead of a seroerous apposition, with great danger of peritonitis or the formation of a fecal fistula as an outcome. Such an occurrence, as the ends slipping by one another, is an absolute impossibility when the square or side-knot stitch is employed (see Fig. A-1). Another reason for using this form of stitch in preference to the circular is that by so doing the number of knots to be tied is reduced one-half and the time of the operation materially decreased. The location of the knot in these two varieties of stitches, while similar in being within the lumen, are different in that in the circular it is situated directly over the line of union, while in the square it is to be found at one side of the seam, out of the way. Regarding this particular form of stitch Bartlett may be quoted as follows: "I had a leak at the mesenteric insertion in an end-to-end anastomosis where the union depended upon peritoneal sutures. This is not likely to occur (and in my experience did not) when the first suture is a square one, through-and-through, as in the Connell method."

If it is, as had been said, "of no practical import" to make the last one or two stitches through-and-through and knotted in the lumen, why not leave three or four, or four or five to be closed with Lembert's? Or, as a matter of convenience, why not exclude the perforating suture entirely and utilize Lembert's throughout the entire union, if it is a matter of "no practical import?" But is it not a fact that the through-and-through suture is better and safer than any stitch that aims to include but a portion of the intestinal wall? That the Lembert suture is not satisfactory is shown by many operators, who have substituted a perforating stitch for it. As a chain is no stronger than its weakest link, we find an enterorrhaphy in which the last stitches are Lembert's no stronger than the Lembert stitch.

To sum up concisely we may, therefore, state in the form of a syllogism: If 12 Lembert sutures are bad, and 10 perforating and 2 Lembert's are better, then 12 perforating sutures are best.

As to the technic, I will describe briefly, and with the aid of drawings, the more important points of the procedure.

The method of tying the final knot within the lumen upon the mucosa, and the square or side-knot stitch;

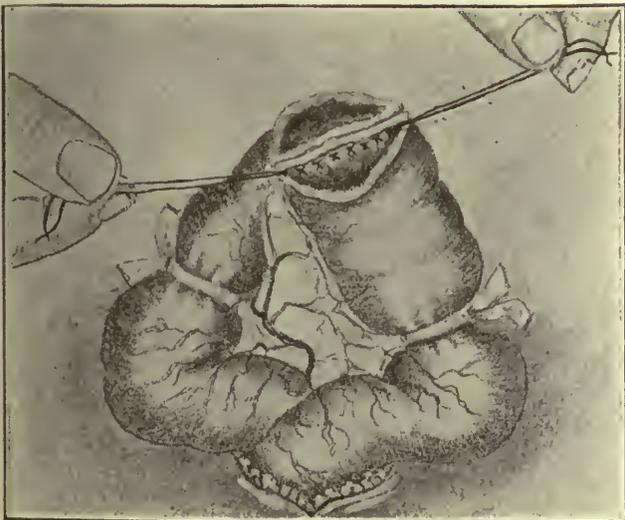


Fig. 2.—First third sutured end stitches used as guy threads.

these two details are probably the only, or at least the most important, innovations. As stated on previous occasions, either the interrupted or the continuous suture may be employed, the choice depending upon the

teaching or the experience that the operator has had. This method may be applied equally well in circular enterorrhaphy, lateral anastomosis, pylorotomy, pyloroplasty, gastroenterostomy, and in incised wounds of intestine or stomach. In fact, under any conditions when the ordinary sutures may be employed.

In using the interrupted suture, the first stitch should be taken at the mesenteric attachment. (See Fig. 1.) This stitch is of the greatest importance, on account of the separation of the serous covering of the bowel at this point, and great care should be exercised in securing a perfect serous approximation at this

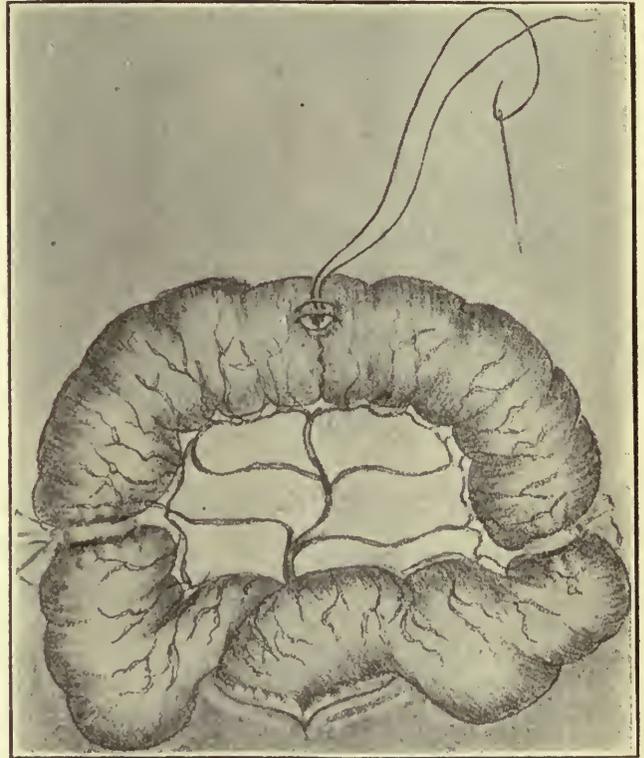


Fig. 3.—Last stitch in last third.

point. In order to do this in the most satisfactory manner, a stitch should be introduced as follows: The needle is made to enter the bowel wall of one cut end from the lumen, perforate all coats and pass through the serosa of one side of the triangular space formed by the separation of the serous coats; then on over and through the serosa of the opposite cut end, at the same relative point, side of the triangular space, then on through the wall into the lumen. This completes one-half of the stitch, and is made with one movement of the needle.

The needle is next reversed, and at a distance of about $\frac{1}{2}$ inch (3 mm.) is made to repeat the steps in the opposite direction, *i. e.*, entering the mucosa of the second cut end, passing through all coats of the bowel wall, including the serosa of the triangular space, and then through the serosa of the triangular space of the first cut end, on through the wall into its lumen where the needle end and the free end of the suture are tied in a knot on the mucosa. This stitch, which acts similar to a brad, absolutely secures a perfect serous approximation at this point, which is considered by all to be the most difficult portion of an enterorrhaphy. Dr. Bartlett says: "I had a leak at the mesenteric insertion in an end-to-end anastomosis where the union depended upon peritoneal sutures. This is not likely to occur (and did not in my experience) when the first suture is a square one 'through-and-through' as in the Connell method."

The remainder of the union is closed by stitches exactly similar to this first stitch. The cut ends are held in proper position by any convenient means, such as the Lee holder, the Allis tenaculum forceps, or suspending loops of thread; but the best method in my experience is the plan of introducing a stitch, such as are the other stitches, at a conveniently distant point, and leaving the ends of this stitch long, to be held by an assistant while the intervening stitches are being inserted. (See Fig. 2.) This method has the advantage of consuming no additional time, for when the union is completed up to this stitch and the long ends are of no farther use, they are cut away leaving the stitch itself in place. This method, which I described in 1901, has been adopted by Dr. Wiggin in the description of his method published in 1902.

With the ends thus held in proper position, the introduction of the stitches is a very simple matter, merely one passage of the needle through all coats of both cut ends and then at a

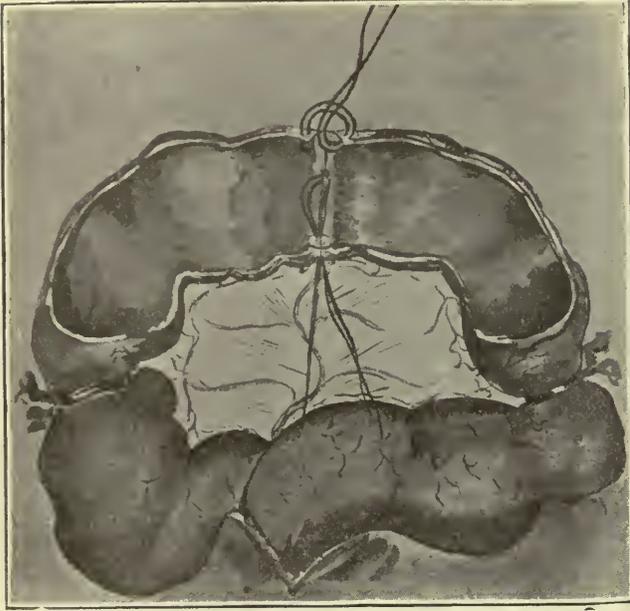


Fig. 4.

distance of about $\frac{1}{8}$ inch (3 mm.) the same process in the opposite direction, and finally, the tying of the knot upon the mucosa at one side of the seam. (See Fig. 2.)

This is repeated till all but a small portion of the union is completed. Owing to the fact that it is impossible to place this last portion of the cut ends in the same relative position that we placed the first part, *i. e.*, seroserous apposition, it is therefore necessary, in order to introduce the same variety of suture, to proceed somewhat differently.

In order to place the last stitch and knot in exactly the same relative position as the first ones we proceed in this manner:

The needle enters the gut wall from the lumen, passes through all coats and emerges from the serosa of one side. It is then made to cross over to the opposite wound margin, and entering the serosa, passes through all the coats into the lumen of this side. The needle is then turned upon itself and made to retrace its steps at about $\frac{1}{8}$ inch (3 mm.) distant, passing from

Now the two ends of the thread which are to make the knot are side by side, emerging from the mucosa into the lumen, and then extending from the ununited part of the enterorrhaphy out of the body. (See Fig. 3.) The needle in introducing this stitch has passed through the cut ends in exactly the same order as it did when inserting the stitches in the earlier part of the operation when the cut ends were held in seroserous apposition, *i. e.*, mucosa, submucosa, muscularis, and serosa, then immediately on into the other cut end through the serosa, muscularis, submucosa, and the mucosa, and then this order repeated in the opposite direction $\frac{1}{8}$ inch (3 mm.) away.

The needle and the free end of the suture now hang side

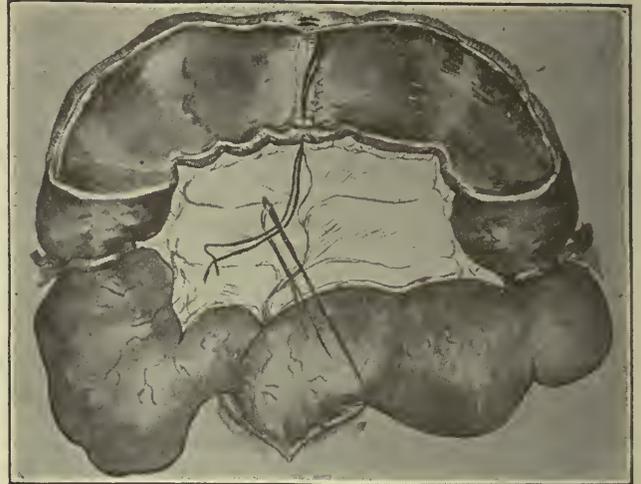


Fig. 6.

by side from the mucosa, and in order that they be tied in a firm knot proceed as follows:

At a point in the line of union, about opposite this last and still untied stitch, a threaded needle is inserted, eye first, between two of the previously inserted and tied stitches. The needle is passed between the apposed serous surfaces into the lumen. (See Fig. 4.)

By passing the needle still farther onward it is made to present at the location of the last stitch, where the ends of the suture still protrude, and where the surfaces are not united. By slightly withdrawing the threaded needle a loop is formed with its thread, into this loop are placed the two free ends of the last stitch, which is to be tied. (See Fig. 5.) By withdrawing the

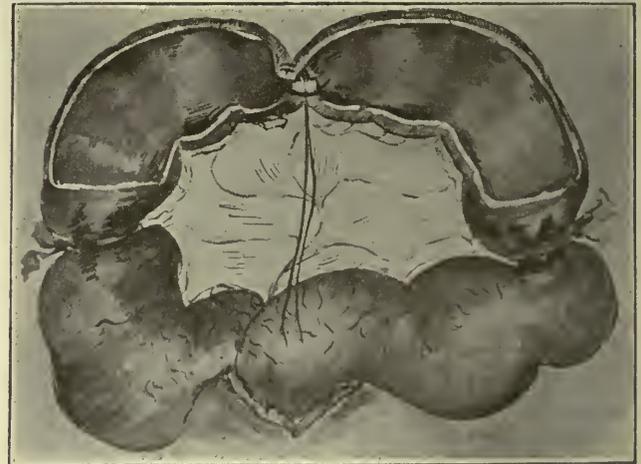


Fig. 7.

needle and in its loop the stitch ends, these ends will be made to present upon the peritoneal aspect of the bowel on the opposite side between two of the previously inserted and tied stitches, *i. e.*, at the point where the threaded needle was inserted. Slight traction upon these ends will cause the remaining portion of the line of union to become inverted, and seroserous approximation will obtain entirely around the site of suture. (See Fig. 6.) Upon greater traction the bowel will become flattened, bringing the mucous membrane upon which the last knot is to be located into intimate relationship with the line of suture at the point where the free ends protrude. (See

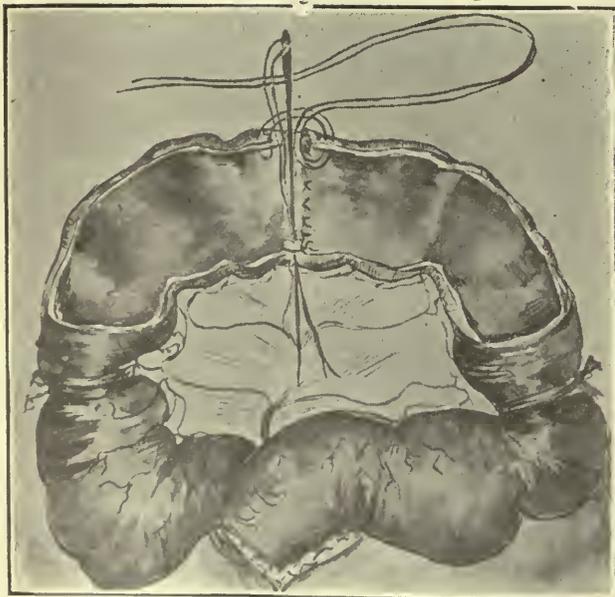


Fig. 5.

the lumen through all coats, emerging from the serosa; then over to the opposite side and entering through the serosa, and finally ending in the lumen of the cut end at which it began.

Fig. 7.) The knot is tied with the bowel in this flattened position, thus avoiding the occurrence of any slack. While still retain-

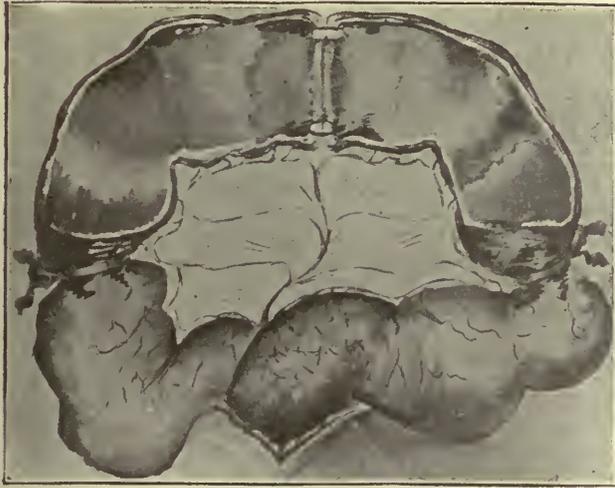


Fig. 8.

ing the tension and the flattened position the ends of the knot are cut off short, so preventing any long free ends in the lumen.

Upon allowing the bowel to assume its normal contour, that of a cylinder, the knot will slip between the already tied stitches into the lumen, and as it is attached to the mucosa of the opposite pole of the diameter of the gut it goes with that portion of the bowel wall. (See Fig. 8.)

By this procedure we complete an enterorrhaphy with all knots on the mucosa, but without the secondary incision of Maunsell.

As to the deaths:

- No. 4 died of shock on the day of the operation.
- No. 9 died on the eighth day, and at the autopsy the site of the operation was perfect.
- No. 11 died one-half hour after leaving the table; was in extremis at the time of the operation.
- No. 19 died of shock 12 hours after the operation.
- No. 25 died one hour after leaving the table; was in extremis at the time of the operation.
- No. 32 died one hour after leaving the table; was in extremis at the time of the operation.
- No. 33 died on the third day after the operation; liver, pancreas, and kidney injured by the bullet.
- No. 34 died on the third day after the operation; at autopsy the line of suture was found intact.
- No. 35 died three hours after the operation.
- No. 39 died on the third day after the operation, with suppression of urine.
- No. 48 died on the fifth day after the operation, and at autopsy the line of suture was found intact.
- No. 50 died 62 hours after the operation, of shock. At the autopsy the anastomosis was found to be in perfect condition.
- No. 51 died on the fourth day after the operation. At the autopsy one of the anastomoses was found in perfect condition, the other to be at fault. "This is possibly explained by the

LIST OF CASES.

No.	Operator.	Indications.	Operation.	Suture.	Material.	Result.
1	F. H. Martin	Fecal fistula	Circular enterorrhaphy	Continuous	Silk	Recovery.
2	E. W. Andrews	Stricture of pylorus	Pyloroplasty	Continuous	Silk	Recovery.
3	E. W. Andrews	Fecal fistula	Circular enterorrhaphy	Continuous	Silk	Recovery.
4	E. W. Andrews	Carcinoma of pylorus	Pylorotomy	Continuous	Silk	Death.
5	Emil Ries	Rent in rectum	Longitudinal enterorrhaphy	Continuous	Catgut	Recovery.
6	W. E. Schroeder	Gunshot wound	Longitudinal enterorrhaphy	Continuous	Silk	Recovery.
7	A. H. Ferguson	Carcinoma of colon	Circular enterorrhaphy	Interrupted	Silk	Recovery.
8	F. G. Connell	Fecal fistula	Circular enterorrhaphy	Continuous	Silk	Recovery.
9	A. H. Ferguson	Carcinoma of pylorus	Pylorotomy	Interrupted	Silk	Death.
10	A. H. Ferguson	Carcinoma of pylorus	Pylorotomy	Interrupted	Silk	Recovery.
11	E. W. Andrews	Strangulated hernia	Circular enterorrhaphy	Continuous	Silk	Death.
12	A. H. Ferguson	Fistula biluocosa	Circular enterorrhaphy	Interrupted	Silk	Recovery.
13	E. W. Andrews	Stricture of pylorus	Pyloroplasty	Continuous	Silk	Recovery.
14	W. E. Schroeder	Biliary fistula	Longitudinal suture	Continuous	Catgut	Recovery.
15	H. O. Walker	Invagination of ileum	Circular enterorrhaphy	Continuous	Silk	Recovery.
16	A. E. Halstead	Stricture of pylorus	Pyloroplasty	Continuous	Silk	Recovery.
17	F. G. Connell	Fecal fistula	Longitudinal enterorrhaphy	Continuous	Silk	Recovery.
18	W. E. Schroeder	Gunshot wound	Circular enterorrhaphy	Continuous	Silk	Recovery.
19	A. H. Ferguson	Carcinoma of pylorus	Pylorotomy	Interrupted	Silk	Death.
20	Chas. Davison	Tuberculosis of cecum	Circular enterorrhaphy	Continuous	Silk	Recovery.
21	D. A. K. Steele	Carcinoma of cecum	Circular enterorrhaphy	Continuous	Silk	Recovery.
22	F. G. Connell	Gunshot wound	Longitudinal enterorrhaphy	Continuous	Silk	Recovery.
23	H. O. Walker	Tuberculosis of colon	Circular enterorrhaphy	Continuous	Silk	Recovery.
24	D. A. K. Steele	Tuberculosis of colon	Circular enterorrhaphy	Continuous	Silk	Recovery.
25	F. G. Connell	Strangulated hernia	Circular enterorrhaphy	Continuous	Silk	Death.
26	A. E. Halstead	Obstruction by Meckel's diverticulum	Longitudinal enterorrhaphy	Continuous	Silk	Recovery.
27	E. W. Andrews	Stricture of pylorus	Gastroenterostomy	Continuous	Silk	Recovery.
28	F. G. Connell	Fecal fistula	Longitudinal enterorrhaphy	Continuous	Silk	Recovery.
29	R. Peterson	Laceration of gut	Circular enterorrhaphy	Continuous	Silk	Recovery.
30	E. W. Andrews	Carcinoma of rectum	Circular enterorrhaphy	Continuous	Silk	Recovery.
31	Edw. Evans	Strangulated hernia	Circular enterorrhaphy	Continuous	Silk	Recovery.
32	Chas. Davison	Strangulated hernia	Circular enterorrhaphy	Continuous	Silk	Death.
33	F. G. Connell	Gunshot wound	Longitudinal enterorrhaphy	Continuous	Silk	Death.
34	H. L. Nletert	Stab wound	Circular enterorrhaphy	Continuous	Silk	Death.
35	H. L. Nletert	Gunshot wound	Circular enterorrhaphy	Continuous	Silk	Death.
36	H. L. Nletert	Gunshot wound	Longitudinal enterorrhaphy	Continuous	Silk	Recovery.
37	A. MacLaren	Laceration of gut	Circular enterorrhaphy	Interrupted	Silk	Recovery.
38	A. MacLaren	Stricture of pylorus	Gastroenterostomy	Interrupted	Silk	Recovery.
39	A. MacLaren	Rupture of intestine	Longitudinal enterorrhaphy	Interrupted	Silk	Death.
40	A. MacLaren	Obstruction by band	Circular enterorrhaphy	Interrupted	Silk	Recovery.
41	A. MacLaren	Abscess opening into gut	Circular enterorrhaphy	Interrupted	Silk	Recovery.
42	Denslow Lewis	Laceration of gut	Longitudinal enterorrhaphy	Continuous	Catgut	Recovery.
43	Geo. T. Vaughn	Carcinoma of colon	Circular enterorrhaphy	Continuous	Silk	Recovery.
44	Geo. T. Vaughn	Fecal fistula	Circular enterorrhaphy	Continuous	Silk	Recovery.
45	Wild Bartlett	Fecal fistula	Longitudinal enterorrhaphy	Continuous	Silk	Recovery.
46	Wild Bartlett	Carcinoma of rectum	Circular enterorrhaphy	Continuous	Silk	Recovery.
47	T. W. Huntington	Fecal fistula	Circular enterorrhaphy	Continuous	Silk	Recovery.
48	T. W. Huntington	Fecal fistula	Circular enterorrhaphy	Continuous	Silk	Death.
49	T. W. Huntington	Fecal fistula	Circular enterorrhaphy	Continuous	Silk	Recovery.
50	T. W. Huntington	Sarcoma of colon	Circular enterorrhaphy	Continuous	Silk	Death.
51	T. W. Huntington	Tuberculosis of bowel	Circular enterorrhaphy (d'bie)	Continuous	Silk	Death.
52	T. W. Huntington	Carcinoma of colon	Circular enterorrhaphy	Continuous	Silk	Death.
53	A. C. Girard	Tuberculosis of bowel	Circular enterorrhaphy	Continuous	Silk	Recovery.
54	G. B. Somers		Circular enterorrhaphy	Continuous	Silk	Recovery.
55	Chas. Davison	Strangulated hernia	Circular enterorrhaphy	Continuous	Silk	Death.
56	C. E. Thompson	Stricture of pylorus	Gastroenterostomy	Continuous	Silk	Recovery.
57	C. E. Thompson	Carcinoma of pylorus	Pylorotomy	Continuous	Silk	Death.
58	C. E. Thompson	Gunshot wound	Longitudinal enterorrhaphy	Continuous	Silk	Death.
59	C. E. Thompson	Carcinoma of pylorus	Gastroenterostomy	Continuous	Silk	Death.
60	C. E. Thompson	Fecal fistula	Longitudinal enterorrhaphy	Continuous	Silk	Recovery.
61	H. O. Walker	Tuberculosis of ileum	Circular enterorrhaphy	Continuous	Silk	Recovery.
62	H. O. Walker	Invagination of sigmoid	Circular enterorrhaphy	Continuous	Silk	Death.
63	H. O. Walker	Volvulus of ileum	Circular enterorrhaphy	Continuous	Silk	Death.
64	W. S. Baggott	Artificial anus	Circular enterorrhaphy	Continuous	Silk	Death.

extreme attenuation of the bowel wall, due to the original infection" (tuberculosis).

No. 52 died two days after the operation; at the autopsy the anastomosis was found to be in perfect condition.

No. 55 died of shock 36 hours after the operation.

No. 57 died in collapse the fifth day after operation. "Autopsy revealed a sloughing of bowel at the side of the Murphy button, complete ring having been removed by button. The stomach and duodenum, closed by Connell stitch, was found united."

No. 58 died five days after operation from an undiscovered wound of the kidney. Autopsy showed wounds in bowel united throughout.

No. 59 died three weeks after operation. Autopsy revealed complete union, no evidence of leakage.

No. 62 died soon after the operation; peritonitis existed at the time of operating.

No. 63 died soon after the operation; general peritonitis marked at time of operation.

No. 64 died 48 hours after the operation, of shock. "There were no signs of leakage discovered at the autopsy."

CONCLUSIONS.

1. The suture that aims to include but a portion of the bowel wall is dangerous: (a) because it is liable to fail to include any of the submucosa, in consequence leaving a weak stitch; (b) because if including any of the submucosa it is almost certain to penetrate the coat, leaving a stitch open to the dangers of capillarity.

2. By utilizing a through-and-through suture the danger of yielding is excluded.

3. By employing a suture that is knotted in the lumen the danger of capillarity is diminished.

4. It is acknowledged that the most appropriate place for the knot when all coats are perforated is in the lumen of the bowel.

5. It is undeniable that when the submucosa has been perforated accidentally the knot ought to be placed inside.

6. It is also undeniable that many so-called Lembert stitches perforate the submucous coat, and thus convert an intentional nonperforating into an unintentional perforating suture.

7. Undeniable, too, that owing to the extreme tenuity of the submucous coat ($\frac{1}{8}$ of the thickness of the needle which is to "penetrate but not perforate" it) we are utterly unable to differentiate between a perforating and non-perforating Lembert stitch.

8. The logical conclusion is that the ideal location for the last and all knots in an enterorrhaphy is outside of the peritoneal cavity, in the lumen of the bowel.

9. As a chain is no stronger than its weakest link it is of practical import that the last one or two stitches be also perforating and knotted in the lumen.

10. The diaphragm by its valve-like action is of great value in the prevention of leakage.

11. The tying of the knot, according to the method described above, does not interfere with the establishment of firm union or tend to leakage.

12. The side-knot, or "square" stitch, in rendering a retaining suture unnecessary is superior to the top-knot or "circular" stitch.

TRANSMISSIBILITY OF PLAGUE.¹

BY

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Although two thousand years old and discussed by every writer on plague, this subject is not only interesting and instructive, but of especial importance at the present time. Our growing intercourse with plague-infested districts, our knowledge that plague may thrive in any climate during any season of the year, and recent work relating to this disease, must ever give the subject a prominent place in our public discussions.

¹Read before the St. Louis Medical Society of Missouri, November 8, 1902.

The discovery of *Bacillus pestis bubonice* by Kitasato and Yersin, in 1894, opened to us a new field which in time must disclose the long hidden secrets of this disease. *Bacillus pestis*, at or below the body temperature, grows luxuriantly on ordinary culture media and maintains its virulence for an indefinite time. Its viability has been much discussed, and the results of numerous workers have greatly varied. Naturally, varying degrees of vitality must, in part, explain this seeming inconsistency. Its viability, naturally, varies with surrounding conditions. On culture media, protected from harmful influences, the organism may live for months, even years. Deprived of these luxuries its life is shortened, but even here may be protracted for a surprisingly long time.

Rappaport saturated silk threads, cotton goods and paper with healthy cultures and subjected the organism to various harmful influences. He found that the organism lived 19 days in the sunlight and 23 days in darkness at ordinary room temperature, 22 days in the desiccator, 11 days in the thermostat, 1 hour at a temperature of 60° C., and 15 minutes at 89° C. The German Commission found virulent organisms in sputum after 10 days; Abel, in sterile water, after 20; Hankin, in various cereals, after 13; Jokote, in buried plague cadavers, after 30, and on dried linen, kept at 16° C., Abel found living organisms after 30 days. In dried, pulverized organs of animals dead of plague, living organisms have been found after 48 days.

While in Manila I performed a series of experiments to determine the viability of *Bacillus pestis*. Sterile slips of writing paper were inoculated by immersion in a 48-hour culture suspended in salt solution. The slips were then placed in sterile test-tubes in a thermostat at 32° C. to 34° C. For each examination five slips were used. They were transferred from the sterile tubes to bouillon for 48 hours, from which pure cultures of the plague bacillus were obtained by plating. When the experiment was undertaken it was my intention to inoculate monkeys and rats with each recovered culture, but unfortunately, when needed, animals could not be bought. At the end of 12 days five slips were positive, 17 days three, 28 days four, 34 days two, 39 days none, and 44 days one. One animal was inoculated with a culture recovered after 17 days in the thermostat. A typical fatal case of plague developed, from which the organism was recovered at autopsy.

Kitasato found that the organism was killed after 4 hours' exposure to direct sunlight, and the German Commission after 2 hours'. I prepared slips of paper as above described and exposed them on a brick pavement to direct sunlight. At intervals of 15 minutes two slips were examined as above. All of the slips were positive up to and including 2 hours and 45 minutes; after this the bacilli were dead. An animal inoculated with cultures recovered after 2 hours and 45 minutes, developed a fatal attack of plague.

To disinfectants the organism seems most susceptible; weak solutions of the several poisons kill the bacilli in a remarkably short time. On media, cultures maintain their virulence for many months. Full virulence has been noted after 15 months. Frequently I have found four months' old cultures as virulent as when young. Even in a dried state virulence is long maintained. I obtained a most virulent culture from paper slips after 17 days in a thermostat, and from dried organs cultures have remained virulent after 48 days.

The long life and maintenance of virulency under unfavorable conditions are most important, and may explain the origin of successive epidemics, especially when a previous epidemic is long continued by occasional cases. If the organism can live 44 days on dry paper and 48 days in dry organs, how much longer may it live in more favorable media to be found in all of the Oriental cities? These findings suffice to explain the transmission of plague to foreign ports.

Lymphatic glands harbor the first organisms entering the body. Here they multiply and later gain access to all parts of the body. The blood may be infected from the second day of disease until death. In one case I found bacilli in the blood for a period of 45 days. After septicemia develops, bacilli may be found in saliva, urine, feces, etc. Owing to multiple submucous hemorrhages in the stomach, vomitus may be laden with bacilli. Through these means clothing, furniture, etc., in the sick-room may become infected, and the infection carried to neighboring localities. Convalescents in whom septicemia continues many days are especially dangerous, as the individual may go to neighboring districts or to foreign lands.

History shows the susceptibility of domestic animals. As early as First Samuel, chapters V and VI, plague among the Philistines and the pollution of the fields by dead mice are mentioned. Many observers mention the high mortality and migration of rats and mice. Swine, cattle, and horses are susceptible, as are many wild animals.

Recent observations have given to insects an important role in the transmission of diseases. In "De regimine pestilentico," published in 1498, the first mention of the role of flies in plague is made. Since this time numerous observers have mentioned the importance of insects in spreading plague, but few have given definite information. Yersin found bacilli in dead flies in his laboratory in Hong Kong. Nuttall¹ found that flies contracted fatal attacks of plague, so could carry infection. This observation is of especial importance, as it shows flies may infect foodstuffs. Nuttall also made a series of experiments on numerous insects. He found that the bacilli could live five days in the stomach of bed bugs, but failed to produce the disease in animals bitten by infected bugs. After feeding on plague-infected cadavers, especially rats, ants may carry infection. If after biting, infected insects are mashed, the bite may serve as a portal of entry for the liberated bacilli. Numerous instances of blebs containing bacilli have followed the bites of insects. Fleas are also susceptible to plague, and undoubtedly carry infection from rat to rat, but considerable doubt exists as to the possibility of fleas infesting rats, using man as a host. Simond noted that persons handling rats recently dead of plague, frequently contracted the disease, while those removing the animals some hours after death were not affected. He thinks the fleas had left the latter, and naturally concluded that in the former fleas carried the infection. Mosquitos do not play an important role in this disease.

Raw material and fabrics may be infected by sputum, etc. In Kobe, Kitasato found bacilli in goods from Bombay. Employees working with this material contracted the disease.

All nationalities are susceptible to plague. The apparent racial immunity is due to some artificial protection arising from national characteristics. Of these, dress which best protects the individual, personal and domestic cleanliness, are most important.

Owing to many almost insurmountable difficulties definite information regarding portals of entry for plague is not at hand. Experimentation on animals has shown that an introduction of bacilli into the tissues is sufficient to produce plague. The number of bacilli so introduced seems to be of minor importance. This fact indicates that a few bacilli lodged in a small, even microscopic, wound may produce plague. The location of primary buboes is of considerable importance in this connection. In adults, 69% of primary buboes are femoral and inguinal, 22% axillary, and 9% cervical. The large percentage of inguinal and femoral buboes, especially among unshod races, would indicate the infection of small sores in the most exposed regions, namely, the legs and feet; while from less exposed parts we find a

smaller percentage of primary buboes. Additional evidence for this source of infection may be found in the location of primary buboes in children. Here we find inguinal and femoral buboes in 19% of all cases; axillary 32%, and cervical 49%. It is well known that whenever possible a child will put anything in its mouth and is inclined to play on the floor or ground where the hands are more liable to infection than are the feet. From abrasions in the mouth infection is carried to the cervical glands. In some cases infection may occur through the lungs, especially pneumonic cases.

Much discussion has failed to decide the possibility of contracting plague through the digestive tract. Animals have been fed infected material with and without contracting plague. Some observers think that in positive cases infection is received through the nose or through abrasions in the mouth, thence to the cervical glands. Other observers have found primary mesenteric buboes after feeding infected blood. I inoculated ordinary gelatin capsules with virulent plague cultures, then sealed the capsules with celloidin. The sealed capsules were then forced into the stomachs of monkeys. By this method the mouth and esophagus were protected from the organism. Plague was not produced, nor were the animals at all sick. Control animals subcutaneously inoculated with bacilli from the same tube from which the capsules were prepared died within the usual time. Capsules taken from the same box from which the capsules to be inoculated were obtained were readily soluble in the mouth and in plain water. These observations warrant the conclusion that in rare instances plague may be contracted through the alimentary tract, but in feeding experiments infection more often occurs through small abrasions in the buccal mucous membrane.

Infection through the genitals, although rare, has been noted. The following case of a Filipino boy is interesting: Two days after sexual intercourse a urethral discharge was noted. The patient reported to his family physician, who diagnosed gonorrhea and prescribed the usual treatment. Two days later the patient developed a right inguinal bubo with high fever and unconsciousness. When first seen by an inspector plague was suspected, so the patient was removed to the hospital, where he died soon after admission. An autopsy was made immediately. From the urethra an abundant pearly white discharge was found, which on examination showed polynuclear leukocytes, spermatozoa, and a pure culture of *Bacillus pestis*. The organism was identified in culture and by animal inoculation. This discharge had existed two days. Autopsy revealed typical lesions of plague. The inguinal bubo indicates infection from the external genitals. The time element shows that infection occurred about the time of copulation. All attempts to find the woman were futile. The importance of this case is the probable source of infection and the presence of plague bacilli in the semen. I have found several illac primary buboes in women. Here the infection most probably came from the vagina. Previously a case in which bacilli were found in the blood for 45 days was noted. In these cases a few bacilli might gain access to the semen to find new soil in the vagina. This evidence is circumstantial but strong.

Direct transmission plays a minor role in the spreading of plague. Excretions, hemorrhages from the nose and lungs, vomitus, fluid from pustules and carbuncles, pus from buboes and old plague sores, sputum from plague pneumonia, edema of the lungs and ulcerated tonsils contains bacilli in varying numbers and may serve as a medium of direct transmission. As patients die during the height of disease, plague cadavers are infected and a source of danger. Bites of infected insects and animals are worthy of note. While in Hong Kong, Dr. Bell told me of a Chinese street sprinkler who found a sick rat in a hydrant. While trying to kill the animal the Chinaman was bitten on the left thumb. Several days later he developed a fatal case of plague with a left

¹ Johns Hopkins Hospital Reports, Vol. viii, Nos. 1, 2, 1899.

axillary primary bubo. The relatively small number of cases of plague occurring among attendants in plague hospitals and workers on plague demonstrate the minor role of direct transmission.

In indirect transmission the viability and virulence of the organism are of prime importance. Infected material, foodstuffs, convalescent patients, etc., have already been mentioned. Air and water rarely, if ever, carry infection, except in pneumonic cases. In infected cities certain houses become, so to speak, endemic plague centers in which case after case develops in spite of thorough disinfection.

In conclusion, it may be said that the plague organism is long lived; is carried by raw materials, insects, etc., gains access to the system through superficial abrasions, wounds, and the pulmonary tract and that a relatively small number of organisms may cause the disease.

KARYOKINESIS IN MALIGNANT TUMORS.¹

BY

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The law of genetic cellular continuity was first clearly outlined by Virchow, and has now become one of the fundamental data of biology. The cell can have no other possible origin than by the division of a preexisting cell of the same kind. By cell division the hereditary substance is split off from the parent body. Cell division is one of the central facts of development and inheritance. The mechanism of cell division, as considered at the present time, consists in a division of both the nucleus and protoplasm. Remak originally taught that cell division proceeds from the center and extends to the periphery, that it begins with a division of the nucleolus, is continued by simple constriction and division of the nucleus, and is completed by the division of the cell body and membrane.

This simple explanation was accepted as sufficient for many years. Later observations demonstrated that cell division was by no means so simple a process. In 1873 Schneider asserted that cell division was a complicated process, involving changes in both nucleus and protoplasm. He was followed by Fol, Strasberger, van Beneden, Flemming, and others. For the nuclear changes present Sleicher gave the name karyokinesis in 1878. In 1879 Flemming asserted that cell division occurred in two ways: First, by direct division; second, by indirect division, and in 1882 he proposed the terms mitosis (indirect or karyokinetic cell division) and amitosis (direct or akinetic cell division). Modern research has indicated that amitosis or direct division is of infrequent occurrence compared with mitosis or indirect cell division. In considering briefly the subject of mitosis, we have first to consider the cytosome, which is the purely cytoplasmic part of the cell, that is, all exterior to the nucleus except those bodies which are known as archosomes. The cytosome, therefore, contains such constituents as cell wall, metaplastic granules and secretions, various rays, spindles and fibers. The karyosome or nucleus comprises the following parts: Nuclear wall, chromosomes, and their constituents, linin, and what are known as nucleoli. It includes all bodies, which when the cell is at rest, reside within the nuclear wall. The archosome, which is the centrosome or centriole, as named by Boveri, with its spheres (the somosphere and centrosphere), is the third element around which important changes occur in mitosis.

The constituents of the nucleus may be divided into three parts, chromatin, linin and nuclear wall. The nuclear wall is undoubtedly only a condensation of the linin network, so we have really to deal only with the chromatin and linin or chromatic and achromatic sub-

stance. The chromatin is important inasmuch as it undergoes certain interesting changes during the phases presently to be briefly described. The process of mitosis involves three contemporaneous series of events which affect the nucleus, centrosome and the cytoplasm of the cell respectively. For purposes of convenience, it is customary to divide the successive phases into four parts. These phases are not, however, separated in any way in nature, but merge imperceptibly one into the other. These phases are prophase, metaphase, anaphase, telophase. First I would say a few words as to the changes occurring during the prophase. As the cell prepares for division, the most noticeable event occurs in the nuclear material. The chromatin, which is the darkly staining material of the chromosomes, arranges itself in more or less convoluted thread, known as the spirem. Sometimes this is a single thread, and sometimes it is divided into a definite number of segments, called the segmented spirem. However, it finally breaks up into a definite number of distinct bodies, known as chromosomes. The chromosomes are not distinctly homogeneous as they first appear, but on closer investigation are seen to be made up of granules like beads, which Dr. Eisen has named



Section I.—Showing chromosomes, not yet split—spirem stage.

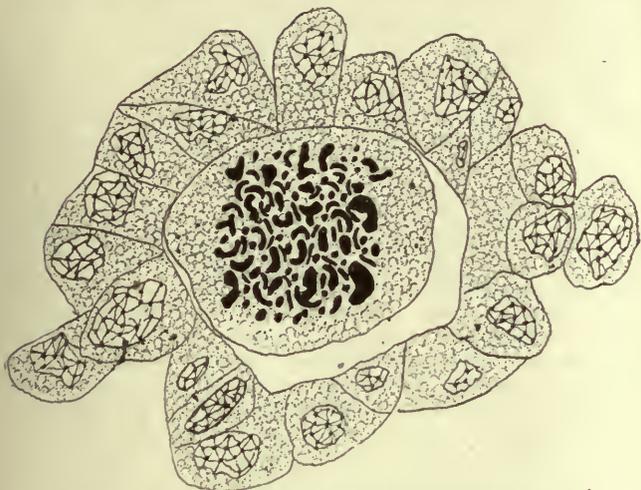
chromioles. The chromioles are grouped into certain aggregations which he has called chromomeres. The chromomeres seem to be presided over by one or more rounded, well defined bodies formed in the nucleus either free or attached to the chromosomes, known as the chromoplast or nucleolus. It has been thought to have a function in directing the complicated changes of the chromosomes, just as the centrosome governs the formation of the spindle outside the nucleus.

The staining power of the chromatin now reaches a maximum. As a rule the nuclear membrane fades away, and the chromosomes lie free in the cytoplasm. Every species of animal or plant is supposed to have a definite number of chromosomes, which regularly recur in the division of the cell.

Meanwhile contemporaneous changes are going on outside the nucleus in the formation of a structure known as the amphiaster, formed under the influence of the centrosomes. The structure consists of a fibrous spindle, at either pole of which is a star or aster, formed of rays radiating into the surrounding cytoplasm, the appearance resembling the iron fillings in the field of a magnet. The center of each aster is occupied by a minute body, known as the centrosome or centriole. As the amphiaster forms, the chromosomes group themselves in a plane passing through the equator of the spindle, and this has been designated as the equatorial plate. The

¹ Presented before the San Francisco Microscopic Society.

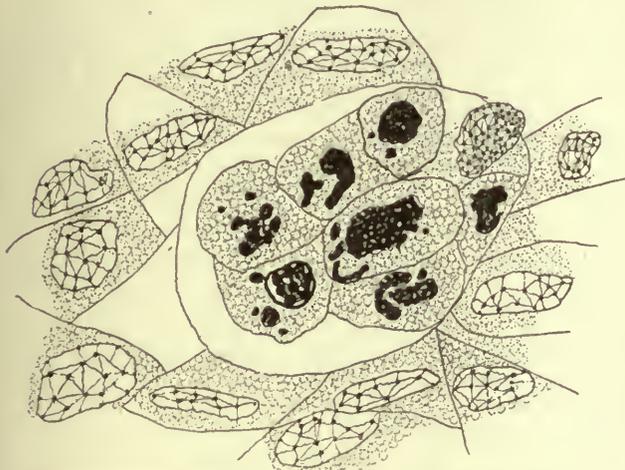
amphiaster is supposed to form under the influence of the centrosome, which divides into two halves, an aster being developed around each centrosome, while a spindle stretches between them. It is usually considered that this process occurs outside the nucleus, and as the nuclear membrane fades away, some of the astral rays grow into the nucleus, become attached to the chromosomes, and finally pull them into position in the equator



Section II.—Showing chromosomes split and segmented.

of the spindle. It is claimed by some that the amphiaster forms inside the nucleus, but I think the consensus of opinion holds to the other view. The entire structure resulting from the preceding changes is known as the karyokinetic or mitotic figure. It may be described as consisting of two parts, first, the chromatic figure, formed by the deeply staining chromosomes, or the chromosomic process, and the achromatic figure, consisting of a spindle and asters, or the radiosomic process.

The metaphase forms the initial phase of actual division. Each chromosome now splits lengthwise into two halves exactly alike, which diverge to opposite poles of the spindle, and here each group of daughter



Section III.—Showing chromosomes in groups forming seven daughter nuclei.

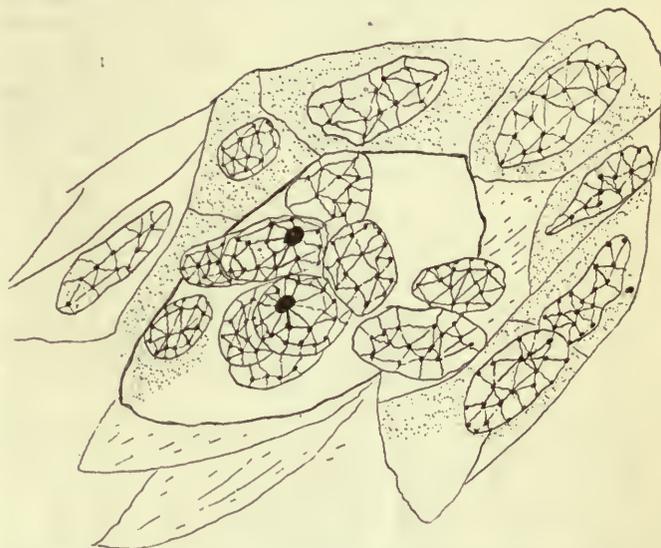
chromosomes finally gives rise to a daughter nucleus. Certain variations arise in some cases, but the cardinal fact invariably obtains, viz., that the chromatic network is converted into a thread, which, whether continuous or segmented, splits lengthwise into two exactly equivalent halves. The splitting of the chromosomes, discovered by Flemming in 1880, is the most important operation of cell division, and by it the daughter nuclei receive

exactly equal portions of chromatin or hereditary substance.

During the anaphase the chromosomes, which have split lengthwise and are arranged in definite groups, diverge to opposite poles of the spindle, where they become centralized into a mass near the pole of the aster. As they diverge the two groups of daughter chromosomes are connected by a bundle of achromatic fibers stretching across the interval between them, known as the interzonal fibers.

In the telophase or final phase of mitosis the entire cell divides into two, in a plane passing through the equator of the spindle, each of the daughter cells receiving a group of chromosomes, half the spindle and one of the asters with its centrosome. Meanwhile, a daughter nucleus is reconstructed in each cell from the group of chromosomes it contains.

The slides presented are taken from a rapidly-growing spindle-cell sarcoma of the thigh. The tissue was cut into small cubes and placed immediately in bichromate-acetic fixative solution. The sections were cut four



Section IV.—Showing clump of ten young cells breaking through the cytoplasmic membrane.

micromillimeters thick and stained with hematoxylin and eosin.

The sections show some departures from the typical process of karyokinesis, as described above. The first section shows a cell about 70 micromillimeters in diameter undergoing mitosis. It is surrounded by the spindle-cells of the tissue, being separated from them by a cellular interval. The chromosomes stain intensely and are arranged in a segmented spirem. The cell membrane has faded away and the chromosomes lie free in the cytoplasm.

Section II shows a mitotic cell also, about 70 micromillimeters in diameter, in which the chromosomes have split and segmented and are lying free in the cytoplasm. Many of the chromosomes have a V shape, others are semicircular, or oval, or single points.

Section III shows the chromosomes arranged in definite clumps (there being seven in number within the old cell wall); the cell outlines of the daughter cells are perfectly distinct from the neighboring cells.

Section IV shows the next step in development, a group of cells, ten in number, lying in a shell, representing the old cytoplasmic membrane. The chromosomes stain darkly, indicating recent mitosis. The old cytoplasmic membrane is intact, except in two places where the cells are breaking through. The next step consists in an ingrowing of connective tissue between the daughter cells, and we have the picture

present in any part of the tissue that has not undergone recent mitosis.

It seems to me that the tissue shows certain departures in an unbroken chain. While there are many mitotic figures that indicate that only two daughter nuclei are formed, the four sections presented indicate in an unbroken chain a mitosis in which there are many daughter cells formed in the plane of the section. As a cell is not a flat structure, but a circular mass of protoplasm, it seems evident that if all the serial sections of the cell could be presented there would be at least 50 daughter cells formed from the fragmentation of a single nucleus.

The spindles that were present in this tissue presented certain departures from the ordinary. While in many cases the equatorial plate showed the normal arrangement with the rays converging to the two poles, probably the most common form consisted in a branching or Y-shaped arrangement, and in some few cases a double Y.

The most natural question as to Figures I, II and III is whether they are examples of karyorrhexis, and therefore an evidence of degeneration, or whether they are examples of a pathologic mitosis, tending to the production of multiple daughter cells.

The drawings were made by me with as great accuracy in detail as was possible. The lenses used were a 3 mm. apochromatic Zeiss, with compens. ocular 18, using an oil immersion achromatic substage condenser.

X-RAYS IN SURGICAL DIAGNOSIS.¹

BY

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The discovery of rays of light which penetrate substances ordinarily opaque, termed by the discoverer, Professor Conrad Röntgen, x-rays, probably marks an era in medical and surgical diagnostics. It may be classed with the discovery of the microscope, the clinical thermometer, the stethoscope and the hypodermic syringe as one of the great mechanic agencies upon which scientific, as distinguished from empirical medicine, is based. In all cases in which it is of any value at all as a diagnostic aid it is probably the most valuable we have, as it is the most definite in the information, given to the trained eye, of any instrument at our command. While it is possible, owing to the initial cost of the apparatus, the cost of maintenance, and the technical and electrical difficulties in the management of even the most improved machine, that x-ray machines may never become so universally employed as some of the cheaper instruments we now have, *e. g.*, the stethoscope or thermometer, yet I venture the prediction that within a few years no medical or surgical diagnosis in any but the plainest cases will be considered definite or complete without a report from a reputable, competent radiographer. It will doubtless be difficult for physicians not familiar with the x-rays to understand the dependence upon them by every one accustomed to their use. Of course we are but at the threshold of our knowledge of this agency, but even now Williams is able to make a positive diagnosis of the beginning of tuberculosis long enough before physical signs can be found to make the difference between success and failure in the treatment of this most common and most dreaded disease, while Leonard has taught us not only to make an absolute positive or negative diagnosis of renal or ureteral stone, but at the same time to locate it so definitely that the danger of the surgical procedures necessary to its re-

moval is reduced to a minimum. The methods of these masters of our art are placed freely at the command of all medical men, and it is only he who will not, who fails to avail himself of their assistance.

First, it may be better to give brief attention to the machinery and technic necessary for the production of x-rays of sufficient brilliancy to produce satisfactory results. I have used both the coil and static machine, and while I freely admit that excellent results may be obtained from either, I feel confident that to any other than the x-ray specialist or one who employs an operator, that the well-built static machine of 10 or more revolving plates equipped with a first-class motor of sufficient power to get a very rapid revolution of the plates will be more satisfactory than any other form of apparatus. In country districts, where neither water nor electric power can be obtained, no static machine will be found satisfactory unless a small gasoline or steam engine is purchased with them. It is very tiresome to turn even the lightest machine by hand-power, and the light thus generated is an uneven one at best. The only troublesome thing one must do with a static machine is to keep several bowls of perfectly dried calcic chlorid in the case, and in very warm wet weather—during dog-days, for instance—these bowls must be set in the stove and baked for some time, until perfectly dry. Sometimes during the summer this must be repeated as often as every second or third week, but ordinarily once every month will do until the house begins to be warmed by artificial heat, when the bowls may be left alone until summer again. Much of this trouble, and it sounds worse than it is in practice, may be avoided by having glass plates six or eight inches thick under the legs of the machine.

In practice the question frequently arises as to whether the examination should be with the fluoroscope or whether a radiograph should be made. It seems to me that no x-ray examination, especially in surgery, is complete unless the fluoroscopic examination is especially thorough. In all cases when a permanent record is desirable, as in operative cases, or in cases in which one is observing newgrowths of sufficient density to show on a plate, it is well to make two or more pictures at such angles as will best show the deviation from the normal. Each plate should be definitely identified and the distance of the plate from the tube noted as well as their position relative both to one another and to the object radiographed. In medicolegal cases this is of especial importance, and the time seems almost at hand when the evidence in many personal injury cases will be considered incomplete without the testimony of a radiographer.

In considering the x-ray in surgery proper, we more easily understand our object by considering it (1) in bone surgery and (2) in surgery of the soft parts. We may for further convenience divide (1) bone surgery into (a) fractures and dislocations, (b) newgrowths involving bone, (c) diseases of the bones other than newgrowths, and (d) the detection of foreign bodies contained within bones or bony cavities; and (2) surgery of the soft parts into (a) the detection of foreign bodies in the soft parts, (b) newgrowths, (c) affections of the organs within the chest other than newgrowths, and (d) renal, ureteral, vesical, and hepatic calculi.

1. BONE SURGERY.

(a) *Fractures and Dislocations.*—The mistakes made by our profession in the treatment of this particular class of afflicted persons are more prominent than in any other branch of our art. Röntgen's discovery revolutionizes at once our methods of diagnosis and treatment, and makes both so accurate and so safe that diagnosis in all cases in which it is available is certain, and the prognosis and treatment are laid before us as an open book. Of course, many fractures and dislocations may be detected and treated almost perfectly without the aid of the x-ray (but we cannot safely tell which these are with-

¹ Read before the Kentucky State Medical Association, Paducah, May 9, 1902.

out their use), and I feel confident that if two radiographs could be taken, or even if sketches of the position of the fragments could be made from a fluoroscopic examination, and this could be repeated after as complete reduction as possible, the physician would know almost perfectly the amount of displacement that probably would result. This could be shown and explained to the patient, and the necessity, should it exist, for wiring the fragments together could be made plain. Fluoroscopic examination should be repeated frequently and each observation should be carefully recorded. Many linear fractures without displacement can be recognized only from a radiograph. Every user of the x-rays must be surprised especially at the frequency of fracture of small bones of the hand and foot in cases formerly treated as sprains, and they are of particular value in fractures complicated with dislocations when one or the other injuries are frequently overlooked by ordinary examinations. Most fractures in which there is great danger of permanent deformity are easily recognizable from a simple fluoroscopic examination, and the method necessary for relief lies before one.

(b) *Newgrowths Involving Bone.*—In such conditions the value of the x-rays is apparent. It is well to remember that exostoses following fractures simulate newgrowths and that the growths are nearly always a little more extensive than they appear, owing to the comparative softness of the edges of the growth. Frequently the entire area of the growth shows only as a dark spot on the negative, due to the rarefaction of the bone and the lower density of the tumor. Radiographs should always be made in suspected malignancy.

(c) *Diseases of Bones Other than Newgrowths.*—In simple periostitis the edges of the bone appear roughened. The bone should be examined around its whole circumference very closely. In tuberculous infection of the joints the infusion is apparent and is always darker when purulent than when serotic, and the affected bone areas are roughened and less dense. In poliomyelitis of the long bones the borders of the canal are roughened. Of course the distinction between various bone lesions, whether tuberculous, syphilitic, malignant or simple, must be cleared up by the physical examination and history of the patient.

(d) *The Detection of Foreign Bodies Contained Within Bones or Bony Cavities.*—Foreign bodies may be detected when they are driven into the bones or bony cavities when they are more dense to the rays than the bones or when they are much less dense than the bones, but only in the latter case if they are of considerable size. Of particular interest is the localization of particles of glass, stone or metal in the eye, or of similar substances or of bullets in the brain or pelvis.

2. SURGERY OF THE SOFT PARTS.

(a) *Foreign Bodies in the Soft Parts.*—Such bodies are more readily located. This method is particularly useful in the removal of pins, needles and small pieces of metal from the hands or feet. Every practitioner knows the annoyance and difficulty of finding such small objects. Instead of making radiographs in perpendicular planes as is ordinarily recommended, I have found it much easier to locate the foreign body with the fluoroscope after thoroughly cleansing the nearest adjacent skin surface. After this I take a sharp scalpel of sufficient breadth and make a puncture to the end of the needle or broadest part of any other foreign body and then introducing a very small but strong pair of forceps through the puncture, remove the offending matter. This procedure is extremely simple and is not a matter of as many minutes as it takes to describe it. A similar procedure may be followed when sufficiently dense foreign bodies are in the nose, larynx, trachea or esophagus. In these cases an assistant is necessary, who should introduce the proper forceps to reach the foreign body so as not to injure the soft parts. The light necessary for

this part of the procedure may be gotten from a candle. Then the operator, watching the introduction of the forceps with the fluoroscope should guide the jaws so they grasp the edge of the object and then gently yet firmly extract it. Modifications of this method will suggest themselves for foreign bodies in other parts.

(b) *Newgrowths.*—The size and depth of many newgrowths of soft parts may be marked out very definitely with the x-rays. Particularly important, as modifying the character of operations, is the location of growths of some size in the neck as to whether they extend behind the clavicle and into the thorax. Several tubes of varying degrees of resistance should be used in such cases. Even large abdominal tumors cannot usually be made out but the displacement of the diaphragm is always noticeable. Aneurysms may also be considered under this head for convenience: they are usually very dark and their pulsations easily noted.

(c) *Affections of the Organs Within the Chest Other Than Newgrowths.*—No examination of the chest may be considered complete without the aid and confirmation of the fluoroscope. Many examinations of normal as well as abnormal chests are necessary for one to appreciate this fact. Surgically we are chiefly interested in empyemas, pleurisy with effusion, gangrene of the lung and tuberculosis. Dr. Williams, in his extraordinarily complete work on this subject, has shown that in all affections of the lungs the diaphragm on the affected side has a relatively lessened range of motion as compared with the sound side. Darkened areas in the lungs indicate disease of the lung substance while cavities and emphysema are shown by clear bright spots, or in the latter disease over all of both lungs. Pleuritic effusions are readily noted by the displacement of lung and often also of the heart. In empyema the resistance to the light is much greater and the area filled with pus is almost or quite black. Gangrene of the lung is similar in appearance to pneumonia but the area is usually larger and darker. Displacement or enlargement of the heart may be readily noted and given its proper significance.

(d) *Renal, Ureteral, Vesical, and Hepatic Calculi.*—Leonard has taught us how to make a positive diagnosis of renal, or ureteral calculus by making a radiograph with a low tube—so low in fact that anything in the abdomen of greater density than the soft parts will be shown. He expresses perfect confidence in his negative as well as positive diagnosis, and his wide experience and perfect success make him our Nestor in this department. We cannot yet as certainly find stones in the bladder or the gallbladder, but this is purely a question of technic and may be solved satisfactorily any day. It is important in all cases when ureteral or renal stones are located to operate as soon as possible, not only for relief to the condition but also because the stone may move and not be readily found.

Thus briefly have I outlined the present status of the x-ray in surgical diagnosis. Truly we may say we are but in the infancy of this most wonderful art. Every day is bringing newer uses for the x-ray in all branches of medicine. No conservative expert will claim that everything in medicine is settled by its use or that any agency we now have at our command should be discarded. It makes a most—may we not say the most—valuable addition to our diagnostic armamentarium and its very value makes it more important that we should the more frequently examine the sputum and the blood, that we should all the better ground ourselves in the use of the stethoscope and microscope, that we should collect and keep more careful histories and case notes, and above all that we be better, broader, more careful and more painstaking physicians.

A memorial hospital, to honor the memory of the late Rev. Richard S. Storrs, the eminent Brooklyn preacher, and to bear his name, will be erected by friends in Foochow, China.

SPECIAL ARTICLES

WIDENER MEMORIAL INDUSTRIAL TRAINING SCHOOL FOR CRIPPLED CHILDREN.

BY
DE FOREST WILLARD, M.D.,
of Philadelphia.

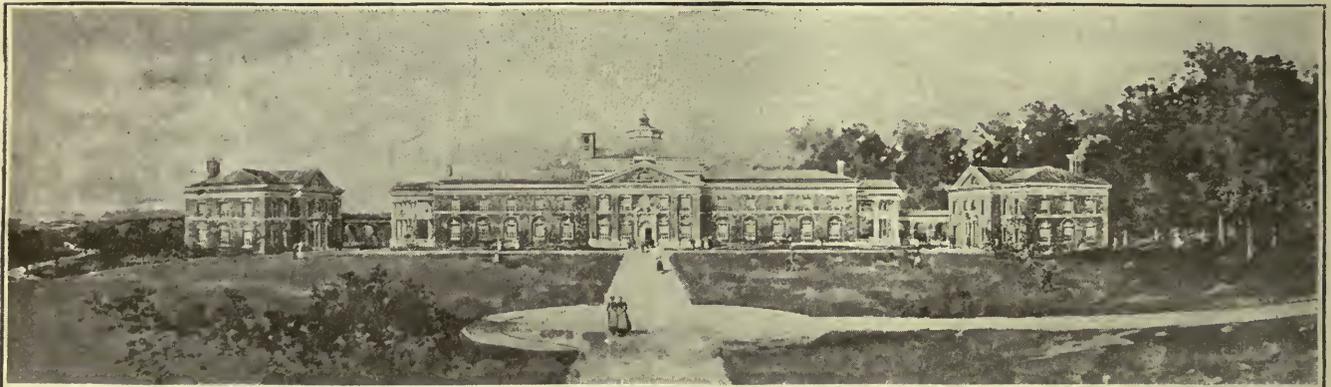
Clinical Professor Orthopedic Surgery, University of Pennsylvania.

The Widener Memorial Industrial Training School for Crippled Children, now under process of erection through the broadminded liberality of Mr. P. A. B. Widener, is in memory of his wife and son. It has for its object the special training and equipment for the struggle in life of a class of individuals seriously handicapped in the race. Thirty-two acres situated on the Old York Road, but within the city limits, has been purchased for the purpose and the buildings are already partially completed. The grounds are studded with magnificent old trees and the location is most healthful. The buildings being erected (designed by Mr. H. Trumbauer) are of the Colonial style of architecture and consist of a central convalescent department, an educational department and an industrial department, together with cottages and administration building; also heat, light and power house, machine shop, disinfecting and incinerating plants, isolation cottage, etc. All the appliances are of the most sanitary, helpful and useful character. The cost of grounds and buildings will approximate \$1,000,000, which together with an endowment fund of \$2,000,000, will make the total investment \$3,000,000.

important of helpers in the restoration and continuance of health, outdoor occupations will be favored for both boys and girls, and the 32 acres of ground will be utilized in floriculture, agriculture, the care of stock, dairy products, poultry, etc., all these industries being taught by the best methods. Girls will be taught all branches of cooking, housekeeping, etc., together with sewing, millinery, dressmaking, mending, and the more delicate needle decorative arts. Boys will be instructed in machine work, the manufacture of braces, shoes and clothing, printing, engraving, silver marking and various like trades.

The place will be emphatically a school and not a hospital, but convalescents and cured patients will be received from any hospital. In case of relapse the patient will be returned to the hospital for further treatment. During the convalescent stage, patients will be under the constant supervision of a physician, while at the same time their education will be advanced to a greater or less degree, as strength of brain and body will permit. When possible, children will be taken early in life, and will not be graduated until they have attained some means of partial or entire support. As the work is along new lines which have not been attempted to any extent in this country, and only very moderately in Sweden and Finland, the adaptation of mental and physical powers will require careful study in order to raise the individual in the moral as well as the physical scale.

Among the plans suggested for elevation of the standards, as soon as the boy or girl has developed a certain amount of proficiency it is proposed that he or she shall be paid wages and shall pay board, thus developing a sense of responsibility and self-respect. Economical habits will be fostered,



The Widener Memorial Home for Crippled Children.

The school is intended to individualize the physical disabilities of each patient and to give to that individual a thorough practical training in the occupation for which he or she may be best fitted, physically and mentally. With the serious crippling of muscular force so constantly found in this class, great discrimination will be necessary in deciding upon the most suitable trade or occupation. Each one will be studied with the view of bringing out the qualities best fitted to secure self-support, thus raising the individual from a condition of dependency to one of self-dependence, and not only relieving the State from a burden, but also making a good citizen.

The institution is to be put upon the broadest possible basis, without discrimination of race, creed, or color, the intention being to avoid as far as possible the errors of institution life and to follow the best conditions of family home training. The sexes will work, study and play together, but in their house life will be placed in separated small cottages, in numbers of twenty, under the direct influence of a housemother, where the normal conditions of home will be approximated as closely as possible. Individual rooms will be assigned to older scholars.

The primary object will be to train the hands or feet or body for some useful occupation, while at the same time a moderate brain education will be enforced. Any child showing decided brain power will receive higher education at already existing institutions in the city. The whole training will be eminently practical. As sunshine and fresh air are the most

while regularity and method will be secured by an accurate keeping of yearly personal accounts. The establishment of a penny savings bank, etc., will stimulate the desire to earn and to accumulate.

A gymnasium especially arranged for the development of weakened portions of the body, and sunny winter playrooms and porches will be provided, also smooth asphalted outdoor exercising grounds, etc. Each building is supplied with elevators, and each cottage will have a homelike evening sitting-room, with books, games, etc. The auditorium will be used not only for secular and religious purposes, but also for the teaching of music, both vocal and instrumental.

As the work develops it is also expected that the necessity will arise for a boarding-house for graduates, where plain but healthful and clean accommodations can be secured at a price graded consistently to the earning powers of the individual. These handicapped workmen and workwomen will thus be placed conveniently to the region of supply and demand, and can continue their home life in close daily contact with the center of graduate instruction.

From the above outline it will be seen that the work of this school is, briefly, to supplement the work of the hospitals; to strengthen and physically renew the weak ones, and then to educate them into habits of industry, order, cleanliness, self-respect and self-reliance; to apply such mental, moral and religious training as will render them true, honorable, useful and self-sustaining members of the community.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

[January 17, 1903. [Vol. XL, No. 3.]

1. Recent Progress in Laryngology, Otology and Rhinology. G. HUDSON MAKUEN.
2. Illustrative Cases of Cerebrospinal Fever. J. P. CROZER-GRIFFITH.
3. Epilepsy: Its Psychopathology and Medicolegal Relations. H. A. TOMLINSON.
4. Epilepsy: Its Treatment, Hygienic, Medicinal and Surgical. DANIEL R. BROWER.
5. Institutions for Epileptics. WILLIAM P. SPRATLING.
6. Syphilis of the Larynx. CHARLES M. ROBERTSON.
7. Wax Models of Unusual Types of Skin Diseases. J. FRANK WALLIS.
8. Gastrojejunostomy with the McGraw Elastic Ligature, for the Relief of Gastropostosis. H. O. WALKER.
9. The Mortality Following Operations for Pus in the Pelvis. HUNTER ROBB.

1.—See *American Medicine*, Vol. III, No. 24, p. 991.2.—See *American Medicine*, Vol. III, No. 24, p. 990.3, 4, 5.—See *American Medicine*, Vol. III, No. 25, p. 1056.

6.—**Syphilis of the Larynx.**—This is fortunately rare. But one instance of primary lesion has been observed. When the disease is hereditary it occurs in the early months of life or about adolescence, in the former showing secondary, in the latter tertiary lesions. Absence of pain when not attempting to swallow is most characteristic. When a gumma ulcerates the process begins at the center and there is some pain, especially on swallowing. When ulceration occurs near a cartilage perichondritis follows and a sequestrum is frequently formed, which gives rise to a permanent discharge either into the larynx or outside of the neck. Ultimately stenosis takes place. Sometimes the larynx is entirely obliterated, requiring a cannula to be worn permanently. Robertson gives a table showing the main differences between syphilis, carcinoma, and tubercle in this location. The usual systemic treatment is indicated. Patients will often take large doses of iodids who will not tolerate smaller ones. It is well to begin with 20 grains. The ulcer should be cleansed, cauterized with iodine crystals in creosote (saturated solution) or painted with lunar caustic or burned with the galvanocautery. The object of treatment is to prevent stenosis. [H.M.]

7.—**Wax Models of Skin Diseases.**—Wallis shows cuts of models of some rare manifestations. It is the truest means of illustrating the morphologic conditions. [H.M.]

8.—See *American Medicine*, Vol. IV, No. 18, p. 688.

9.—**Mortality in Pelvic Operations.**—Robb believes the mortality following operation for suppurative disease can be kept under 5%. The deathrate is influenced by the virulence of the organism, the individual resistance, the time and manner of carrying out the operative technic. The *Streptococcus pyogenes* is most to be feared. Abdominal drainage is seldom necessary, as the germs are generally dead. It is needed when it is impossible to remove the suppurative structures and when perforation of the bowel is feared. Irrigation with salt solution removes the pus and promotes absorption of inflammatory products. The elevated position with the abdomen filled with salt solution tends to prevent intestines and omentum from adhering to the incised surfaces. Should symptoms of infection occur there is then sufficient time to reopen the abdomen and wash out the infective material. Operations for pus in tubes and ovaries are not, as a rule, attended by more dangers than others. [H.M.]

Boston Medical and Surgical Journal.

January 15, 1903. [Vol. CXLVIII, No. 3.]

1. A Synopsis of Ten Weeks' Service on the Boston Floating Hospital. ROBERT W. HASTINGS.
2. A Case of Retinal Hemorrhage in a Patient of Seventy-three; Treatment by the Faradic Current: Complete Recovery. HASKET DERBY.
3. Vesical Appearances in Renal Suppuration. EDGAR GARCEAU.
4. The Treatment of Hay-fever. LORENZO B. LOCKARD.
5. Poisoning of the Underwood Family by Wood Alcohol. E. G. HOITT.
6. Wood Alcohol Poisoning. S. W. ABBOTT.

1.—**The Boston Floating Hospital.**—Hastings gives a brief history of the hospital and describes the work at present carried on. Experience has led to the conclusion that fresh, clean milk is better than pasteurized food. Milk containing less

than 10,000 bacteria per cc. was obtained and the milk sugar solutions used in modifying it were sterilized by boiling for 30 minutes. No preparations were heated beyond 100° F., and that at the feeding time. Mothers were instructed in the art of pasteurizing, however, as milk generally has millions of germs to each cc. Peptonized foods showed an increase in bacteria, and a tendency not to hold together, consequently fresh extract of pancreatin and sodium bicarbonate were used, the cream (12%) peptonized and sterile sugar solution added afterward. Whey for sick babies should be made with essence of pepsin and whole, not skimmed milk. Babies with gastrointestinal troubles were usually put first on rice water made from flaked rice. If there was vomiting, albumin water was used. In exhaustion, panopeton or beef juice was given. Two wards were supplied with air with a humidity of 50% and a temperature of 72° F. by means of an ice machine, steam pipes, and a powerful fan. To prevent infection from diarrhea, flies were kept away, dejecta destroyed, and cyanid of mercury used for the hands. Hypodermoclysis was found valuable for stimulation. It can readily be given by a nurse. The stomach and nasal tube was used when food was refused. Enteroclysis was performed 700 times during the season. [H.M.]

2.—**Retinal Hemorrhage: Treatment by Faradic Current.**—Derby reports that a woman of 73, whom he had treated for a number of years, suddenly experienced great impairment of vision in the right eye. Vision was less than one-tenth. Dilatation of the pupil and ophthalmoscopic examination showed numerous retinal hemorrhages, the largest being extensive and in the macular region. She was given 10-minute treatments three times a week for about seven months with the faradic current, together with small doses of potassium iodid internally. The small hemorrhages cleared up before any apparent impression was made upon the large macular hemorrhage, which also finally entirely disappeared, leaving but an indistinct haziness. Vision to the extent of eight-tenths returned—slightly better than before the hemorrhage. The author hopes other members of the profession will try this method of treatment and determine conclusively whether it possesses actual value. Attention is called to the relief from pain following an application of the faradic current. [A.B.C.]

3.—**Vesical Appearance in Renal Suppuration.**—Garceau calls attention to the usually accepted statement that a pouting and inflammatory appearance of the ureteral orifice occurs on the side corresponding to an inflammatory or suppurating kidney. That this is generally true cannot be questioned but that it cannot be relied upon without corroborating evidence is illustrated by a case he reports in which after prolonged renal disease and vesical irritation a cystoscopic examination revealed an ulcerated and inflammatory condition of the left ureteral orifice while all other evidence went to show that the diseased kidney was the right. Daily irrigations with boric acid solution greatly relieved the vesical irritation and a subsequent cystoscopic examination showed both ureteral orifices normal although disease of the right kidney, apparently a stone, plainly exists. The patient refuses to permit a skiagraph and the exact renal condition can only be surmised by a long history of pus in the urine, repeated attacks of renal colic, enlargement of the right kidney and apparent absence of tuberculosis. [A.N.C.]

4.—**Treatment of Hay-fever.**—When Lockard finds no abnormality in the nose he lightly cauterizes both turbinals to obtund sensibility. Abnormalities should be corrected early to allow time for complete recuperation before the hay-fever season. He outlines a treatment for the elimination of uric acid and the correction of existing neuroses. In all cases he gives nitromuriatic acid (not the dilute), 3 to 5 drops after meals and at bedtime. If it causes diarrhea, the acid phosphates or lemonade can be substituted temporarily. Sodium bicarbonate results in immediate aggravation of all symptoms, counteract by acids, and alleviation ensues. Adrenalin chlorid is more efficacious than cocain. Its use should be followed by an oily spray, especially before going into the open air. Atropin may be needed for the hydrorrhea, and may be combined with morphin and caffein. When the acid treatment

fails, suprarenal gland, 5 grains, 3 to 5 times daily, may be tried. A cold douche or ice-bags to the spine will sometimes cut short the accompanying asthma. Nothing, however, is as useful as *dracontii* with belladonna, chloroform, and *althea*. [H.M.]

6.—Wood Alcohol Poisoning.—Deaths from this are on the increase, and Abbott advocates legislation requiring all retail packages of wood alcohol to be labeled as poison, sold only by registered pharmacists, and then only when a record of sale is made. The patent medicine trust will probably oppose such legislation. [H.M.]

Correction.—The abstract which appeared in *American Medicine*, January 3, 1903, p. 27, of the paper by Taylor and Waterman, "Landry's Paralysis," contained the statement that a fatal termination of the disease is not uncommon which is explained at necropsy. It should have read *unexplained* at necropsy.

Medical Record.

[January 17, 1903. Vol. 63, No. 3.]

1. Some Questions in Heredity. A. ALEXANDER SMITH.
2. Methods of Quarantine Against Yellow Fever Adopted in Havana, Cuba, During the Year 1901. W. C. GORGAS.
3. The Surgical Treatment of Puerperal Eclampsia and the Prevention of Convulsions. DOUGLAS H. STEWART.
4. Hypertrophy of the Lymphoid Ring of the Pharynx and Its Surgical Treatment. H. HOYLE BUTTS.
5. A Case of Sepsis, Following an Attack of Osteomyelitis from a Slight Cause. SAMUEL KOHN.

1.—Heredity.—Smith limits himself to that phase of heredity which has a bearing on clinical work. The most we can say about pulmonary tuberculosis is that lessened resistance may be inherited. Congenital tuberculosis is rare. The disease in the newborn can usually be traced to infection in utero. Gland, joint or bone disease, when the parents have been free from tuberculosis and a grandparent affected, presents a puzzling question. Is spontaneous recovery due to inherited tolerance? Certain diseases often develop at corresponding periods in parent and offspring through several generations. Gout is believed to be hereditary, and due to errors in eating and drinking through several generations. It often appears through inheritance in individuals whose own habits of life are correct. The older children may escape and the younger develop the disease, because the immediate ancestor acquired habits after the birth of the former such as to lead to disease in the latter. Rheumatism, or a tendency to it, is inherited. If infectious, only a vulnerability could be transmitted. Cancer seems to be inherited many times. In some families there is a distinct tendency to bronchial asthma, cardiac disease, arteriosclerosis, and hemophilia. All recognize the neuropathic constitution as transmissible. Mental derangement more than any other disease is inherited. Alcoholism is probably due to inherited deficiency in mental control. We call inherited tolerance to disease vitality. Racial susceptibility has long been noted. [H.M.]

2.—Quarantine Against Yellow Fever.—The quarantine regulations at Havana in 1901 were modified in accordance with the view that mosquitos and not fomites were the carriers of infection. Gorgas reviews the measures taken to kill the mosquitos and prevent their infection in the city itself, and describes those to prevent the disease carried in from the surrounding country. No question was raised about merchandise. The authorities wished merely to keep out those sick with yellow fever and keep others who had contracted it from developing it in the city. A medical inspector was employed in each infected town to notify Havana by telegraph of any non-immune going into that city. There were also inspectors on all trains from infected towns who reported all nonimmunes. The latter were visited once daily at their residences for five or six days after arrival and the temperature taken. A few sharp punishments for evasion effected general compliance with the regulations. Out of 1,250 nonimmunes, 27 developed the fever. Traffic and passenger travel was not interfered with. The temptation is great, if the necessity is sufficient, for a non-immune to try to avoid the present quarantine regulations of the United States. The relief to commerce under the Havana system would be enormous. [H.M.]

3.—Puerperal Eclampsia.—Stewart maintains that puer-

peral eclampsia has two causes: one intrarenal, due to diseased kidneys, and the other extrarenal, due to pressure upon renal veins, inferior vena cava, or ureters; and he defines it as a "neurosis caused by the action of poisonous blood upon the nerve centers." He emphasizes the point that albuminuria before the seventh month usually indicates postpartum danger, and in the last two months trouble before or during labor. In diet have the patient avoid meat. Impacted feces sometimes cause albuminuria, and when this condition is relieved even by stretching the sphincter muscle if necessary, the albuminuria is relieved and normal labor follows. It may also result from an obstructed urethra, and diminish when that is remedied. That venesection is curative in eclampsia Stewart says even its opponents admit, since in 15 recorded cases in which blood-letting was the sole treatment after convulsions had actually taken place there was only one death; but he believes that it is preventive also, and that inasmuch as we are dealing with a poisonous blood whose poisons would escape if possible, the simplest plan is to make a safety opening in the circulation. If forbidding meat and freeing rectum and urethra does not lessen albumin, we should draw off four ounces of blood. Follow that with a leech on alternate days. This is a working minimum. Bleed till the blood tension comes down, and albumin, swollen feet, headache and disturbances of sleep will be relieved. In one case small bleedings, begun on October 5, 1902, with albumin 50% by bulk, lessened the amount to 5% by October 10, 46 ounces having been taken in all. Every symptom had improved. Watery loss can be made up by rectal irrigation. Frequent small bloodletting is not depressing; on the contrary, it removes a depressing poison and the patient becomes less anemic. Stewart says that with diet, fresh air, exercise, frequent small venesections, a free urethra and rectal irrigations, we may eliminate the causes, and puerperal eclampsia need occur only in neglected cases. [W.K.]

4.—Hypertrophy of the Lymphoid Ring of the Pharynx and Its Surgical Treatment.—Butts first considers hypertrophy of the lymphoid structure in the vault of the pharynx, the so-called "adenoids of the vault." The wellknown signs are enumerated—mouth breathing, snoring at night, difficulty in respiration, pigeon breast, cough and frequent colds, lack of proper development, etc. The treatment is, of course, removal, and this should be done, except in very rare instances, under a general anesthetic. Hypertrophy of the faucial tonsils, of course, demands removal, and this should be done under a general anesthetic and with a tonsillotome. While the preceding conditions arise in infancy and early childhood, hypertrophy of the lymphoid tissue at the base of the tongue is rarely seen until adult life. Contact of this mass with the epiglottis causes irritation and is responsible for the symptoms, the most pronounced of which are the sensation of a fulness, a foreign body or "lump" in the throat, and a cough, especially marked at night. The galvanocautery preceded by cocanization is the best plan of removal. It should be repeated after a week until the mass is removed. [A.B.C.]

5.—Sepsis Following Osteomyelitis from a Trivial Injury.—Kohn reports the case. A young woman took a ride on a scenic railway and another on a carousel. During the rides, especially the former, she gripped strongly the supports to maintain her equilibrium. Following this there was pain in the right wrist. Inflammation, pain, swelling, tenderness, prostration, high fever, and endocardial murmur supervened. All the symptoms of a profound sepsis were combated by every known remedy for five weeks, when the patient died. The osteomyelitis of the ulna, apparently resulting from the sprain, was operated upon without general relief, no pus being found. A necropsy showed in all the internal organs the evidences of general sepsis and the diagnosis was osteomyelitis of ulna; staphylococemia; acute endocarditis of aortic valve, with perforation into right auricle; acute endocarditis of right auricle. Point of primary invasion not demonstrable. [A.B.C.]

New York Medical Journal.

January 10, 1903. [VOL. LXXVII, No. 2.]

1. Colorado Climate and Eastern Patients. W. A. CAMPBELL.
2. The Repair of Lacerations of the Pelvic Floor. JAMES HAWLEY BURTENSHAW.

3. The Origin of Chorioepithelioma of the Uterus. SAMUEL WYLLIS BANDLER.
4. Some Tonsil Affections. RICHARD B. FAULKNER.
5. Report of a Case of Tetanus Following Vaccination. WILLIS S. COOKE.
6. Thoughts on Fetal Intracranial Hemorrhage. DOUGLAS H. STEWART.
7. Note on the Salt Starvation Principle in Epilepsy Treatment by Bromids. L. PIERCE CLARK.

1.—**Colorado Climate.**—Campbell discusses the natural and acquired advantages of Colorado as a health resort and gives some points in the care and treatment of pulmonary patients in general. He says many patients are sent to this climate who have not been informed as to their true condition or who have been promised a cure in a very short time; such patients are, therefore, very hard to treat. He maintains that more active efforts should be made to get patients to Colorado in the earlier stages of tuberculosis, when a much larger number are cured. He believes being out of doors is the essential factor in the treatment of tuberculosis. The exercise, especially of a new arrival, should be strictly under the control of a physician. Sleeping on open porches is most advantageous. Pure air, good food, and a moderate amount of exercise are important factors. The complications must be met by therapeutic agents, but the treatment of the disease is more or less symptomatic. [C.A.O.]

2.—See *American Medicine*, Vol. IV, No. 17, p. 649.

3.—**Chorioepithelioma of the Uterus.**—Bandler says that we have in chorioepitheliomas a reproduction of the same constituent elements as are found in normal placentation, and are observed in benign and malignant cases of hydatid mole, and that these cells exert the same influence and effect on the maternal tissues as do the fetal cells in a normal uninterrupted pregnancy. They invade, as do the normal trophoblast cells, the maternal decidua and destroy it, and infiltrate and erode the walls of vessels. They invade and infiltrate deeply, too, the uterine wall. Their invasion of the maternal vessels and capillaries gives them, from their earliest existence as malignant cells, the opportunity of invading the maternal circulation, with a resulting early formation of metastases. Chorioepithelioma, occurring generally after abortion or hydatid mole, is certainly the cause, rather than the result, of the abortion. It represents a more advanced stage than that of hydatid mole, but both of these conditions, in a basic way, follow the normal processes in their course and growth. The only difference is the power of unlimited growth possessed by the chorionic cells in these pathologic conditions. The difference in the resistance offered by the patient points to a constitutional element, the lack of some normal secretion, as an important factor in the etiology of chorioepithelioma. [C.A.O.]

4.—**Tonsillar Affections.**—Faulkner calls attention to the absorptive power and phagocytic function of the tonsils, and states that every case of tonsillar affection demands thorough antiseptics, greater care in the preservation of lymphoid structure, more conservative surgical, and decidedly more comprehensive and detailed medical treatment of the nares. [C.A.O.]

5.—**A case of tetanus following vaccination** is reported by Cooke in a child of 4. The vaccine was of the glycerinated variety on an ivory or celluloid point, encased in paraffin. Precautions as to cleanliness were observed, and the scarification done at a point on the right leg about three inches below the knee, over the outer head of the soleus. A typical vaccine pustule followed, and the child was sent to the country. In about one month the child began to show symptoms of tetanus, later both trismus and opisthotonos occurred. In all [1,600 units of antitoxin were injected. Potassium bromid, chloral and whisky were also given. Recovery followed. Cooke believes that the wound became infected with the germ of tetanus while the child was at play in the country. [C.A.O.]

6.—**Fetal Intracranial Hemorrhage.**—Stewart believes that this accident arises from unequal squeezing; that is, a lack of countercompression on the vertex simultaneously with heavy urging pains acting on the body. This causes increased tension in the intracranial vessels, and happens under certain conditions and at a definite stage of labor, the forceps in the majority of cases being applied too late or not at all. A heavy pressure on the body in a dry labor before overlapping, especially if there is constriction of the veins of the neck by an

encircling cord, is a fairly certain cause of cerebral engorgement. Theoretically he advises the Kemp irrigator and the normal salt solution at 115° F. Derivatives are called for, and this method works well in older children. [C.A.O.]

7.—**The salt starvation principle in epilepsy treatment by bromids** is urged by Clark. Experiments have shown that bromin can replace chlorin in the body tissues; therefore by sodium chlorid starvation and the continual administration of the bromids we get an organic bromid compound acceptably fulfilling the physiologic role of chlorin and at the same time acting as a therapeutic agent of sedation in epilepsy. Under this method much smaller doses are necessary to control epileptic seizures. It is especially recommended in those acute idiopathic cases which require such large doses of bromids given in the ordinary manner that fatal intoxication is imminent; in those in which even unusually high dosage bromid is of little value; in those totally intractable to the bromid salt, and finally, in all chronic cases where a long continued sedation is necessary to hold in partial check the severity and frequency of epileptic attacks. The dietary should be especially arranged for palatableness and consist of cereals, milk, and vegetables. Sodium bromid should be given in the patient's food in place of table salt, as it is nearest like it in point of taste. Clark says that the results he has obtained from hypo-chlorization diet and the bromid treatment of epilepsy are the absence of "bromism," gastric irritation, constipation, and the mental hebetude common in the older forms of bromid sedation. [C.A.O.]

Medical News.

January 17, 1903. [Vol. 82, No. 3.]

1. The Etiology, Pathology and Symptomatology of Acute Suppurative of the Middle Ear. EDWARD BRADFORD DENCH.
2. Complications of Acute Middle-Ear Suppuration. JAMES B. CLEMENS.
3. The Treatment of Acute Suppuration of the Middle Ear. WENDELL C. PHILLIPS.
4. The Etiology, Pathology and Symptomatology of Chronic Purulent Otitis Media. M. D. LEDERMAN.
5. Complications of Chronic Suppuration of the Middle Ear. ROBERT LEWIS, JR.
6. The Treatment of Chronic Suppuration of the Middle Ear. JAMES F. MCKERNON.

1.—**Etiology, Pathology and Symptomatology of Acute Suppurative Otitis Media.**—Dench says the predisposing cause of acute suppurative otitis media is any condition which conduces to a chronic congestion of the upper air tract and the tympanum, *i. e.*, any obstruction to nasal respiration. Among the many causes thus acting are chronic hypertrophic rhinitis, acute rhinitis, acute inflammation of the nasopharyngeal space, adenoid vegetations, and diseases such as chronic heart, chronic nephritis, anemia, diabetes, etc., all tending to lower the general vitality. In any of these conditions if we have the direct cause, *viz.*, pathogenic germs gaining access to the middle ear, either by way of a ruptured drum, or through the eustachian tube, suppurative otitis media is the result. The condition often occurs also as a complication of the acute infectious diseases—measles, diphtheria and scarlet fever. In the pathology we notice that a *purulent* inflammation almost always involves the upper part of the tympanic cavity, whereas a *catarrhal* inflammation involves, as a rule, the lower part, but a catarrhal process may easily become so pronounced as to rupture the drum, and may of course extend into a suppurative process. Among the pronounced symptoms of acute suppurative otitis media are stuffiness in the ear followed by pain which may become very severe, impairment of hearing, vertigo, vomiting, rise of temperature, which in children may suddenly reach 105° F. or 106° F. A sudden rise in the temperature of a child suffering with one of the exanthems should at once arouse suspicion of acute otitis media. [A.B.C.]

2.—**Complications of Acute Suppurative Otitis Media.**—Clemens says an otitis externa may be one of the complications leading to violent inflammation of the lining of the osseous canal, closure of the canal, and extension to the auricle. Mastoid disease is a frequent and dangerous complication, not infrequently leading to meningitis, thrombosis of the sigmoid sinus with consequent pyemia, abscess of the brain. Wide extension of inflammation in the neck and toward the vertex may occur. Other complications mentioned are caries of the

neighboring osseous structures; facial paralysis, indicating involvement of the fallopian canal; cervical adenitis; retro-pharyngeal abscess. A localized meningitis occurs in almost every case of acute suppurative otitis media in young persons. In conclusion he states that in all obscure diseases of children repeated and careful examinations of the ear should never be neglected, for the work of Ponfick, who made 100 autopsies upon infants dying of various acute and chronic diseases, wherein the majority of the cases middle-ear inflammation was not suspected, showed it present in all but nine. Ponfick believes the tympanum acts as an incubator and generator, promoting toxic symptoms in localized infective diseases. Pomroy, of Boston, has verified this observation. [A.B.C.]

3.—Treatment of Acute Suppurative Otitis Media.—Phillips believes that in acute middle-ear suppuration early and free drainage is of the utmost importance; patients should remain in bed until acute symptoms have passed; free purgation, preferably by calomel, should be had; microscopic examinations of pus should be made; local treatment should consist of cleanliness and free drainage; proper internal medication is indicated; prolonged attempts to abort suppuration of the mastoid cells are condemned; early operative interference in mastoid suppuration prevents more serious complications and gives far better hearing results; uncomplicated cases of acute suppuration of the middle ear, when properly treated, always recover in from two days to three weeks; the responsibility for preventive treatment must be largely assumed by the family practitioner. He should fully appreciate the importance of preventive treatment when caring for grip, the exanthems, or other infectious intranasal conditions, and also, the early and complete removal of diseased adenoid tissue. [A.B.C.]

4.—Complications of Chronic Suppurative Otitis Media.—Lewis considers the structures involved in the complications under three heads: those which relate to the parts primarily involved; those which involve still other auditory structures, as the petrous bone, auditory nerve, etc., and those involving structures not related to audition. Classed under the last are pachymeningitis, leptomeningitis, intracranial abscess, extradural and intradural; thrombosis of the sigmoid sinus with a probable pyemia, and diffuse metastatic abscesses with synovitis, gastroenteritis, hepatitis, etc. In this country 4,000 patients with brain-abscess of otitic origin, one in every 19,000 of population, annually die, while, according to Körner, the deathrate in Prussia from otitic brain-abscess is about three for each 20,000 of population. According to Pitt, the number of brain-abscesses which occur from otitic disease is 30% of the whole number. Barr estimates it as high as 50% of the whole number of abscesses of various origin. Pitt estimates that 5% of all cases of meningitis and two-thirds of all cases of sinus-phlebitis are of otitic origin. In brain-abscess the cavity is connected in 92% of the cases with the suppurating ear by a fistulous tract. In 95% of the cases there are multiple abscesses. In 6.6% of the cases the abscess lies within the brain and is separated from the source of the disease by normal brain tissue. [A.B.C.]

5.—Treatment of Chronic Suppurative Otitis Media.—McKernon considers only two methods—the dry, and the irrigation or wet treatment. The first prime requisite is cleanliness of the auditory canal and adjacent parts, find the opening in the ear-drum and enlarge it if necessary; determine at the first whether there is caries of the ossicles, and if so remove them. The essential features of the dry method, carried out under aseptic precautions, are: A fine powder is insufflated over the drum surface as well as the canal walls; zeroform, nosophen, boric acid, acetanilid, aristol and iodol have all been used with good results; after this, a small wick of gauze iodoform, borated or plain sterilized, is passed up and, if possible, into the perforation, and the canal is loosely filled to the meatus. The essential features in the irrigation treatment, now almost universally used, consist in syringing the ear with one of the following solutions: Bichlorid of mercury 1:4,000 to 1:8,000; boric acid, 20 grains to the ounce of boiled water; carbolic acid, 1% to 2%; a weak solution of formalin and a solution of potassium permanganate; normal saline solution or warm sterilized

water. If granulations are present they should be cocainized and removed by chemicals. The proper treatment of the many complications is given. [A.B.C.]

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1. The Anatomopathologic Characteristic of Syphilis. J. RENAUT.
2. Two Cases of Perforation in Typhoid Fever, in One of Which An Operation was Performed. JAMES HENDRIE LLOYD and THOMAS LUTHER COLEY.
3. Two Erroneous Surgical Decisions in Intestinal Perforation from Typhoid Fever. JOHN B. ROBERTS.
4. A New Method of Hemoalkalimetry and a New Hemoalkalimeter. ARTHUR DARE.

1.—The Anatomopathologic Characteristic of Syphilis.—Renaud believes that syphilis, like tuberculosis and glanders, is caused by a living pathogenic agent. Consequently there is no reason to seek a lesion which essentially characterizes the disease, any more than in tuberculosis or glanders, as is the case, however, in diseases which are truly neoplastic. On the other hand, it is necessary to make out the general import of the lesions of syphilis. After much research he concludes that gummas have no anatomic individuality, that they are even less constant in structure than tuberculous granulations, which are certainly rarely alike; and there is no typical tumor characteristic of syphilis. He details at length arguments to prove that syphilis is an infectious disease, all the stages of which are characterized by an attack on the bloodvessels, affecting the intima of the arteries particularly. [F.C.H.]

2.—Perforation in Typhoid Fever.—Lloyd and Coley reports two cases of typhoid fever which presented examples of the difficulties of definitely determining the onset of perforation in the course of enteric fever. One patient was a butcher of 52. At autopsy a perforation one-eighth of an inch in diameter was found nine inches from the ileocecal valve. The other patient was a laborer of 36, upon whom an operation was performed about 12 hours subsequent to the time of suspected perforation. Four large perforations were found, and the abdominal cavity was filled with fecal accumulations. The perforations were closed, the abdomen thoroughly washed with normal salt solution, which was also used intravenously during the operation. Death ensued in 24 hours. [F.C.H.]

3.—Two Erroneous Surgical Decisions in Intestinal Perforation from Typhoid Fever.—Roberts details two cases in which a failure was made to diagnose perforation. After a study of cases of perforation in typhoid fever, he concludes as follows: The occurrence of pain and the increased rate of pulse and respiration are probably the most valuable early diagnostic symptoms of perforation; the count of leukocytes seems to have little value, unless it be hereafter proved that a count of the polymorphonuclear leukocytes has diagnostic significance; and a sudden fall in temperature is not a necessary accompaniment of perforation. [F.C.H.]

4.—A New Method of Hemoalkalimetry and a New Hemoalkalimeter.—Dare submits for consideration a new method of hemoalkalimetry, and describes an instrument devised expressly for this purpose. The reader is referred to the original article, as it does not well lend itself to valuable abstract. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

REVIEW OF LITERATURE

Abdominal Pain in Enteric Fever.—Allyn¹ enumerates the various conditions which may give rise to abdominal pain in enteric fever, and says the abdominal causes, such as distended bladder, menstruation, abortion, and labor have nothing to do with the specific fever proper. The important causes are intestinal colic and distention of the bowel with gas; enterocolitis; deep ulceration, so that the serosa is involved; phlebitis of an abdominal vein; coincident appendicitis; ileus; peritonitis without rupture; cholecystitis and liver abscess; hemorrhage and perforation. Concerning a complicating appen-

¹ Medicine, November, 1902.

ditis, he says McCrae and Mitchell report a case which was operated on and ended in recovery. There was no evidence that the appendicitis was due to a typhoid process. The only organisms obtained from the appendix were the bacillus subtilis and saprophytes. Fitz found that perforation was in the appendix in 3% of 167 cases; and one of Gairdner's 47 cases had a perforation in the appendix. Perforation of the appendix alone occurred in 3 of the 112 operative cases collected by Finney. In the 20 cases of perforation at the Johns Hopkins Hospital perforation of the appendix was found in 2, and Cushing reports another in a group of 9, which makes perforation of the appendix occur in 9.6% of cases showing perforation. [A.B.C.]

Diseases of the Kidneys.—Singer¹ reviews the literature and reports his observations upon the various symptoms seen in disease of the kidneys. He found soldiers, especially cavalrymen and others subject to great exertion, are prone to have hématuria which is caused by the rupture of the renal capillaries and disappears when the latter become healed. Hematuria after exertion may be the first symptom of developing nephritis. Such a hemorrhage has been given as a diagnostic symptom of stone and the patient operated on only to find that the hemorrhage was the result of a latent nephritis. Hence patients with hemorrhage from the kidneys should be watched for some time before resorting to a surgical operation. Singer believes that latent renal tuberculosis is frequently mistaken for nephralgia and treated as such. Many cases of obscure renal pain are tuberculous in origin. The author considers renal tuberculosis not a fatal condition and reports cases which had been positively diagnosed as tuberculosis and yet made a spontaneous recovery. A case of temporary albuminuria is reported in which the patient, with a chronically enlarged spleen, showed albumin only when lying on the left side. This was due to pressure on the renal veins. Temporary albuminuria may occur after exertion, as seen in students at military academies. Statistics are given which show that from 15% to 96% of foreign soldiers present albumin in their urine after a march. No symptoms of disease were ever seen to follow this form of albuminuria. Transitory albuminuria is seen in persons with healthy kidneys, but who may suffer either from a dilated stomach, pelvic tumors or enteritis. Febrile albuminuria is not due to fever, as was once thought, but is caused by the presence of microorganisms and their toxins. Nephritis may occur as a complication in acute infections, and of the latter scarlet fever and influenza are the most frequent. The prognosis of this form of nephritis is varied. Its most favorable course is its disappearance with the disease, or it may become chronic. It may change from a permanent to an intermittent albuminuria. Occasionally there remains a minimum amount of albumin with no influence on the general health. The cyclical albuminuria of adolescence occurs in young people of a neurotic temperament who are otherwise healthy. Constitutional anomalies during the developmental stage causes cyclical albuminuria. The prognosis of this form is most favorable. [W.E.R.]

Modern Sewage Disposal.—After biologic treatment sewage should be utilized for maintaining vegetation, but instead the final effluent is discharged into the nearest water-course, its main effect being to spread disease by means of oysters and other shellfish. It has a manurial value and its failure as a fertilizer, R. Caldwell² believes, has been due to its application to too small an area, the land becoming waterlogged. The typhoid bacilli, not destroyed completely by the biologic treatment in filter beds, die out rapidly in unsterilized cultivated soils. [H.M.]

Pulmonary Gangrene.—W. Ophülo³ reports on five cases of pulmonary gangrene, from which he concludes that: 1. The disease is probably always due to mixed infection with pyogenic cocci and other bacteria of a more saprophytic nature. 2. Quite frequently the latter belong to the class of actinomycetes (including in this class all branching bacteria, like tubercle bacilli, diphtheria bacilli, etc.), and they may be more or less acid-proof. 3. The gangrenous process is always accompanied

by pneumonic processes, which in the more chronic cases usually appear in the form of a chronic catarrhal pneumonia with carnification. [C.S.D.]

Bovine and Human Tuberculosis.—Wolff¹ reviews the literature and reports his results in inoculating a calf with a culture of tubercle bacillus obtained from a case of human intestinal tuberculosis. The animal before inoculation was perfectly healthy. After injection two tuberculous reactions were obtained and all the typical symptoms of bovine tuberculosis developed. The calf died in 83 days, and the postmortem examination revealed large and small caseating tumors at the seat of inoculation and tuberculous foci in nearly all of the internal organs. Microscopically the tubercles presented structures very similar to those found in human tuberculosis. The tubercles at the seat of infection were calcified and caseated, while those in the more distant regions of the body were newly developed. This proved that the disease began from the area of inoculation and then spread throughout the body, and not from an accidental infection in some other part of the body. Wolff concludes that bovine tuberculosis is transmissible to the human body and *vice versa*. He believes the bovine tubercle bacillus is more virulent than the human variety, and advises that all milk should be thoroughly inspected to prevent the spread of tuberculosis. [W.E.R.]

Asylums for the Insane.—These should, C. Vintras² thinks, be gradually converted into sanatoriums. By giving a freer hand to those at the head personal initiative should be encouraged. Too much care cannot be taken in the selection of those continually with the mentally afflicted. Those active in mind rather than body make the best attendants. Active mental occupation as well as recreation should be provided for the patients. Prizes should be offered and attempts made to reopen their minds as one opens the mind of a child. [H.M.]

Echinococcosis Cured by Injections of Sublimite.—The use of injections of corrosive sublimate in the treatment of echinococcus cysts and spoken of as the Baccelli method appears to be meeting with success among Continental physicians. Three cases are reported, one of which, that of S. Cona³ is particularly interesting; what at first appeared to be a case of pulmonary tuberculosis was finally diagnosed from shreds, etc., ejected in the course of severe attacks, to be an echinococcus cyst of the superior lobe of the right lung. This, like the cases of echinococcus cysts of the liver reported by Carlo Berruti and by E. de Magistris, was treated and cured by emptying the cyst by aspiration and then injecting 20 cc. of a 1% solution of corrosive sublimate. A bibliography of reports on the successful use of this method is given by Cona. [C.S.D.]

Hemorrhage in Enteric Fever.—Curtin⁴ calls attention to the rarity of hemorrhage in children with enteric fever, and discusses the etiology, pathology, diagnosis, and treatment of this complication. Dangerous conditions when associated with hemorrhage are: Renal disease, organic heart disease, hemophilia, tympanitic distention of the abdomen, obstinate diarrhea, and vomiting. He advocates the usual medicinal treatment and gives favorable mention to ergot and suprarenal extract, especially if in cases in which the hemorrhage is an oozing from the mucous membrane. The author states that since the application of cold to the body surface was introduced in treatment the number of hemorrhagic cases has considerably increased, according to hospital records that furnish the data. This is attributed to congestion of the internal viscera, and consequent increased vessel-tension, caused by the wellknown fact that application of cold to the body surface causes the blood to seek the internal organs. [A.B.C.]

The Relation of the Thymus Gland to Marasmus.—Stokes, Rührhah, and Rohrer,⁵ from a careful study of the question, conclude that atrophy of the thymus gland is always found in cases of infantile atrophy; that the condition of the thymus gland is an index of the general nutrition in infants; and that the state of nutrition of infants may be estimated by a microscopic examination of the thymus at autopsy. [A.O.J.K.]

¹ Prager medicinische Wochenschrift, October 9, 16, 23, 30, and November 6, 1902.

² Medical Press and Circular, September 24, 1902.

³ Journal of Medical Research, June, 1902.

⁴ Berliner klinische Wochenschrift, November 17, 1902.

⁵ Medical Press and Circular, September 10, 1902.

⁶ Il Pollicino, November 8 and 29, 1902.

⁷ Medecine, November, 1902.

⁸ American Journal of the Medical Sciences, 1902, cxxiv, 847.

Transposition of the Viscera.—Arnell¹ reports five cases of congenital transposition and one case of acquired transposition of the viscera, and discusses the theories advanced to account for the conditions. [A.O.J.K.]

Pulmonary Edema and Fibrinous Bronchitis Following Thoracentesis.—A woman of 43 was tapped by Magenau² for a left-sided pleural effusion. Within a few hours a violent cough started, and she expectorated a great deal of thin sputum. Cardiac oppression and sensations as of impending death were present. These symptoms lasted several days. In the sputum were noticed a number of fibrinous bronchial casts. Gradual recovery resulted. Cases of edema of the lungs combined with fibrinous bronchitis after a thoracentesis are very rarely seen. The fibrinous bronchitis is believed to be inflammatory, and the pulmonary edema has usually been ascribed to an osmosis through the walls of the pulmonary vessels, the result of trophic injuries from long continued pressure of the exudate, the whole being assisted by cardiac complications. Magenau believes the whole process is inflammatory instead of more or less mechanical, and considers the fibrinous bronchitis a more intense stage of inflammation than the simple edema. [E.L.]

Atonic Motor Insufficiency and Dilatation of the Stomach.—Saundby,³ from a careful study of the question, states that atonic dilatation of the stomach is a common condition; that it occurs about twice as often in women as in men, and most frequently between the ages of 20 and 50 years; that it is ten times more common than dilatation from obstruction, which generally occurs after 30 years of age. It is caused by neurasthenia or by any prolonged debilitating illness which may set up neurasthenia. There are no characteristic symptoms and no correspondence between the amount of dilatation and the severity of the symptoms. The diagnosis in the great majority of cases can be made by distending the stomach with CO₂ evolved from 120 grains of sodium bicarbonate and 90 grains of tartaric or citric acid. The prognosis does not depend upon the extent of the dilatation, but rather upon the duration of the symptoms, the general health of the patient, and the effect of treatment. The treatment must be mainly that of neurasthenia, supplemented by the use of such drugs and diet as may be indicated by complications, such as gastritis. Gastroenterostomy often fails to relieve these cases. [A.O.J.K.]

Congenital Acholous Chronic Icterus.—Widal and Ravant⁴ report the case. The symptoms, occurring in a man of 29, had existed for years. The liver and spleen are at times increased slightly in size, returning to almost their normal size after an exacerbation of the symptoms. The pulse was slow, and the plantar, patellar and pharyngeal reflexes were abolished, the achilles and cremasteric reflexes lessened. These seemed to be the only symptoms resulting from this long biliary intoxication. The general health was perfect, and there was no dyspeptic symptom. Five cases presenting symptoms in common with the one described were cited from the literature. In certain cases it may be due to a congenital deficiency of the hepatic cells, calling forth an increase in bile formation by "Diabete biliare," which ends perhaps by awakening a susceptibility in the biliary passages to infection. [J.H.W.R.]

Cerebral Syphilis of Vaccinal Origin with Acute Basilar Meningitis.—Porot⁵ gives in detail the history of this case, the patient being a man of 23. He presented the typical symptoms of syphilitic basilar meningitis, the diagnosis of syphilis being corroborated by the presence on the body of numerous pigmented, cicatricial syphilides. There was no history of venereal disease, but the patient stated that the scars came from a series of ulcerations that followed vaccination five months before when he entered the army. The physician who vaccinated him and his comrades used the same lancet for all and charged it with vaccine from a plate. The symptoms and history and appearance of the man are thought to fully justify diagnosis of vaccinal syphilis. The patient rapidly improved under mercurial treatment. [A.G.E.]

The Treatment of Pleurisy with Effusion.—Delafield¹ advocates the treatment of pleurisy with effusion by aspiration alone, and not by medicine, and he tabulates the results of his treatment of 200 patients in support of the soundness of his contention. The fluid taken from the chest was bloody in 25 cases, turbid in 18 cases, and clear serum in the remainder. Of the 200 patients, 182 left the hospital entirely cured; 6 left the hospital within 10 days after the aspiration and probably recovered; 6 left the hospital at periods of from 17 to 36 days after the aspiration, the pleurisy was better but the results were uncertain; and 6 left the hospital at the end of from 24 to 38 days not at all improved. In more than one-half of the cases the duration of the pleurisy before aspiration was from 10 to 30 days. The length of time that elapsed from the aspiration to the entire cure of the patient was as follows: Within one week 64 cases, within two weeks 138 cases, within three weeks 158 cases, within four weeks 179 cases, and within six weeks 179 cases. The aspiration was done once in 142 cases, twice in 45 cases, three times in 9 cases, and four times in 4 cases. In private practice the results are better than in the hospital. In the fortunate cases, within 24 hours after one aspiration there is no more fluid and no more pleurisy. In a large number of cases the pleurisy is cured within a week, and no patient ought to be sick more than two weeks. [A.O.J.K.]

Barlow's Disease.—Hutinel² reports three new cases in infants from 11 months to 2½ years of age, fed on sterilized milk and prepared farinaceous food. They suffered violent pain and functional weakness of the legs. The treatment, consisting of fresh milk, lemon juice, and meat juice, resulted in the rapid disappearance of the symptoms. Ausset³ observed a case of Barlow's disease in an infant 11 months of age, fed on boiled cows' milk and soups. He concludes that sterilized milk and prepared farinaceous foods are not the only food capable of causing Barlow's disease. He believes that this disease is only a complication of rickets—a sort of "septicemic hemorrhagique" of intestinal origin. Marfan⁴ reports three cases of Barlow's disease, and concludes that sterilized milk is not the only cause of this disease. [J.H.W.R.]

The Action of Chalybeate Mineral Waters in Chlorosis and Anemia.—Wybauw⁵ has made a careful study of this question, and gives notes of 15 cases of anemia and chlorosis, some slight, others profound. He reaches the following conclusions: (1) Carbonated iron waters (type of spa) have a certain therapeutic action in doses that would be inefficacious if the iron contained was given in a pharmaceutical preparation; (2) this efficacy is probably due to the fact the iron is held in solution in a very unstable form; (3) the effect of the waters is persistent—in patients who remain too short a time at the springs to be cured it is noted that good results are afterward obtained from preparations of iron hitherto not efficacious; (4) these waters cause constipation in but few cases, on the contrary the constipation due to anemia frequently disappears under their use; (5) external methods of treatment, as hydrotherapy, carbonic acid baths, etc., have a favorable action in raising the state of nutrition, but used alone will not cure anemia. [A.G.E.]

Gastrointestinal Disturbances in Arteriosclerosis.—Neusser⁴ discusses those diseases of the heart and arteries in which the circulatory symptoms are pushed into the background, the symptoms of which the patient complains pointing to a disease of the gastrointestinal tract, and often leading to such diagnoses as gastric ulcer, catarrh, dilatation, splanchnoptosis, etc. He reports a case of aortic regurgitation and atheroma of the aorta which for five years had been treated as chronic gastritis, the patient getting worse and worse; another which, because of slight jaundice and other symptoms, had been called cholelithiasis. The patient died suddenly, and the autopsy showed aortic insufficiency and stenosis of the coronary arteries, but no gallstones. Sclerosis of the abdominal aorta or any of its branches may produce the same symptoms, and mistakes in diagnosis have been made a number of times. He mentions the case of a woman who, on account of paroxysmal

¹ American Journal of the Medical Sciences, 1902, ii, 885.

² Münchener medicinische Wochenschrift, October 14, 1902.

³ British Medical Journal, 1902, ii, 1698.

⁴ Gaz. hebdom. de Med. et de Chir., November, 1902, p. 1129.

⁵ Lyon Médical, November 9, 1902.

¹ American Journal of the Medical Sciences, 1902, cxxiv, 939.

² Gaz. hebdom. de Med. et de Chir., November, 1902, p. 1137.

³ Journal Medical de Bruxelles, November 6, 1902.

⁴ Wiener klin. Woch., September 18, 1902.

pain and constipation over a period of four years, had been thought to be suffering from chronic obstruction. An operation did not produce any improvement, and the autopsy revealed an occlusion of the mesenteric arteries as the result of sclerosis. The pain in such cases is explained on the theory of the pain of intermittent claudication: an insufficient amount of blood being supplied to the intestines by the sclerosed branch. [E.L.]

Rheumatic Myocarditis.—Fisher¹ reports two cases in which alterations of the myocardium were attributed to the rheumatic poison. In the first case, fatal cardiac failure associated with well marked signs of rheumatism occurred, and at the necropsy the cause of the cardiac failure was found to be fatty degeneration of the heart which, it is believed, may fairly be attributed to the rheumatism. In the second case the appearance clinically was that of chronic disease of the mitral valve, but after death the heart was found to be greatly dilated, and the mitral valve, though thickened, presented no lesion that could account for death. Fibroid disease and fatty degeneration of the myocardium, however, were present, and these, it is believed, were probably produced by the rheumatism. [A.O.J.K.]

Prevention of Diphtheria Infection.—A. Griffith² believes that while prophylactic doses of antitoxin are very useful in preventing the development of diphtheria in persons exposed to infection, they do not diminish the risk to others associating with them. The only way to prevent the disease spreading is to keep away from those who have been exposed, and who have bacilli in their throats, whether clinically ill or not. In mixtures of Behring's serum and sterile broth, one to eight, cultures multiply freely. It is difficult to think that the small amount injected can affect bacilli directly. It simply renders the recipient immune. Patients nursed at home seem to lose their infectiousness sooner than others, because they are truly isolated, and yet complete isolation and antiseptics locally applied often produce no effect. The ideal method is to swab all contacts and isolate them until free of bacilli. On account of the work involved, this is often impossible and the best we can do is to exclude them from school for a certain time. [H.M.]

Increased Weight of Infants Immediately Preceding Death.—Audebert³ considers at length the pathogenesis of the increase in weight of some infants during the days immediately preceding death, and cites cases as examples. In one the increase was 350 gm. (11½ oz.) in five days; in another 400 gm. (13½ oz.) in 10 days; in still another 200 gm. (6½ oz.) in 20 hours. Experiments with ingesta and excreta lead to the conclusion that in certain morbid conditions, as tuberculosis and bronchopneumonia, the excreta, particularly the products of respiratory action, are considerably diminished. This will result in increase of weight even though alimentation be below the mean. Another important cause is visceral hyperplasia, evidenced mainly in bronchopneumonia. [A.G.E.]

Thermic Fever.—Lewis and Packard⁴ give the details of the treatment of 92 cases of thermic fever treated at the Pennsylvania Hospital in the summer of 1901. The total mortality was 14.4% (13 cases), but no patient with a temperature less than 106° F. on admission died, and no patient with a temperature over 111° F. recovered. Convulsions, usually severe, were present in 14 cases. The treatment of the (32) mild cases (100° to 102° F.) consisted of rest in a cool portion of the ward, the application of an ice-cap, the administration of the aromatic spirit of ammonia, or alcohol, or strychnin, and occasionally a cool bath. The treatment of the (22) severe cases consisted of the administration of stimulants, as they were required by the state of the pulse, the application of an ice-cap, and either a cold bath or, in the more obstinate cases, the employment of rubbing with ice until the temperature approached the normal. In addition to the foregoing some of the extremely severe cases were subjected to bleeding (8 to 10 ounces), hypodermoclysis, and intravenous transfusion of normal saline solution—with good results. Abstracts of some of the case histories are given.

A valuable review of the study and treatment of heatstroke at the Pennsylvania Hospital and elsewhere is given by Spellissy in the same journal, page 485. [A.O.J.K.]

Fallacies of the Copper Reduction Test for Sugar.—F. D. Boyd¹ deals with substances apart from glucose and which may have no pathologic significance and yet will produce copper reduction. Glycuronic compounds are found in apparent health; after administration of drugs of the aromatic series; in infectious conditions such as typhoid, general sepsis, tonsillitis, etc. A urine containing these compounds will, however, not undergo fermentation with yeast. HCl and orcin or phloroglucin produces a brilliant red passing to reddish-blue, followed by a blue-green precipitate, which alcohol dissolves, giving a greenish-blue color. Urine containing glycuronic acid is levorotatory. Kreatinin produces a green color. Uric acid, unless present in excessive amount, does not cause any appreciable reduction. Alkaptonuria is of importance only from its liability to be mistaken for glycosuria. It may occur in constipation with decomposition of tyrosin in the intestine. Pyrocatechin causes a green color, hydrochinon a deep brown. No reduction of copper is likely to occur, except in the presence of glucose, if the observation be carried out at a temperature below the boiling point. The urine and copper solution should be boiled separately, the test-tubes then removed from the flame, and after 30 seconds poured together, and no reduction will occur from the less active bodies. [H.M.]

Hemophilia and Life Insurance.—Whitridge² gives in detail the history of a hemophilic, a man who died at the age of 25 from exsanguination. He stated that from a life insurance standpoint, hemophilia is not an important disease. The mortality records of the Maryland Life Insurance Company, which has been in existence for 37 years, show no death diagnosed as due to hemophilia, and only one in the purpuric class—purpura hæmorrhagica. The importance to medical examiners of anemia, as a sequel of hemophilia and of other diseases, is emphasized. [A.G.E.]

Hidden Aortic Aneurysm.—Schroetter,³ while making a routine physical examination of a patient with an abscess of the nasal septum, had his attention drawn to a peculiar dilation, thickening and tortuosity of both carotid arteries. The patient did not complain of any symptoms pointing to the circulatory system, and an examination of the heart and arteries revealed no lesions. A Röntgen picture of the thorax showed a large aneurysm at the beginning of the descending aorta. No symptoms nor signs such as we would be likely to expect to find in the early stages of aneurysm were present. The only additional factor was found on examination of the larynx; the left vocal cord was slightly less mobile than the right, but this was only discovered after the recognition of the aneurysm. [E.L.]

Gigantism.—Meige⁴ claims that gigantism and akromegaly are closely related to each other, and probably have a common etiology. Both conditions exhibit, besides enlargement of the skeleton, a great similarity in other symptoms, such as sexual torpor or impotence, muscular asthenia, polyuria, ocular defects, etc. In recent years autopsies have been performed on giants, and have disclosed frequently lesions of the pituitary body, which lesions are usually regarded as having an etiologic relation to akromegaly. Gigantism is a condition which develops during youth and adolescence, while akromegaly is a disease of adult life. Both conditions are due to an excess of the osteogenetic function. If the abnormal process occurs during youth, while the epiphyses of the bones are still in a cartilaginous state, the increase in size takes place in the length of the bones and gigantism results. But if this same abnormal process acts after the epiphyses have become ossified, the growth occurs in the breadth and thickness of the bones, producing the physical features of akromegaly. The identity of the two conditions is also supported by the facts that giants frequently develop signs of akromegaly in adult life, and that the two diseases may coexist if the pathologic process is brought into play at the time of adolescence. [B.K.]

¹ British Medical Journal, 1902, ii, 949.

² Public Health, October, 1902.

³ Gazette heb. de Médecine et de Chirurgie, December 21, 1902.

⁴ American Journal of the Medical Sciences, 1902, cxiv, 401.

¹ Scottish Medical and Surgical Journal, October, 1902.

² The Medical Examiner and Practitioner, December, 1902.

³ Wiener klin. Woch., September 18, 1902.

⁴ Gazette heb. de Med. et de Chir., December 25, 1902.

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

EDITORIAL COMMENT

The Surgery of Tuberculous Cavities of the Lung.

—A reviewer in the *Centralblatt für Chirurgie*, December 20, 1902, speaks of the recent article by Willard¹ as a very thorough piece of work in lung surgery, giving the results of a large personal experience and experimentation on animals with a rich collection of references to the literature arranged in tabular form. We believe the reader of Willard's article will find it worthy of this flattering commendation. In the chairman's address before the section on Surgery and Anatomy of the American Medical Association is collected in concise form nearly all of our present information about the surgery of tuberculous cavities in the apex of the lung, together with the results of extensive experimentation. Willard is led to believe from his studies that with improvement in operative technic pneumonotomy will become a practical operation which will be specially helpful in the early period of cavity formation. He recognizes, however, the very important fact that many of these cases are successfully treated by hygienic and general methods and for this reason it is frequently very difficult to obtain the consent of the patients to operation. Advanced cases are not well suited for operation, for there is usually streptococcus infection and the cavities are frequently multiple. Operation may be employed in such cases, however, as palliative to cough, hemoptysis and sepsis. Abscess of the lower lobes of the lung following pneumonia or pleurisy, whether tuberculous or not, should be treated by incision and drainage at any stage. Willard believes that in the future tuberculous foci will be eradicated in the same way as tuberculosis of the joints and other tissues is now successfully removed. One of the great difficulties which stands in the way of the realization of this prediction is difficulty in diagnosis. The most careful physical examination, even if accompanied by use of the x-rays, frequently fails to accurately locate the focus of disease and until this can be done operation cannot be safely undertaken. Whitacre's recent thorough studies of autopsy material at the Cincinnati Hospital also show the frequency with which multiple abscesses are met which would preclude successful operation in the majority of such cases. However, if the diagnosis can be successfully made there seems to be no reason why Willard's sanguine predictions should not be fulfilled. He finds experimentally that the most important step in successful operation is the production of firm adhesions between the parietal and visceral pleura. This prevents the danger of pneumothorax during the operation and permits the safe excision of tuberculous foci. Willard was able to bring about such adhesions by suture of a rectangular area to the chest wall through the intercostal spaces. In this way he was able to cut out a piece of lung, the remaining portion of lung retaining its function. To avoid possible danger of pneumothorax during operation he advises that a Fell-O'Dwyer artificial respiration apparatus with a jar of oxygen be at hand during operation. While the number of patients that will be saved by intervention, such as Willard recommends, is no doubt small, it is only by such careful study of the conditions for operation that the field for intervention would be further extended and future advances will be made.

REVIEW OF LITERATURE

Excision of the Esophagus for Carcinoma.—Faure² reports operative removal of carcinoma of the esophagus 11 cm. in length, involving that portion just above the level of the

bifurcation of the trachea. Resection of the ribs near the vertebral insertion was necessary. The operation, he states, was not specially difficult, but the patient died the day following without evidence of hemorrhage, shock, or pulmonary complications to account for death. [M.B.T.]

Acute Mastoiditis and the Question of Trephining.—Bliss¹ states the wonder is that infection is not more frequently carried to the cranial cavity from an acute infection of the mastoid, since the anatomic relationship is very intimate. In all instances the roof of the middle ear cavity is very thin, and in some instances a bony roof does not exist; the petrosquamous sutures never close in some instances, and the mastoid vein empties into the lateral sinus. A number of cases illustrating the danger and variation in symptoms of acute mastoiditis are reported. Unfortunately the question of when to operate can not be answered dogmatically; these indications for operation are given by the author: First, steady, persistent pain over the mastoid process at the region of the antrum—more important still if it extend along the lateral sinus toward the base of the skull; second, edema; third, the patient's temperature, a steeplelike rise and fall especially indicating danger. The other symptoms, as vertigo, nausea, vomiting, double vision, mental dulness, etc., may be present. Early treatment of acute otitis media often prevents mastoiditis; its onset should be treated by douching the external auditory canal with a very warm boracic solution, and the application of dry heat. [A.B.C.]

Intestinal Occlusion Complicating Intra-peritoneal Hematocele.—G. Jaquet² reports nine observations of this complication of hematocele, and draws the following conclusions: Intestinal occlusion is a possible complication of hematocele. Whenever the physician is confronted with the phenomena of intestinal occlusion, he must think of the possibility of a hematocele; when the latter affection is recognized, he should remember the accidents which it may cause in the intestinal tract. Obstruction may result from three causes: 1. Compression of the intestine by a fetal mass or a lithopedion. 2. Compression rapidly following an enormous extravasation of blood. 3. Slow obstruction by the formation of cicatricial bands resulting from the organization of a clot or from the inflammatory reaction of peritonitis. Surgical intervention is absolutely indicated. The incision should be made through the abdominal wall, in order to liberate the intestine whenever the symptoms indicate the inclusion of a portion of the intestine in the walls of the pouch. [L.F.A.]

Paracentesis of the Tympanic Membrane in the Treatment of Acute Otitis.—Grunert³ disagrees with Piffil, who says that in acute otitis media the drum should never be perforated, or if possible, should be prevented from rupturing, as this delays improvement, and makes the prognosis more unfavorable. He agrees with him that cases in which perforation does not occur, or paracentesis does not have to be done, heal quicker than others, but insists that paracentesis is necessary in cases meeting Schwartz's indications, and that if they are disregarded until complications arise, the prognosis will certainly be very grave unless spontaneous rupture occurs rapidly. Piffil's statement that he had to perform paracentesis only 10 times in 482 cases of acute middle-ear disease, is insufficient, as he does not inform us how often the tympanic membrane ruptured spontaneously. [E.L.]

Separation of Urine by Compression of the Ureteral Orifices.—Rochet and Pellanda⁴ claim that any method of partitioning the bladder is faulty and not reliable. Their instrument is based on the constancy of the anatomic relations of the trigone of the bladder. The instrument consists of two parts, a tunneled metal portion resembling a lithotrite, and a thin rubber tube carried in one compartment of the metal tube. The instrument is introduced into the bladder and the blades separated, which results in exposure of the rubber tube. Air is then forced into this tube which balloons and compresses the ureteral orifice of the side to which it is applied and stops the flow of urine. The secretion of the opposite side passes out through the tunneled portion of the instrument. A separate

¹ International Clinics, Vol. III, Twelfth Series.² Journal of the American Medical Association, 1902, Vol. xxxix, p. 665.³ La Semaine Médicale, 1902, Vol. xxii, p. 423.⁴ Lyon Médical, Vol. xciv, No. 41, p. 511, 1902.⁵ Münchener medizinische Wochenschrift, October 28, 1902.⁶ Gazette heb. de Médecine et de Chirurgie, December 14, 1902.

instrument is required for each ureter. Very satisfactory results are obtained. Detailed cases will soon be published. [A.G.E.]

Perforating Gastric Ulcer ; Celiotomy ; Recovery.—Barnet and Turner¹ report the case of a woman of 34 who had suffered for some time from attacks of indigestion. She was suddenly taken with violent pain in the abdomen, nausea and collapse. Pain was relieved by morphin, but recurred and was accompanied by uncontrollable vomiting. The physical signs of beginning peritonitis were present. The patient was removed to the hospital, a distance of 1½ miles, and prepared for immediate operation. On opening the abdomen perforated ulcer in the stomach was found, from which gastric contents were pouring. The ulcer was closed with three Lembert sutures, the peritoneal cavity was flushed with sterile water and the abdomen closed. Uneventful recovery followed. [M.B.T.]

Congenital Cystic Kidney with Pararenal Hematoma in a Syphilitic.—Fels² reports the case of a sailor, whose illness began as acute gastroenteritis, which was shortly followed by pain in the region of the kidney and spleen where a large, hard, round mass could be detected; it extended upward to the diaphragm and was not tender. The urine was normal in amount and contained small quantities of albumin and sugar, but no organic sediment. The patient was markedly anemic and cachectic, but a blood examination showed nothing but a parallel running diminution of red blood-corpuscles and hemoglobin. The leukocytes were slightly increased. Regarding the diagnosis no decision was reached. The following conditions were considered possible: Tumor of kidney; tumor of spleen as a result of an atypical leukemia; splenic tumor as a result of chronic malaria. The autopsy revealed a very extensive, encapsulated, pararenal hematoma of the left kidney; partial deficiency of left kidney with parenchymatous nephritis of remaining portions, and cystic degeneration of capsule. Congenital cystic kidney in right side, syphilitic splenitis, hepatitis, and aortitis. A careful microscopic description of spleen, kidneys, and liver is given, which brands the case as unique in pathology. He refers to a number of cases described by others and which bear some similarity to his. [E.L.]

Pneumococcus Arthritis with General Infection.—Siredey³ reports the case of a girl of 14 who developed suppurative arthritis of a metacarpophalangeal joint during the course of a right-sided pneumonia. She was taken with intense abdominal pain for which the abdomen was explored, but the cause of the trouble was not found. The patient died on the fifth day after entrance to the hospital, and the necropsy showed no peritoneal lesion to account for the abdominal pain, but a diaphragmatic pleurisy on the same side as the pneumonia. The pneumococcus was grown from the blood in this case. [M.B.T.]

Separation of the Urine from the Two Kidneys.—Luys⁴ describes his perfected instrument, the original having two faults. One was that the rubber partition was too long, causing pain; the other was that of a possible mixture of the urines which could be avoided only by pressing the bladder wall against the instrument by means of a finger introduced into the rectum. These objections have been overcome. The instrument consists essentially of two metallic catheters grooved on their inner surfaces to hold an intermediate metallic tube that contains a chain covered by a thin rubber hood. The three parts are united and passed into the bladder. Tightening the chain causes it to subtend the curve of the instrument like the cord of an arc, thus drawing up with it the rubber which forms a partition. The claims made for the instrument are simplicity, efficacy, and ease of manipulation. [A.G.E.]

Acute Osteomyelitis During Childhood.—Gonser⁵ makes an extensive report of 32 cases of osteomyelitis, the greater number of which he had been able to reexamine at different periods after operation. The following are his conclusions: 60% are males, 40% females; 69% occur during the

first decade, 31% during the second. The greater number occur during the winter months; bacteriologic examinations were made in 15 cases; in 10 of these the bacterium present was *Staphylococcus pyogenes aureus*; other bacteria found were *Staphylococcus pyogenes albus*, streptococcus, typhoid bacillus, and diplococcus lanceolatus. As exciting causes in his cases he enumerates furuncles, traumatism without external lesions, skin wounds, varicella, pneumonia, angina, typhoid fever, and empyema. In four instances a recurrence was noted. The amount of shortening was very slight in nearly all the cases, not sufficient to produce any discomfort. [E.L.]

Operation for Chronic Gastric Ulcer.—Mansell Moullin¹ believes that when ulcer of the stomach has become chronic it is hardly ever cured in the full sense of the term. The older the ulcer becomes the less the chance of healing and the greater the liability to complications. Moullin has operated in 13 cases of this kind, not counting perforations. In many of the patients the loss of blood had been extreme. In six transfusion was performed on the table or immediately afterward. Two patients in desperate condition died. The others recovered without bad symptoms. He believes that if the two patients who died had been operated upon before so much blood was lost they would have probably recovered, and if ulcers of the stomach were operated upon as soon as recognized, before they have become chronic, there would be fewer deaths from hematemesis, perforations, and such later troubles as pyloric stenosis, hour-glass contraction, pain and dyspepsia from adhesions, perigastric and subphrenic abscesses, and dilation of the stomach would become far more rare than at present. [M.B.T.]

A Case of Artificial Anus with Peculiar Etiology and Rare Localization.—Speiser² relates the case of a woman in whom recurrence of a vaginal carcinoma occurred in the inguinal and pelvic lymph glands. One of the inguinal glands on the left side suppurred, requiring incision; other smaller abscesses existed in the neighborhood of the left obturator foramen. The latter opened into the rectum and also burrowed forward into the inguinal wound, thus producing an artificial anus, which beginning at the upper part of the rectum, passed beneath the horizontal portion of the pubic bone, through the obturator foramen, and terminated in the inguinal abscess. [E.L.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

A Case of Uterine Rupture Intrapartum Cured Without Operation.—Mendel³ reports the case of a multipara whose uterus during the birth of the seventh child (partly decomposed) was torn from cervix to fundus. A coil of intestine prolapsed and came in contact with the dirty bed clothes; the putrid placenta was removed from among coils of intestine. The intestines were cleansed and replaced, the uterus and vagina tamponed with iodoform gauze and ice applied locally. The woman did not present a single bad symptom after the shock; the gauze was removed on the sixth day, and she left her bed on the fourteenth day. She was delivered of a living child several times after successfully. [E.L.]

Operative Treatment for Puerperal Pyemia.—Sippel⁴ wishes to correct his earlier opinion that puerperal pyemia, with rare exceptions, ends fatally. Not a small number of patients recover spontaneously. These are those in which there are no disturbing symptoms during the first few days of the puerperium, in which the uterus has shown good involution, and in which early chills are not virulent and the general condition is negative. In such cases the thrombic mass shows no tendency to spread and the chills soon cease. In other cases the long continued and repeated chills are followed by high fever and complicated by alarming appearances. The involu-

¹ Lancet, December 20, 1902.

² Münchener medizinische Wochenschrift, October 21 and 28, 1902.

³ La Semaine Médicale, 1902, Vol. xxii, p. 400.

⁴ Gazette heb. de Médecine et de Chirurgie, December 11, 1902.

⁵ Jahrbuch für Kinderheilkunde, 1902, Vol. lvi, p. 49.

¹ Lancet, December 27, 1902.

² Deutsche medizinische Wochenschrift, October 30, 1902.

³ Deutsche medizinische Wochenschrift, November 6, 1902.

⁴ Centralblatt für Gynäkologie, December 13, 1902.

tion of the uterus is checked; in the ligaments thickened veins can be felt and albuminuria sets in. This indicates a virulent thrombus and without relief must soon cause death. When the abdomen is opened the surgeon can judge by inspection whether the resection of a vein will suffice, or whether the walls of the uterus being engorged its removal is necessary. During the operation it is recommended to irrigate the infected region with normal warm saline solution. This irrigation preserves the epithelium of the peritoneum completely, so that its natural protective power against infection remains unimpaired. Sippel expresses his faith that Trendelenburg's hope will be realized that not only the chronic but also the acute form of puerperal pyemia can be successfully combated through properly timed operative treatment. [w.k.]

Spasmodic Contraction of the Os as an Obstruction to Delivery.—Durlacher¹ reports what he considers an unusual case in which delivery was prevented by a spasmodic closing of the os during the labor pains. Between the pains the os seemed soft and distensible, but at each pain there occurred a ringformed spasmodic closure. Hence the use of forceps became necessary, and gentle traction could be employed only during the intervals between the pains, yet in 20 minutes the living child was delivered. This condition seemed entirely different from a rigid os, and the writer thinks would eventually result in rupture of the lower uterine segment without instrumental delivery. Mechanical aid appears to be the only effective therapy in such instances. [w.k.]

An Apparatus for the Application of Local Cold in the Genital Tract.—Stroynowski¹ describes an apparatus which he has devised to supersede the icebag for the relief of pain in the pelvic organs. It consists of two lead tubes which open into a metallic knob flattened on two sides. One tube is for the inflow and the other for the outflow of the icewater, and both are covered with rubber to protect the vagina from the cold, while the knob is adjusted to the painful or inflamed organ, thus relieving pain or reducing inflammation. The writer says it is not to be denied that this instrument could be used in the beginning of tubal pregnancy to produce tubal abortion. By this simple local process the patient would escape the danger of an operation. [w.k.]

A Case of Primary Carcinoma of the Tube.—According to Graefe,² Orthmann reported the first sure case of primary tubal carcinoma, in 1888. Subsequently Zangemeister published a table of 52 cases, but in 14 years few more have been added to this list. In comparison with ovarian and uterine cancer the tubal is exceedingly rare. Graefe adds another to the list. When he first saw the patient he found an enlarged retroflexed uterus, a sausage-like tubal tumor the size of an orange, and a small mucous polyp hanging from the external os. The diagnosis was hydrosalpinx and pyosalpinx, and because of the blood-colored watery discharge the possibility of a tubal cancer was recognized. For this reason celiotomy was advised, but refused. Hydrastis was employed and a large Meyer's ring introduced, under which treatment the discharge ceased and the patient's general condition was much improved. When Graefe saw her two years later, for three months she had been suffering a yellowish discharge and severe abdominal pains. The tubal tumor seemed unchanged, the uterus was smaller, and just below it was a movable tumor the size of a child's head. She now consented to an operation and a right-sided, intraligamentous ovarian cyst was removed, also the left-sided tubal sac. Her convalescence was undisturbed, and eight months after operation she was in good condition. The tubal sac was opened and emptied of a pure serous fluid, and situated on its thin walls a tumor the size of a chestnut was found, which the microscope showed to be a papillary carcinoma. This case is an evidence of the long time that a carcinoma may remain in a tube in a benign form. The writer suggests two causes for its slow growth—the pressure of the Meyer's ring upon the tubal sac and the complete closure of the uterine ostium of the tube with the cessation of the usual discharge. At the time of the operation there were nowhere any signs of metastasis. [w.k.]

Atrophy of the Uterine Mucosa.—R. Volk¹ reports the case of a woman suffering from what was variously diagnosed as a sixth-month pregnancy and as tumor but which proved to be the latter. At operation a myoma was found situated upon the anterior wall of the uterus which was removed and the patient recovered. The interesting feature of the case was the complete atrophy of the mucous membrane of the uterus. The development of an intramural myoma generally causes hyperemia of the mucosa which bleeds very freely. The opposite was the result in this instance. As the patient had had scarlatina in childhood and her menses had been very irregular and very slight, only continuing one day, Volk was in doubt whether to ascribe the atrophy to the scarlatina or to the presence of the myoma. [w.k.]

Hemorrhage During the Later Months of Pregnancy and Early Stages of Labor.—Jardine² states that the marginal variety of placenta prævia in which only a small portion is below Bandl's ring and bleeding is not great occurs more frequently than is supposed. Palliative measures to stop hemorrhage should be tried if the fetus is not viable. Rest, opiates, and laxatives are indicated. If the fetus is viable and the hemorrhage severe, the cervix and vagina should be plugged. When the cervix is sufficiently dilated a leg should be brought down and gentle traction continued. In these cases the head should never be dragged through the undilated os; a torn cervix with placenta prævia is sure to cause excessive hemorrhage, with probable death. When the os is fully dilated, delivery should be effected at once by version or forceps, stripping off the placenta so far as one can reach before turning. After delivery the placenta should be removed at once. Ergotin should be administered and the uterus grasped between one hand in the posterior fornix and the other on the abdomen. In accidental hemorrhage the plug may be used with safety if uterine contractions are fairly strong; if there are no contractions the danger of converting an external into an internal hemorrhage is great. If postpartum hemorrhage continues after trial of the usual remedies, Jardine recommends injection of suprarenal extract into the uterus, or using a plug wrung out of it. [H.M.]

Vaginal Cesarean Section.—Bumm³ describes 13 cases of this operation with one death which occurred three hours after the operation in case of eclamptic coma. The eight cases which came to the hospital in an aseptic condition recovered without fever. Fever occurred in four cases, one after removal of a fetid cancer, two were cases of eclampsia and one of nephritis. While at first cervical carcinoma was the most frequent cause for vaginal cesarean section, Bumm thinks it should now be used in many cases of eclampsia, he having been brought by a year's experience of different methods to the opinion that in cases of eclampsia delivery should follow the first attack and that the vaginal method is simpler and less dangerous than the classic cesarean section, and in his opinion is much more certain and exact than the use of the metallic dilators now in vogue. In one case this method was used on account of severe hemorrhage from a deep-seated placenta. He deems it advisable also when a torpid uterus reacts very badly, or not at all, in response to any irritant or stimulant such as manipulation or introduction of instruments so liable to cause infection. He advises early operation so as to preserve the fetus intact and uninjured. [w.k.]

Primiparas Under 16 Years.—Palotai,³ from a review of the literature on this subject and the statistics of 24 cases, reaches the following conclusions regarding the labor and delivery of primiparas under 16 years of age: The course of pregnancy is normal, rarely interrupted by abortion; more frequently by premature delivery; the labor is of short duration and mild in character; the necessity for surgical interference is not to be feared; the prognosis in regard to injuries of the birth canal during delivery is very good; the puerperium does not differ from the normal, and there is the best prognosis for the child. He believes that nature takes care when conception becomes possible that the consequences usually run their course without special hindrance. [w.k.]

¹ Centralblatt für Gynäkologie, December 13, 1902.

² Centralblatt für Gynäkologie, December 20, 1902.

¹ Centralblatt für Gynäkologie, December 20, 1902.

² Scottish Medical and Surgical Journal, September, 1902.

³ Centralblatt für Gynäkologie, December 27, 1902.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

To *Editor of American Medicine*:—I have used the vapor of carbolic acid in the treatment of pulmonary tuberculosis of the lung in a way that I have never seen in print. I use a lamp that burns kerosene and has a chimney about 2½ inches long. Just above the top of the chimney is a small metal basin which will hold about 1 ounce. Light your lamp at bedtime. Fill the basin with carbolic acid and you have a treatment that works while you sleep. The kerosene and acid will last till morning. The acid does not boil but gently fumes. It is not unpleasant to the taste and smell. Cough is relieved; the breathing is fuller and freer; the general condition soon begins to improve. A man aged 29 is now using it with marked improvement in every respect. He is compelled to sleep in same room with his wife and three children. I believe it is a great help to them also as a preventive. I have never seen any bad effects from its use. I used it with my children when they had whooping-cough. It did good.

C. C. HUBBARD, M.D.,
Worthville, N. C.

[We publish the above without endorsement or condemnation. The method is not new, and while decidedly useful in whooping-cough, needs more care than the letter of our correspondent would imply. In pulmonary tuberculosis it ranks among the number of more or less useful palliatives and has no curative value.]

REVIEW OF LITERATURE

Kephyr.—Henry Duprat¹ has made a complete study of kephyr and recommends it as a substitute for milk in cases in which no other food can be taken. Kephyr is an acidulated beverage made from cow's milk or from goat's milk by a process of special fermentation with irregular yellowish grains composed of yeast fungi and bacteria. There are three varieties of kephyr, depending on the degree of fermentation. Kephyr No. 1, obtained after 24 hours, has a slight laxative action; it contains 0.6% of alcohol; No. 2 is fermented for two days; it has the disadvantage of sometimes causing diarrhea and must then be replaced by kephyr No. 3, which is slightly constipating and contains about 0.9% of alcohol. Kephyr No. 2 is employed ordinarily. It should be given in small doses at first, half a glass the first day, increased gradually until two or three quarts are taken in 24 hours. It is employed in cases of general feebleness, muscular and nervous asthenia, severe gastroenteritis of children, in gastric cancer and dyspepsia due to deficient secretion of hydrochloric acid and in various intestinal disorders. It should be swallowed slowly in order to avoid the too sudden formation of carbonic acid in the stomach. [L.F.A.]

Diuretic Value of Agurin.—DeBuck² reports his trials of agurin, which is the double salt of theobromin and sodium acetate. It has the advantage over the older theobromin preparations that it is less likely to disturb the stomach. He asserts for it that it not only increases the quantity of urine but that it also favors the elimination of solids, and that acetyl radical by oxidation in the system renders the organic exchanges more active. In cases of diminution of urine from fever or from weakness the drug is very helpful. He also found it useful in dropsy of cardiac origin, especially when combined with heart tonics, as digitalis. In cases, however, in which there is degeneration of the renal epithelium the drug has little power. It is best given in solution, in peppermint water for example, in doses of 0.25 to 0.5 gm. (4 to 8 grs.) daily. [H.C.W.]

Cigar Ashes in Insect Bites.³—It has been advised to use cigar ashes in the treatment of insect bites in the place of ammonia, which is not always at hand. The ashes are moistened with water and placed on the bitten area. The potassium carbonate found in the ash is believed to counteract the acid which is secreted by the insect and deposited in the wound. [W.E.R.]

Canceroin in the Treatment of Cancer.—R. Dalla Vedova¹ reviews a paper by Adamkiewicz entitled "New Successes of Canceroin in Cancer of the Tongue, the Larynx, the Esophagus, the Stomach, and the Breast," and then proceeds to relate the subsequent history of two of the cases as reported by Eiselberg and by Kohn, one of which was operated upon, the other dying of cancerous degeneration. Testimony as to canceroin is cited from Poten and Schultz-Schultzenotein, and the conclusion is reached that there has been an excessive and precipitate enthusiasm for an agent which is entirely without value in the cure of cancer. [C.S.D.]

Treatment of Painful Reflex Anuria by Epidural Injections of Cocain.—Bergouignan² reports the case of a woman suffering from locomotor ataxia, who presented the following urinary symptoms: Night and day she complained of a frequent desire to urinate, coincident with severe painful crises localized in the lower part of the abdomen, and comparable to a sensation of torsion or constriction. During these crises there was a very painful emission of a few drops of urine. Not more than eight ounces of urine was passed in 24 hours. There was no history of locomotor ataxia in her family. Her illness began four years previously by disturbances in gait, soon followed by girdle and vesical pains with vomiting. The urinary symptoms continued without interruption since the beginning of the disease, and combined with the gastric crises rendered existence intolerable. No treatment which she had received lessened the vesical pains or increased the amount of urine voided. The injection of 15 minims of a 2% solution of cocain into the spinal canal was followed by immediate relief; the pain decreased gradually and disappeared in 10 minutes. In the evening the patient had a desire to urinate, but was unable to do so. The following morning, however, she urinated abundantly without pain. The next morning the vesical pains returned, although very slightly, and disappeared during the afternoon. Because of a slight return of her symptoms, a second injection of 20 minims of a 2% solution of cocain was given three days after the first. During the days following, micturition became more and more easy, the patient passing about two quarts daily. Nine days after the last injection she was discharged cured. Six months later the vesical crises returned. An injection of 15 minims of the same solution was followed by complete relief. Bergouignan employed this treatment in many such cases with excellent results. [L.F.A.]

A Prophylactic Against Nephritis in Scarlet Fever.—Tobeitz⁴ advises turpentine oil in scarlet fever to prevent the development of nephritis. This complication is seen in 5% of all cases of scarlet fever, but after this treatment it was found in only three out of 136 cases. Tobeitz prescribes 12-25 drops of this oil in a day. [W.E.R.]

Ichthyol in Tuberculosis.—Williams⁵ reports favorably on the use of ichthyol in tuberculosis. He quotes the statement of Zuelzer that it lessens the nitrogenous elimination and increases the body weight. He has employed it in 600 cases, and believes it the most useful drug we have in the treatment of this disease. It has a great advantage over creasote in that it does not disturb the stomach; indeed, it seems rather to improve the condition of the digestive tract. After its use the cough becomes easier and expectoration thinner. He believes it has a valuable action as an expectorant. He employed it with favorable results in tuberculous ulcers and caries of bone. He first cures as thoroughly as possible and packs with gauze saturated with pure ichthyol. Recently he has employed a suspension of ichthyol with orthoform, with very favorable results. In laryngeal tuberculosis he employs a 10% spray. Ichthyol is preferably administered in capsules, beginning with .6 cc. (10 minims), and increasing up to 2 or 2.5 cc. (30 or 40 minims) three times a day. Its greatest drawback is its unpleasant taste, which sometimes persists for a long time. Recently he has employed a tasteless preparation known as ichthoform, with equally good results. [H.C.W.]

¹ Il Pollicinico, December 6, 1902.

² Berl. Klin. Woch., 1902, p. 569.

³ Journal des Praticiens, Vol. xvi, No. 33, 1902, p. 516.

⁴ Arch. f. Kinderheilk'd., Bd. 34, Heft 3-4.

⁵ Journal of Tuberculosis, 361, October, 1902.

¹ Journal des Praticiens, Vol. xvi, No. 37, 1902, p. 589.

² Merck's Archives, September, 1902, 348.

³ Schweiz. Wochenschrift f. Chemie u. Pharm., July 12, 1902.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended January 17, 1903:

SMALLPOX—UNITED STATES.			Cases	Deaths
California:	Sacramento.....	Dec. 27-Jan. 3.....	1	
Colorado:	Denver.....	Dec. 27-Jan. 3.....	7	
Connecticut:	Thompson.....	Jan. 10.....	1	
Florida:	Pensacola.....	Dec. 6-Jan. 10.....	49	
Georgia:	Atlanta.....	Dec. 24-Jan. 7.....	14	3
Illinois:	Chicago.....	Jan. 3-10.....	6	
Indiana:	Evansville.....	Jan. 3-10.....	1	
	Indianapolis.....	Dec. 27-Jan. 10.....	95	16
Kentucky:	Covington.....	Nov. 27-Jan. 10.....	82	2
	Newport.....	Jan. 3-10.....	2	
Louisiana:	New Orleans.....	Jan. 3-10.....	1	
Maine:	Biddeford.....	Jan. 3-10.....	7	
Massachusetts:	Boston.....	Jan. 2-9.....	10	3
	Cambridge.....	Jan. 3-10.....	2	
	Fall River.....	Jan. 3-10.....	2	
	Lowell.....	Jan. 3-10.....	1	
Michigan:	Detroit.....	Dec. 27-Jan. 10.....	78	
	Grand Rapids.....	Jan. 3-10.....	18	
Missouri:	St. Louis.....	Dec. 28-Jan. 4.....	9	1
Nebraska:	Omaha.....	Jan. 3-10.....	11	
New Hampshire:	Manchester.....	Jan. 3-10.....	2	
	Nashua.....	Jan. 3-10.....	3	
New Jersey:	Camden.....	Jan. 3-10.....	3	
	Newark.....	Dec. 27-Jan. 10.....	1	1
New York:	Buffalo.....	Jan. 3-10.....	2	
	New York.....	Jan. 3-10.....	1	
Ohio:	Cleveland.....	Jan. 3-10.....	9	2
	Dayton.....	Jan. 3-10.....	2	
	Toledo.....	Dec. 27-Jan. 10.....	26	1
Pennsylvania:	Altoona.....	Jan. 3-10.....	2	2
	Erle.....	Jan. 3-10.....	10	1
	Johnstown.....	Dec. 27-Jan. 10.....	2	1
	McKeesport.....	Jan. 3-10.....	1	
	Northumberland.....	Dec. 1-30.....	14	
	Philadelphia.....	Jan. 3-10.....	33	
	Pittsburg.....	Jan. 3-10.....	22	1
	Reading.....	Jan. 5-12.....	1	
Tennessee:	Memphis.....	Jan. 3-10.....	1	
Utah:	Salt Lake City.....	Dec. 27-Jan. 3.....	10	
Wisconsin:	Milwaukee.....	Jan. 3-10.....	5	

SMALLPOX—FOREIGN.			Cases	Deaths
Austria:	Prague.....	Dec. 6-20.....	25	
Barbados:	.....	Dec. 5-20.....		2
Belgium:	Antwerp.....	Dec. 6-20.....	10	3
	Brussels.....	Dec. 13-20.....	1	1
Canada:	Winnipeg.....	Dec. 27-Jan. 3.....	1	
France:	Paris.....	Dec. 13-20.....	1	1
Great Britain:	Cardiff.....	Dec. 20-27.....	1	
	Dublin.....	Dec. 20-27.....	1	
	Dundee.....	Dec. 13-27.....	2	
	Leeds.....	Dec. 20-27.....	3	
	Liverpool.....	Dec. 20-27.....	74	1
	London.....	Dec. 13-20.....	5	
	Manchester.....	Dec. 13-27.....	7	
	Sheffield.....	Dec. 13-27.....	8	
India:	Bombay.....	Dec. 2-9.....		7
	Calcutta.....	Nov. 27-Dec. 6.....		2
Mexico:	City of Mexico.....	Dec. 28-Jan. 4.....	2	5
Russia:	Moscow.....	Dec. 6-13.....		2
	Odessa.....	Dec. 6-20.....	7	2
	St. Petersburg.....	Dec. 13-20.....	24	2

YELLOW FEVER.			Cases	Deaths
Mexico:	Tampico.....	Dec. 27-Jan. 3.....	10	
	Tuxpan.....	Dec. 23-30.....	1	
	Vera Cruz.....	Dec. 27-Jan. 3.....	6	2

CHOLERA.			Cases	Deaths
India:	Bombay.....	Dec. 2-9.....		1
	Calcutta.....	Nov. 27-Dec. 6.....		51
Java:	Batavia.....	Nov. 22-29.....	6	2

PLAGUE.			Cases	Deaths
India:	Bombay.....	Dec. 2-9.....	133	
	Calcutta.....	Nov. 28-Dec. 6.....		25
	Karachi.....	Nov. 30-Dec. 7.....	12	11
Mexico:	Ensenada.....	To date.....	14	13
	Mazatlan.....	Dec. 31.....	Officially reported	

Changes in the Medical Corps of the U. S. Army for the week ended January 17, 1903:

HOFF, Lieutenant-colonel JOHN VAN R., deputy surgeon-general, leave granted for seven days is extended twenty-three days.

CAMPBELL, GEORGE F., hospital steward, is relieved from further duty at the Army and Navy General Hospital, Hot Springs, Ark., and will proceed to Fort D. A. Russell to relieve Hospital Steward Henry Bunker. Steward Bunker will proceed to Manila, P. I., for assignment to duty.

AYER, IRA, contract surgeon, is granted leave for two months to begin and end in Manila, and with permission to visit Japan.

BLOOMBERG, First Lieutenant HORACE D., assistant surgeon, is granted leave for one month to take effect upon his being relieved from duty at the U. S. General Hospital, Fort Bayard.

HESS, First Lieutenant LOUIS T., assistant surgeon, will proceed to Legaspi, Albay, for duty.

ADAIR, Lieutenant-colonel GEORGE W., deputy surgeon-general, will proceed to Zamboanga, Island of Mindanao, reporting to the commanding general, department of Mindanao, for assignment to duty as chief surgeon of that department.

CORBUSIER, HAROLD D., contract surgeon, is granted leave for ten days, from about January 31.

KIRKPATRICK, Captain THOMAS J., assistant surgeon, is granted leave for one month, to take effect upon his relief from duty at Fort Barrancas.

MAXWELL, SAMUEL A., contract surgeon, is relieved from duty at Fort Grant and will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where he will report for assignment to duty.

DAYWALT, GEORGE W., contract surgeon, now in Washington, D. C., will proceed to Fort Schuyler for duty, to relieve First Lieutenant Theodore C. Lyster, assistant surgeon, who will proceed to West Point, N. Y., and report to the superintendent of the U. S. Military Academy for duty.

WOOD, HALSEY L., contract surgeon, is relieved from further duty on the transport Warren, and will proceed to Vancouver Barracks for duty.

TURRILL, Lieutenant-colonel HENRY S., deputy surgeon-general, now in temporary charge of the medical supply depot in New York City, will assume permanent charge of that depot.

The following-named officers, now at San Francisco, Cal., will proceed to their respective homes, where they are authorized to await their honorable discharge, February 1, 1903: Majors Robert Burns, Frederic A. Washburn, Jr., R. H. Zauer, Frederic Hadra, Abram L. Haines, H. A. Grube, surgeons, U. S. Volunteers; Captains Fred M. Barney, W. Turner Wooton, Herman J. Schlageter, Thomas K. Mullins, John Gilbert, Clark I. Wertensbaker, Herbert Gunn, Gerry S. Driver, Edwin M. Trook, James F. Presnell, Harry A. Littlefield, Charles G. Elcher, T. C. Longino, William T. Tanner, Frederic A. W. Conn, Leonard K. Graves, Edward A. Romig, James B. Pascoe, Francis J. Bailey, assistant surgeons, U. S. Volunteers.

So much of orders of December 5 as relate to the discharge of Captain Perceval S. Rossiter, assistant surgeon, U. S. Volunteers, is amended so as to honorably discharge Captain Rossiter January 14, 1903, upon tender of his resignation.

The following-named contract surgeons are relieved from duty in the department of California, and will report for transportation to the Philippine Islands, where they will report for assignment to duty: William G. Gregory, Alwin M. Guitard, John F. Leeper, James R. Mount.

HALL, HENRY M., contract surgeon, now at Cedartown, is relieved from further duty as transport surgeon on the transport McClellan, and upon the expiration of his present leave will proceed to the Philippine Islands for duty.

Changes in the Medical Corps of the U. S. Navy for the week ended January 17, 1903:

HAAS, H. H., passed assistant surgeon, ordered home via Prairie—January 9.

PAGE, J. E., passed assistant surgeon, detached from the Newark and ordered to the Montgomery—January 9.

BENTON, F. L., passed assistant surgeon, detached from duty with recruiting party, ordered to Washington, for assignment with battalion of marines, leaving for the Philippines—January 10.

TAYLOR, R. L., KEENE, W. P., McCORD, D. P., and JANNEY, W. H., appointed acting assistant surgeons for three years' service—January 10.

CRAWFORD, C. A., passed assistant surgeon, resignation accepted to take effect January 12, 1903—January 12.

CHAPMAN, R. B., JUDD, H. W., MILLER, J. T., and CAMPBELL, R. A., appointed acting assistant surgeons for three years' service—January 12.

McCORD, D. P., acting assistant surgeon, ordered to Lansing, Mich. for duty with recruiting party—January 12.

TAYLOR, R. L., acting assistant surgeon, ordered to Ogden, Utah, for duty with recruiting party—January 12.

BUCHER, W. H., passed assistant surgeon, detached from Naval Hospital, Norfolk, Va., and ordered to the Naval Hospital, Pensacola, Fla.—January 13.

GORDON, F. T., pharmacist, ordered to the Naval Dispensary, Washington, D. C., for duty—January 14.

LEDBETTER, R. E., assistant surgeon, detached from the Illinois and ordered to the Newark—January 14.

Changes in the Public Health and Marine-Hospital Service for the week ended January 15, 1903:

WHITE, J. H., assistant surgeon-general, to proceed to Brunswick, Ga., for special temporary duty—January 13, 1903.

CARTER, H. R., surgeon, leave of absence for three days under paragraph 179 of the regulations amended so that it shall be for two days only.

GUITERAS, G. M., passed assistant surgeon, to report to chairman of board of examiners at Washington, D. C., January 15, 1903, for examination to determine his fitness for promotion to the grade of surgeon—January 13, 1903.

OAKLEY, J. H., passed assistant surgeon, granted leave of absence for two days from January 21—January 13, 1903.

LAVINDER, C. H., passed assistant surgeon, granted leave of absence for one month from January 23—January 13, 1903.

DUKE, B. F., acting assistant surgeon, granted leave of absence for ten days from January 4—January 7, 1903.

WALKLEY, W. S., acting assistant surgeon, granted leave of absence for five days from January 13—January 16, 1903.

American Medicine ¹⁶¹

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The increased mortality from pneumonia has often been alluded to in our columns, but we fear the fact has not arrested the attention either of the public or of the profession as it should. In the latest issue of the Bulletin of the Chicago Health Department are figures that are really startling. Our crusade against pulmonary tuberculosis seems almost a mockery if the death-rate from pneumonia rises while that from tuberculosis falls. In the last two years the deaths from pneumonia have been one-eighth of all, one-third more than from pulmonary tuberculosis, and 46% more than from all other contagious and infectious diseases combined. During the first 17 days of January, 1903, more than one-fifth of all deaths were due to pneumonia. The deaths from tuberculosis in Chicago in 1860 were 25.28 per 10,000 (276 deaths in 109,206 population). In 1900 they were 15.30 per 10,000 (2,599 deaths in 1,698,575 population), a decrease of nearly 40% (39.1) of tuberculosis mortality in the 40 years. From pneumonia the 48 deaths in 1860 represent a rate of 4.40 per 10,000 of the population; in 1900 the 3,389 deaths represent a rate of 19.95 per 10,000, an increase of more than 350% (353.4) of pneumonia mortality. The whole country shows a decrease of 20.7% of deaths from tuberculosis and an increase of 7.4% of deaths from pneumonia during the 40 years.

Ignoring the New Until the Quacks Force it Upon Our Attention.—An eminently sound and conscientious practitioner tried in vain for 20 years or more to arouse the profession to a sense of the value of massage and mechanical therapeutics in the treatment of certain diseases. At last he gave up in despair. It was not just then fashionable. Editors would not accept his articles, and the lazy-minded, the exploiters of the popular opinion, beguiled themselves with the old-fashioned sneer at the “hobbies of hobby-riders”—and the world went on in its blind way. Then came the osteopaths and the biceps-worshippers of the cheap magazines, and what the profession would not listen to from its own members was, willy nilly, forced upon the attention by the quack. It is true that other regulars and scientists prior to the quack knew all and far more than he of the value of massage, but like so much other knowledge, it was not realized in daily practise by the leaders and by the masses of the profes-

sion. It required the compulsion of ignorant popular enthusiasm to make us actually treat our patients by these methods and to put into use the partial veritable truth turned into an untruth by the extremism and indiscrimination of the charlatan. But why need we carry out, generation after generation, this stupid belittling and ignoring of the new truth? There are many such illustrations as the one we have cited, of our strange indifference to methods of treatment, 10, 20, or 30 years after demonstration has been made of their efficacy and value. Let us keep our minds open and flexible!

The county jail, says *Charities*, at least in New Jersey, “as a school for crime is a great success. As a place for punishment, it is an absolute failure. As a part of the State’s correctional program, it is a lamentable farce.” In only one jail of the State is employment afforded. In the entire State, except eight “probation officers,” there are no public reformatory influences for girls and women. Continual recommitment, of course, plunges the poor creatures into deeper degradation. “Feeble-minded girls come again and again to the almshouse to give birth to feeble-minded children.” “The prosecutor of Middlesex characterizes its jail as notoriously insecure, filled with filth, vermin, and disease-germs.” The enforced idleness (the inmates are not even required to wash themselves), the mixture of young and old offenders, etc., add to the horror of this medieval barbarism persisting in supposed civilization. To make reform impossible the larger the number of prisoners the greater the profits of the 21 sheriffs of the State, who make each year a clear profit from board of prisoners amounting from \$30,000 to \$60,000.

The Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis.—Dr. Lawrence F. Flick has at our request kindly furnished us with an epitome of the plans of the institution, from which we learn that it is to be devoted exclusively to the work of exterminating tuberculosis. Prevention will be the ultimate object of all that is done in the institution, which will be planned and operated with this aim foremost in mind. The institute will consist of pavilions with a capacity of 100 beds, well equipped laboratories, facilities for hydrotherapeutic and prototherapeutic work, and of such other accessories as may be

necessary. There will be a dispensary wherein treatment and aid will be given to the consumptive poor who are unable to stop work or who cannot gain admission to some institution. The pavilions will be built with balconies and a roof garden so that patients may be kept in the open air as much as possible, and the wards and balconies will be so constructed that every bed can be run out on a balcony. The beds will be used exclusively for patients in advanced stages of the disease, the object being to take them out of their homes and thus prevent the spread of the disease. The house patients will furnish the clinical material for scientific research in the laboratories and in the various departments. Facilities will be given for testing all new methods of treatment having a scientific basis. The dispensary work will be modeled upon the Emile Roux dispensary, at Lille, under the management of Dr. A. Calmette. Patients will be treated both at the dispensary and, when too far advanced to come to the dispensary, at their homes. Medicine and food will be supplied them when necessary, as also disinfectants, spit-cups, and paper napkins. They will be taught the use of these things, and they will be kept under supervision so as to carry out proper preventive measures. Printed instructions will be furnished in order to prevent the spread of the disease and an effort will be made to enforce the rules which are laid down. A literary bureau will be established through which information about the work in tuberculosis throughout the American Continent will be gathered, and from which information may be sent out to all who desire it. An effort to stimulate activity in the crusade against tuberculosis will be made through this bureau, and aid will be extended in efforts at organization wherever such aid is called for. If the growth of the work will justify it a magazine will be published devoted to the cause. The holding of conferences and congresses upon the subject of tuberculosis for the purpose of stimulating thought and action will be encouraged and patronized. The staff of the institute will be gradually formed as necessity arises and will be composed of young men who desire to devote themselves to the study and prevention of tuberculosis. With a view of bringing clinical and laboratory work as closely together as possible only men will be appointed to the staff who are trained in both clinical and laboratory work. As ultimately equipped the staff will consist of four clinical chiefs—a surgical chief, a laryngological chief, a dermatological chief, and a neurological chief—each of these with the requisite assistants. The four clinical chiefs will preside over the wards and the dispensary, and the others will have charge of special work and will be given opportunity for special study. The plan here briefly outlined may have to be modified by practical experience, but gives in a general way what is contemplated. A temporary place will be secured and work will be inaugurated in this temporary home during the time that the permanent establishment will be planned and erected. It is expected that this time will be about one year.

The King's Sanatorium for Consumptives.—King Edward, it will be remembered, offered three

prizes for the best essays upon and plans for a sanatorium for tuberculous patients. The prizes were \$2,500, \$1,000 and \$500. The first was awarded by the advisory committee to Dr. Arthur Latham with the assistance of the architect, Mr. A. William West. Dr. Latham's paper is an admirable extension of his own motto: "Give him air; he'll straight be well."

Dr. Latham is only in his thirty-fifth year, and besides carrying on a practice at Brook street is an assistant physician at St. George's Hospital and at the Brompton Hospital for Consumption. He is the son of Dr. Latham, professor of medicine at Cambridge. To Hermann Brehmer Dr. Latham gives the honor of having founded the system now to be developed. According to Dr. Latham the essential principles to be observed are a life spent in the open air under conditions which give immunity from tuberculosis; complete freedom from any debilitating circumstances which may lead to an exacerbation of the disease; methodical hill-climbing as an exercise in certain cases; an abundant dietary, in which milk, fatty food and vegetables occupy an important place; constant and unremitting medical supervision. Dust is to be avoided, infected material to be destroyed, a pure atmosphere secured, and indoor amusements and life rigorously discouraged.

Billiards, cards, etc., should be forbidden. In the early stages of the disease pulmonary rest is to be secured by bodily rest, but this must not be allowed to drift into laziness, nor must the other extreme of over-exertion be allowed. Each bedroom, in Dr. Latham's plan, is to be 10 feet high, 12 feet broad and 14 feet deep. Immediately opposite the door is a square projection 7 feet long by 4 feet deep, enclosed by windows looking east, west and south, and any or all of these may be open according to the direction of the wind, so that the patient may lie at ease in fresh air without a draft. If it costs too much to give each room its own three-sided projection, two may be combined, but each room in that case would lose one of its three aspects. The first prize essay, it is understood, was regarded as containing the most practicable plans; the second was approved because it provided for a recreation-room at the top of the building, which in summer could be turned into a roof garden; the third was noteworthy by reason of the comfortable design and appointments of the patients' rooms.

A combination of the three plans should provide a model sanatorium, and as the results of the experiment are to be carefully observed by scientific men, the model may, in course of time, be followed in the erection of similar institutions elsewhere.

Pneumonia a Contagious Disease.—We wonder if the fact that patients and their friends ignore the contagiousness of pneumonia is often due to professional negligence. An exaggerated conception of the contagiousness of tuberculosis is held by the lay world, but pneumonia is, of course, far more contagious. And patients and profession alike have not realized the new fact that the mortality of pneumonia is in some cities and parts of the country higher than that of tuberculosis. Dr. Reynolds, of Chicago, returns to this les-

son and emphasizes the necessity of the following measures:

Pneumonia is a highly contagious disease, the cause of which is a microorganism in the sputa of those suffering from the malady, and contracted by inhaling this germ. Therefore, the same care should be taken to collect and destroy the sputa that is taken in pulmonary tuberculosis, or in diphtheria or influenza.

During the illness the greatest pains should be taken to prevent soiling bed-clothing, carpets or furniture with the sputa, and after the illness the patient's room should be thoroughly cleansed and ventilated.

The fact that the disease is most prevalent in the winter season, when people are most crowded together and live much of the time in badly ventilated apartments, makes obvious the necessity of thorough ventilation of houses, offices, factories, theaters, churches, passenger cars and other public places, in order that the air which must be breathed may be kept clean and free from infectious matter.

Laymen should be taught not to be afraid of a patient who has pneumonia, influenza or tuberculosis, but to be afraid of lack of cleanliness about him during his illness, of failure to enforce prophylactic measures and of close, badly-ventilated apartments during the season when these diseases most prevail.

Since pneumonia is most fatal at the extremes of life—the young and the aged—special care should be taken to guard children and old persons against exposure to the infection of those already suffering with the disease and against cold, privation and exposure to the weather, which are potent, predisposing causes.

The Coal Famine and Increased Mortality.—

From all parts of the country come reports of the increase of sickness and death due to the scarcity and expensiveness of coal. The hospitals in eastern cities are overfilled because patients are unable to get coal at home, and are thus forced into the hospitals. In Chicago the condition is summarized by the Department of Health as follows:

Fully 10%, or nearly 200,000 residents of Chicago, are today suffering from ailments of a grave character caused by privation and exposure resulting from the coal famine. Already these ailments are reflected in the enormous increase of deaths among those at the extremes of life—the young and the aged, in both of whom the powers of vital resistance are at the lowest. Since the first of the year there has been an increase of nearly 20% (19.2) in the number of deaths among those under 5 years of age over the number in the corresponding period of last year, when this deathrate was about normal. Among those over 60 years of age the increase is much greater—24% last week over the week previous, and 36.7% over the normal rate of the corresponding period of 1902.

This excess of increased deathrate among the aged is caused chiefly by the effects of cold and exposure in hastening to a fatal termination many of the chronic diseases, the sufferers from which under ordinary conditions might have survived for many years.

When at last it shall be legally determined who is responsible for this crime against the community, against its very health and life, the punishment should be mercilessly meted out.

What is Osteopathy?—This question is asked by the editor of an osteopathic journal in order to answer it himself. In doing so he finds that it is in part the bloodless operation for hip-joint disease, and that the Lorenz method was done by Still long before Lorenz thought of it, and done much better than Lorenz ever did it, much

quicker, without plaster casts, etc. It is also the method of doing away with ametropia and the need of glasses by giving "a proper blood-supply," etc. Osteopathy, in a word, is a "non-drug and non-operative school of medicine and surgery." But later the editor assures that the microbe theory is "unreasonable and insufficient" because microbes "thrive and grow best only after osteopathic causes have weakened cell-life and the resistance of the tissues." There is but one conclusion to be drawn from this lucid illucidity—that osteopathy both cures and causes (or causes and cures, we are not sure which) the "disturbance in the nutrition of cell-life" which constitutes disease. This remarkable use or misuse of language, however, is the natural product of the mental state which devised the word osteopathy and its more strange definition, as "the mechanical removal of disease causes by manipulative treatment." We had already such words as the following with well-understood meanings and etymologically derived:

Hydrotherapy: The treatment of disease by means of water.

Homeopathy: The treatment of disease by drugs that produce like symptoms.

Allopathy: The treatment of disease by drugs that produce opposite symptoms.

It goes without saying that *osteopathy* can mean only the treatment of disease by bones, *i. e.*, by the application or administration of bones. Such being the case it follows that not Still but Samson was the founder of osteopathy, as osteopathically and accurately set forth in Judges xv, 15, 16, 17.

The adoration of the biceps is the newest and most successful of the modern physiologic idolatries. If one will examine the things for sale at a popular and cheap news stand, he will only begin to realize the extent of the new cult. Then let him buy a dozen copies of the cheap magazines, and sit down to a careful statistical tabulation of the "ads" and the amount of money spent by the biceps worshipers; it will soon be evident that Mother Mary Mason Baker Glover Patterson Eddy has a rival to be reckoned with, and a rival who does not believe that muscles are immaterial. Systems and sects of the muscleers, indeed, have their own distinct magazines, and hundreds of typewriters are at work sending copies of "form-letters" to far away adherents who devotedly believe in the individual treatment of their particular case. From a letter lying or lying (we are not certain as to the orthographic form of the word) before us, we extract the following excerpt. It was addressed to a highly educated physician by a man without education, physiological or medical:

"I will give you an appetite and a strong stomach to take care of it; a digestive system that will fill your veins with rich blood; a strong heart that will regulate circulation and improve assimilation; a pair of lungs that will purify your blood; a liver that will work as nature designed it should; a set of nerves that will keep you up to the standard of physical and mental energy."

All this is to be supplied in half-a-dozen lessons "by mail, \$10.00 in advance." It is not very bad, this new form of religion. It is surely superior to the elder

worship of the navel by the ancients and orientals. Discriminating patients, however, are wearying of it, and turn with relief to the new specialists in genuine medicine, who are rapidly establishing themselves in practice; and who, being trained in physiology and pathology, adapt physical exercises to the always peculiar needs and diseases of the individual patient. The form-letter of the typewriter is not the best way to practise medicine.

Drug adulteration is a peculiarly infamous bit of scoundrelism of which both the medical and pharmaceutical professions should make an end. Whatever may have been the ultimate motives and whoever may be blame-worthy, the recent examinations of 373 samples of one drug obtained from different stores in New York City, of which 315 were found adulterated, reveal a condition of the drug trade that is startling. Is it possible, one is compelled to ask, that but a small percentage of all drugs are pure? If so "therapeutic nihilism" has an unexpected and most sufficient ground for being. How many of the "failures of the patients to react," how many deaths, have been due to the odious adulteration scamps? Again appears the great need of a united and organized profession which would have mind and power to blacklist and thus kill out the dishonest dealers or manufacturers who traffic in human disease and death. If it is easy for a health board to test and demonstrate the adulterated drug after it has been bought from the retailer, it is just as easy for the pharmacist to do so with his own drugs before he sells them. There are many honest druggists who do so, and from whom no impure articles can be obtained. It is our duty as medical men to support them and to aid them in their struggle against the negligent and the criminal who are the common enemies of both the well and of the sick.

The Crime of Encouraging the Professional Beggar.—A few years ago there was unearthed in a European city a manufactory of cripples. For years children had been maimed in every diabolic way that would not bring death, in order to produce the most ghastly objects possible, to be used for the purpose of exciting the pity of the criminal almsgiver. The police in our cities are, to-day, expert in not seeing the professional beggar, and if forced to "run him in" they allow him to return at once. It is only by carrying out the laws against mendicancy that foolish selfish people can be taught the folly of their selfishness, and can be shown how the Society for Organizing Charity can bring relief to the deserving poor. Only thus also can the society expose such atrocities as that of Charles Berkowitz, who has often been in the police courts of New York for 20 years. This man had accumulated a beggars' fortune. According to his own story told the magistrate he was brought to this country from Russia by his parents when he was 13 years old, and was sent out by them on the streets to beg. He said that his parents told him to look at the sun, as this would give his eyes the appearance of being blind. Constant looking at the sun, so he declared, had made him totally blind.

EDITORIAL ECHOES

Another Politician's Blunder.—It is very clear, also, that if Governor Odell had not made his raid upon the State prisons and hospitals, but had left them in the excellent condition in which they had been placed by preceding legislatures and governors, his reelection would not have been doubtful for a moment. His bill repealing former laws which have been the work of experts and disinterested men and women, who were moved by the single desire and purpose to improve the lot of the most unfortunate class in the community, stirred into personal opposition to him an influential class, mostly of his own party. These persons assumed that the object he had in view was to make political spoils of the offices and minor places in these institutions. When he paraded a long list of accusations of extravagance and inefficiency against the boards of managers of these institutions as a reason for abolishing the system, it was found that every charge in the list was either destitute of foundation or was applicable to a state of things long antecedent to the system which he was attacking. These proceedings made him an object of suspicion.—[*N. Y. Evening Post.*]

Vapor and Verbiage.—Some student of morbid psychology should set himself the task of making an exposition of the present American mania for haziness of thought and emotion, concealed under an equally nebulous verbosity. So frightful in extent and passion is this furious intoxication that its bombast and nonsense should not allow us to forget that the drunken orgy must be well paid for. There are thousands of people and hundreds of books and periodicals devoted to the awful art of self-deception by means of diseased introspection and self-consciousness, coupled with an amazing pouring forth of meaningless, grammarless, and magniloquent words. It is also startling to notice how such rubbish is finding its way into periodicals whose editors at last find themselves incapable of longer resistance. Take as an instance several articles in a recent number of the *Medicolegal Journal*. One comes upon whole pages in reading which he wonders if the crazy phantasmagoria of fantastic images and words could have any meaning even to the writers. Philologists will also notice that there is the same soaring away from accepted custom and law in the use of words, as there is in every other department of thought. *Illapse, mesmerizee, menticulture, erythismic, curtained* (of an actor called before the curtain), *spiritualization of the physical*, and hundreds of such terms, the seeming products of hashish dreams, or of the katzenjammer that follows them, meet us in these strange writings. We ask in all seriousness if much of this is not in reality the result of cocaineomania or some other form of drug-drunkenness. Some minds do not act in this way. An article in the latest issue of the *Review of Reviews* on "The New Thought," or "The New Metaphysical Movement," tells us about "circles of silent unity," "mental science temples," "divine scientists," etc. But in all this jargon of the wild-eyed we find that antimedicine and antiscience is, as they would write, "the energizing principle." Mr. Tyner says that "their one aim and teaching is healing—not simply the curing of physical disorders, but that larger gospel of health that includes the comforting of the afflicted and the binding up of the broken-hearted." One of these "mesmerizees," who signs himself Dr., and who describes his doings with his patients, says "by the method of subliminal presentation" he "elevates himself above the plane of the material and the transient and becomes insensible to accusation and insult, immune to the toxin of resentment." The fact is beyond disputing as regards either himself or thousands of other "new physicians" and "new metaphysicians."—[*Cleveland Medical Journal.*]

AMERICAN NEWS AND NOTES.

GENERAL.

Yellow Fever.—It is asserted that yellow fever has made its annual appearance at Vera Cruz, Mexico. Five deaths, including two Germans, have been reported, and there are a number of cases under treatment.

Charter for Tuberculosis Congress.—It is announced that a charter covering a period of 20 years has been granted the American Congress of Tuberculosis. The object of the organization is to study the best methods for the treating of tuberculosis and all pulmonary diseases.

Disease Among School Children.—According to Dr. Kingsman, the medical member of the school board in Washington, D. C., fully 50% of the children attending schools in the southwestern section of the city are sick with either measles, whoopingcough, or chicken-pox. The doctor states that although the trouble has continued now for some time the disease has heretofore been confined to the younger pupils, but now the students in the high schools are affected to some extent. The advisability of establishing a quarantine to protect the community from children so affected is being considered.

Drink in the Army.—The Secretary of War has transmitted to Congress the reports of post commanders and other army officers on the effects of closing the canteen. [See *American Medicine*, Vol. IV, No. 23, p. 880.] In accordance with these reports the Adjutant-General makes the following recommendation: "The restoration of the exchange as it existed prior to the passage of the act of February 2, 1901, prohibiting the sale of beer, is desired and urged by the great majority of officers and men, and by none more than those of pronounced temperance views. Numerous reports confirm the views long held by this office that the old exchange contributed to sobriety, health and contentment of the men. The increase of desertions and of trials for infractions of discipline is, by those best informed, attributed to the abolition of the former privileges of the exchange."

Hospital Benefactions.—PHILADELPHIA: The Presbyterian Hospital has received a gift of \$30,000 for the erection of a maternity house from an unknown friend.—Under the will of the late Moses Reinhard an estate of \$46,000 is bequeathed to the Northern Trust Company as trustee to pay certain annuities and use the balance of the income to establish a room in the Home for Aged and Infirm Israelites of the Jewish Hospital, to be known as the "Michael and Martha Reinhard Room." If this gift shall be accepted, \$15,000 will be paid upon expiration of annuities. If not accepted, the income is to go to the Federation of Jewish Charities and the hospital will receive \$10,000. Among other bequests, subject to annuities, are the Jewish Foster Home, \$10,000; Jewish Maternity Association, for a free bed, \$3,000.—The late Hannah W. Gadsden, of Philadelphia, bequeathed \$5,000 to the Episcopal Hospital. COLUMBIA, PA.: The heirs of the late Henry Houston, of this city, have given \$5,000 to the Columbia Hospital for the endowment of a bed to be known as the "Henry H. Houston Memorial." ALBANY, N. Y.: The late William J. Weaver bequeathed \$5,000 each to Albany Hospital, Child's Hospital, Home for Aged Men, St. Peter's Hospital, and \$2,000 each to Home for the Friendless and the Homeopathic Hospital. GLOUCESTER, MASS.: Under the will of the late George R. Bradford, of this city, the Addison Gilbert Hospital receives \$10,000 for the purpose of maintaining a free bed for indigent persons.

Miscellaneous.—PHILADELPHIA: Dr. Simon Flexner, professor of pathology at the University of Pennsylvania, has received a grant from the Carnegie Institution, and his assistant, Dr. Noguchi, has been appointed the first research assistant.—W. B. Saunders & Company, of Philadelphia, have opened offices in New York City, placing them in charge of Dr. Reed B. Granger, for many years connected with the *New York Medical Journal*, and another representative who is thoroughly familiar with the methods of the Philadelphia house.—EPISCOPAL HOSPITAL: On account of the resignation of Dr. D. D. Stewart there is a vacancy on the medical staff of this hospital.—COLLEGE OF PHYSICIANS AND SURGEONS: Andrew Carnegie has offered \$50,000 for the maintenance of a library, conditioned upon the college raising \$50,000 more. Of this second \$50,000 F. W. Vanderbilt has given \$10,000, and Clement A. Griscom \$5,000. CHICAGO: Dr. Frank Billings has been elected president of the Cook County Hospital staff, and Dr. L. Blake Baldwin has been appointed secretary.—Dr. George W. Webster has been elected president of the Illinois State Board of Health.—Dr. W. B. Wherry, associate in bacteriology at the University of Chicago, has been appointed bacteriologist in the government laboratories at Manila, P. I. BALTIMORE, MD.: The position of surgeon-in-chief of the Presbyterian Eye, Ear, and Throat Charity Hospital, which was creditably filled by Dr. Julian J. Chisolm, who retired voluntarily in 1899, has been filled by Dr. Harlan. The management of the hospital is conducted by a board of three physicians appointed annually. Dr. Francis M. Chisolm, a son of Dr. Julian J. Chisolm, is a member of this board.

EASTERN STATES.

The Convalescents' Home at Wellesley, Mass., was recently destroyed by fire, resulting in a loss of \$25,000. At the time there were about 50 patients, all children, in the building, but every one was removed to a place of safety. The home was connected with the Children's Hospital, Boston, and was one of the largest buildings in town.

NEW YORK.

State Registration of Nurses.—A bill providing for such registration has been introduced in the New York Legislature. The majority of the physicians in the State have petitioned for its passage, because of the increasing number of untrained and incompetent nurses who pass as graduates.

Examinations for Bacteriologist and Laboratory Assistant.—The Municipal Civil Service Commission, of New York City, will hold examinations February 5, 6, to fill the positions of bacteriologist and laboratory assistant in the Department of Water Supply, Gas, and Electricity and in the Department of Health.

Instruction in Mental Diseases.—A course in the methods of instruction in mental diseases has been established at the Pathologic Institute of the New York Hospitals for the Insane, on Ward's Island. The course of instruction is to be continued for several months. Assistant physicians of the hospitals will take part. Several of the State hospitals will each send two physicians in order that as many as possible of the young physicians of the State who have direct charge of the insane may profit by such course of instruction. The latest methods of examining patients, arriving at diagnoses, keeping records, etc., will be carefully taught.

Changes at Bellevue Hospital.—At Bellevue Hospital, in common with the principles in many other hospitals, the custom has been to send out the youngest of the residents in point of service on the ambulance and when calls come in. This has been discontinued, and hereafter only residents having had at least six months' service in the hospital will be permitted to act as ambulance surgeons. Some change has been made in regard to the examination and the admission of patients. The building for the insane at Bellevue is now in charge of three skilled alienists. These physicians will not only receive and care for patients but they also perform the duties formerly exercised by the State Medical Examiners, this latter position having been abolished. The change is thought to be a great improvement over the past method.

PHILADELPHIA, PENNSYLVANIA, ETC.

Pennsylvania State Asylum for Criminal Insane.—A bill introduced into the Legislature provides for the appointment of a commission to select a site for a State Asylum for the criminal insane.

Amendment to Bill Respecting Bequests to Charitable Institutions.—A bill recently introduced into the Pennsylvania Legislature amends the act relative to bequests given to charitable institutions by eliminating the portion that makes such bequests made less than two months before death invalid.

Typhoid Fever and Smallpox.—Typhoid fever has reached an epidemic stage in Philadelphia and smallpox is on the increase. There were 323 cases of typhoid reported for the week ended January 17, as against 217 cases for the week previous. The statement is made that about 2,000 cases are now under treatment in the city. Smallpox has also increased, there being 35 new cases reported for the week ended January 17, as compared with 33 the week before. Throughout Pennsylvania an increase is noted in all diseases resulting from cold, and this is especially true of smallpox, which is well known as a cold weather disease. The statement is made that cases have increased in numbers and virulence to a degree entirely disproportionate to the increase at the same season last year, such increase being due to a very great extent to the present lack of fuel. A vigorous effort is being made to have Legislature reestablish the emergency fund to enable the Board of Health to cope with smallpox and other epidemics which may occur in the State.

Appropriations Asked for by Various State Institutions.—The amounts asked for the year 1903 from the State Legislature by the various public institutions of Pennsylvania reach a total of \$5,201,601.40, while the total amount recommended by the committee on appropriations for the same period is \$3,638,554.66. It will be observed that a large reduction has been made in the sum asked for by most of the public institutions. By far the greatest number of institutions seeking aid are hospitals, and it is confidently hoped by those in charge of such institutions that liberal sums will be granted for their maintenance, as in many instances in the past various hospitals in the State have been seriously crippled for want of proper funds. The total sum asked for by the various institutions for the year 1904 reaches a total of \$5,113,130.13, while the total sum recommended by the committee on appropriations for the same period is \$3,656,083.39. In addition, it is recommended that \$2,000,000 be appropriated for the expense of the indigent

insane for the two years; \$500,000 for a State institution for epilepsy; and \$50,000 for an institution at the Western Penitentiary for the convict insane.

Temporary Home for Phipps Institute.—Temporary quarters for the Phipps Institute for the Prevention of Tuberculosis have been secured by Dr. Lawrence F. Flick at 238 Pine street, Philadelphia. It is understood that these quarters are secured for one year, with the privilege of extending the lease for five years, or of purchasing the property if it is deemed wise. While the quarters are by no means so pretentious as the institute when equipped will afford, yet it is considered that they are sufficient for present needs. It is believed that the temporary quarters will be in working operation within two weeks. According to the *Philadelphia Ledger*, two bills have been introduced into the Legislature for the repeal or modification of the act prohibiting the establishment of new hospitals of any kind in built-up portions of cities. The Senate bill which repeals the present act has already passed that body and has been reported to the House with a favorable recommendation by the Judiciary General Committee. The House bill, which empowers boards of health to grant permission for the establishment of new hospitals in cities, has passed its first reading.

SOUTHERN STATES.

An epidemic of measles is reported to be raging in Baltimore. For the week ended January 24 there were 314 new cases reported, with 11 deaths.

The Eye, Ear, Nose, and Throat Hospital, of New Orleans, La., recently purchased a property in the central part of the city which they will hold as a site for the erection, on some future occasion, of a five or six-story building for hospital purposes. A central location for the contemplated hospital was desired as it would thus be more accessible to the poor and also near the other hospitals and medical schools.

Quarantine Stations Purchased.—It is asserted that the United States Treasury Department has purchased for Florida the State's quarantine stations at Pensacola, Charlotte Harbor, Fernandina, Miami and Mayport, at a cost of \$32,000. This sale was in obedience to a joint resolution of the Florida Legislature of 1901, after an appraisal. The Federal Government took over the quarantine system in July, 1901, and has been operating it since.

WESTERN STATES.

The Western Ophthalmologic and Otolaryngologic Association will hold its next regular meeting at Indianapolis, Ind., April 9, 10, 11, 1903. An interesting program will be rendered.

Women Urge Pure Food War.—It is reported that 1,400 women in Indiana have signed a petition asking the Legislature to appropriate money for a laboratory and for the appointment of chemists who will examine all food to find if it is adulterated.

The Illinois State Medical Society will hold its annual meeting in Chicago, April 29, 30, and May 1, 2, 1903, instead of May 19, 20, 21, as previously announced. This change has been made in order to anticipate the earlier meeting of the American Medical Association at New Orleans.

Health of Chicago.—According to the bulletin of the Chicago Health Department for the week ended January 10, fully 10%, or nearly 200,000 residents of the city, are suffering from ailments of a grave character caused by privation and exposure resulting from the coal famine. Already these ailments are reflected in the enormous increase of deaths among those at the extremes of life—the young and the aged, in both of whom the powers of vital resistance are at the lowest. Since the first of the year there has been an increase of 19.2% in the number of deaths among those under 5 over the number in the corresponding period of last year, when this deathrate was about normal. Among those over 60 the increase is much greater—24% last week over the week previous, and 36.7% over the normal rate of the corresponding period of 1902. This excess of increased deathrate among the aged is caused chiefly by the effects of cold and exposure in hastening to a fatal termination many of the chronic diseases, the sufferers from which, under ordinary conditions, might have survived for many years. "Street car colds" are, in the experience of every physician in general practice, increasing with frightful rapidity. Pneumonia and bronchitis, as direct results, are endemic in every part of the city. Since the first of the year there has been a 22% increase in the deaths from these two diseases, and as compared with the first 10 days of 1902, the increase is a little more than 41%. The great increase of scarlet fever deaths during the past week—16, as compared with 5 during the week before—is due to kidney complications, favored by exposure to cold and following what seemed to be light attacks of the disease. There have been 20 deaths from whoopingcough during the last fortnight, the highest number ever recorded for any similar period. Six cases of smallpox were sent to the isolation hospital during the week. None of the victims had ever been properly vaccinated, although two had old, faint, imperfect marks, said to be from vaccinations in early childhood.

CANADA.

St. Michael's Hospital, Toronto.—Two lots adjoining the hospital property on the north side have been purchased, and the houses occupying them will be remodeled and used as a maternity ward. The space in the hospital at present occupied by this ward will be used to extend the surgical department. Later it is proposed to erect a building connecting the new maternity ward and the hospital proper.

FOREIGN NEWS AND NOTES

GENERAL.

Quarantine Against San Francisco.—The Government of Ecuador announced that all ports of that republic will be closed to steamers arriving from San Francisco owing to the fear of the importation of bubonic plague.

GREAT BRITAIN.

Insurance for Appendicitis.—The London *Daily Mail* states that the prevalence of appendicitis has suggested to one of the prominent firms at Lloyds that the public might desire to insure against it. For a premium of five shillings the insured, if he has to undergo an operation for appendicitis, will receive his direct expenses paid up to £200, and in the event of his death, under or from the operation, the total sum of £200 will be paid. It is stated that many people are taking advantage of the opportunity afforded to secure insurance.

CONTINENTAL EUROPE.

Serum for Pneumonia.—According to an exchange Professor Tizzoni, of the Bologna University, has announced to the Royal Academy of Sciences the discovery of a serum to combat pneumonia.

Increase of Nurses in Germany.—At the annual meeting of the Nurses' Branch of the German Red Cross Society it was stated that in the 18 years from 1882 to 1900, the number of male nurses had increased from 5,478 to 11,868, and that of female nurses from 17,661 to 38,937.

Prizes for Essay on Ichthyism.—The St. Petersburg Academy of Sciences have offered two prizes, one amounting to \$2,575, and the other to \$515, for the best papers elaborating protective measures against poisoning by fish toxins. The contest is to be international and the papers may be written in English, German, French, Latin, or Russian, but must be received by the Russian Minister of Agriculture not later than October 1, 1903.

Medical Men in Politics.—It is a noteworthy fact that medical men play a much more important political role in continental countries than in either England or the United States. Such an illustrious example as Virchow illustrates this. In the French republic there are fully 40 or 50 deputies who are physicians, and the Minister of the Interior, Dr. Combes, is a medical man. The president of the Swiss Confederation, Deucher, is also a physician and is about to begin his third term of office.—[*Journal American Medical Association.*]

Health of Berlin.—According to the Public Health Reports, during the week ended December 6 the deathrate of Berlin amounted to 15.5 per 1,000 of inhabitants, which was somewhat higher than the corresponding week of last year, when the rate was 15.2 per 1,000. A decided increase is noted in the rate for the following week ended December 13, when it was higher than it had been since the beginning of June, amounting to 17 per 1,000. This increase is ascribed to the more frequent occurrence during the week of acute intestinal and acute respiratory diseases; tuberculosis was responsible for 87 deaths as against 75 of the foregoing week. The almost general and considerable increase in the mortality led to an investigation, which proved that two-thirds of the large German towns had less favorable sanitary conditions than Berlin.

OBITUARIES.

Max Schede, at Bonn, December 31, aged 59. During the Franco-German war, 1870-71, he was one of the physicians who occupied a prominent place on the medical staff of the German army, and on the conclusion of that war he was appointed director of the surgical section of the Berlin Municipal Hospital in the Friedrichshain. Upon the establishment of the New Hamburg Hospital Dr. Schede was appointed organizer of the surgical section of that institution. He was instrumental in bringing about the use of mercuric chlorid as an antiseptic in the practice of surgery. He was for some years head of the surgical section of the General Hospital of Hamburg. Later he was appointed ordinary professor of surgery at the University of Bonn, and had the title of Privy Councillor of Medicine conferred upon him. He was a skilful operator, and was the inventor and perfecter of many surgical and orthopedic modes of treatment. His writings were

numerous, but consisted chiefly of contributions to the various prominent periodicals of medical science. He helped found *Das Centralblatt für Chirurgie* in 1874 and was its editor until 1880.

Henri Varnier, a leading obstetrician of France, died recently, aged 43. He contributed largely to medical literature. Besides numerous papers on continuous irrigation in puerperal fever, gangrenous cystitis in the course of retroflexion of the gravid uterus, vaginal urethrocele complicated by calculi, etc., he collaborated with Pinard and Champetier de Ribes in the production of an atlas of obstetric morbid anatomy, and with Farabocufin an Introduction to the Study of Midwifery. He was also the author of a treatise on the mechanism of delivery and the technic of obstetric operations, and of a fine work, illustrated with numerous plates, on everyday midwifery, which appeared in 1900. He was one of the editors of the *Annales de Gynécologie* and of the *Revue d'Obstétrique et de Pédiatrie*. He took a prominent part in the revival of symphysectomy in France.

J. M. B. Ward, of Chester, Pa., January 22. He was quarantine physician at the Marcus Hook Station and was killed by falling through the hatchway of the steamer "Exeuntia," which was on its way to Philadelphia and had stopped for the usual inspection. He was a member of the Delaware County Medical Society and of the J. M. Da Costa Medical Society of Philadelphia, and was surgeon of the Sixth Regiment, National Guard of Pennsylvania, ranking as lieutenant.

Photinos Panas, professor of ophthalmology in the University of Paris, died recently, aged 70. In 1873 he published a book on strabismus and ocular paralyses, and he was also the author of works on affections of the lacrimal apparatus, inflammatory diseases of the internal membranes of the eye, retinitis, and the pathologic anatomy of the eye. In 1879 he was elected a member of the Académie de Médecine, and was at one time its president.

Rush Winslow, of Appleton, Wis., January 3, aged 59. He was graduated from the Rush Medical College, Chicago, in 1860 and from the Bellevue Hospital Medical College, N. Y., in 1871. He was mayor of Appleton from 1887 to 1892. He was largely instrumental in establishing the St. Elizabeth's Hospital and was on the staff of house physicians.

Margaret Stanton, in Syracuse, N. Y., January 22, aged 58. She was graduated from the College of Medicine, Syracuse University, in 1876. She was formerly president of the Onondago County Medical Society and was the only woman who ever held this office. She was a member of the staff of St. Joseph's Hospital and was the first woman to receive appointment as a city physician.

Joseph Edwin Clark, of Brooklyn, N. Y., January 22, aged 80. He was graduated from the College of Physicians and Surgeons, New York, in 1849. He had been a visiting physician of St. Peter's Hospital since 1875. He was a member of the Kings County Medical Society and Physicians' Mutual Aid Association.

Edward T. Dickerman, of Chicago, died in Springfield, Ill., January 23, aged 35. He was graduated from the Northwestern University Medical School in 1890 and was an assistant surgeon for eighteen months in the General Hospital at Vienna.

Alexander Scott, of Forest, Ont., January 21, aged 62. He was graduated from the Detroit Medical College in 1871 and from the University of Toronto in 1872. He served for three years as medical health officer for Forest.

Charles Palmer, at Ipswich, Mass., January 11, aged 78. He was graduated from the Jefferson Medical College, Philadelphia, in 1848. He was a member of McClellan's surgical staff during the Civil war.

Burdette A. Terrett, in Natchitoches, La., January 23. He was graduated from the medical department of the Tulane University, New Orleans, in 1900. He was a founder of *American Medicine*.

Lucian H. Shepherd, of Oswego, N. Y., January 25, aged 37. He was graduated from the College of Medicine, Syracuse University, Syracuse, N. Y., in 1895.

Hawkins Stone, at Garrisonville, Va., January 21, aged 87. He was graduated from the medical department of the University of Virginia, Charlottesville, in 1837.

Arthur Beavis, at Mapimi, Durango, Mex. He was at one time pastor of the Unitarian Church and had practised medicine in Denver and Aspen, Colo.

Charles H. Haessler, at Pottsville, Pa., January 23, aged 73. He was graduated from the College of Physicians and Surgeons, New York, in 1853.

George T. Motter, of Taneytown, Md., January 17. He was graduated from the medical department of the University of Nashville, in 1864.

John Lord, in Biddeford, Me., January 21. He was graduated from the Medical School of Maine at Bowdoin College, Brunswick, Me., in 1866.

W. S. McKay, of Port Arthur, Ont., January 10. He was physician in charge of the hospital at Superior Lumber Company's camp.

J. G. DeVeaux, of Wheeling, W. Va., died near Panama Park, January 23.

Christopher Kiersted, of Jersey City, N. J., January 25, aged 81.

Henry W. Day, of Belleville, Ont., January 10, aged 72.

SOCIETY REPORTS

THE PLAGUE CONFERENCE.

Held at Washington, D. C., January 19, 1903.

[Specially reported for *American Medicine*.]

The Plague Conference, called by Surgeon-General Wyman, under the law of 1902, at the request of twenty State Boards of Health, met in the U. S. Marine-Hospital building, at Washington, on January 19. The following States were represented: MAINE, by Dr. C. D. Smith; VERMONT, by Dr. H. D. Holton; CONNECTICUT, by Dr. C. A. Lindsley; RHODE ISLAND, by Dr. G. T. Swarts; NEW YORK, by Dr. Daniel Lewis; NEW JERSEY, by Dr. Henry Mitchell; PENNSYLVANIA, by Dr. Benjamin Lee; DELAWARE, by Drs. A. Lowber and C. W. Cooper; MARYLAND, by Dr. J. S. Fulton; DISTRICT OF COLUMBIA, by Dr. W. C. Woodward; VIRGINIA, by Dr. Paulus Irving; NORTH CAROLINA, by Dr. R. H. Lewis; SOUTH CAROLINA, by Dr. T. C. Simmons; LOUISIANA, by Dr. Arthur Nolte; TENNESSEE, by Dr. J. A. Allbright; INDIANA, by Dr. J. N. Hurty; MINNESOTA, by Dr. H. M. Bracken; INDIAN TERRITORY, by Dr. M. B. Thompson; COLORADO, by Dr. H. R. Bull; IOWA, by Dr. J. L. Kennedy; CALIFORNIA, by Dr. Mathew Gardner.

A preliminary meeting was held at the New Willard on the evening of the eighteenth. Dr. Mathew Gardner, the delegate from California, introduced himself as having been temporarily appointed by Governor Pardee a member of the State Board of Health to represent the State at the Conference. Dr. Gardner described himself as surgeon-in-chief to the Southern Pacific Railroad, unfamiliar with and unconcerned in the plague controversy, unacquainted with and not responsible for the other members of the State Board of Health, but charged with the verbal assurances of the Governor of California and of the commercial bodies of San Francisco that the existence of plague is recognized, and that all interests will combine in its eradication.

General Wyman read the report of Surgeon Glennan upon the inspection of California towns outside of San Francisco. No evidences of plague were discovered in these inspections. Dr. Wyman reported upon his personal visit to San Francisco in December, including his inspection of Chinatown, and said that he had the personal assurance of Mayor Schmitz, of San Francisco, that all opposition to the view that plague exists is now at an end. Dr. Glennan reported 50% of dead rats and 1.1% of living rats examined infected with plague. Referring to the outbreak in Mexico, Dr. Wyman gave the view of the U. S. Consul at Vera Cruz, that plague might have reached Mazatlan in a ship from the Orient, and said that Chinamen from the Orient transshipped at San Francisco might have carried plague to Mexico.

Dr. Woodward, of District of Columbia, asked how much plague is now present in San Francisco, and whether it is true that vessels are clearing from the port of San Francisco with clean bills of health? In reply to these questions the Surgeon-General said that there is "not much" plague in San Francisco.

Dr. Fulton, of Maryland, discredited Surgeon Glennan's report on the ground that the inspections were imperfect in method and because the California inspector who accompanied Surgeon Glennan was a surgeon to the Southern Pacific, who had been identified continuously since May, 1900, with the combination to deny and to conceal plague. Dr. Fulton read the annual message of the Mayor of San Francisco delivered on January 12 and reiterating the Mayor's denial that plague exists in California. Attention was called to the reorganization of the City Board of Health of San Francisco on January 9 into accord with the Mayor's views and to the fact that Drs. Ruggles and Coffee of the California State Board of Health are Southern Pacific Railroad surgeons. Evidence was offered that the Mexican outbreak is traceable to San Francisco. Mazatlan has no trade with the Orient, but has constant coastwise trade with San Francisco. The steamer "Curacao," whose San Francisco wharf overhangs a Chinatown sewer, probably carried plague to Mazatlan.

Dr. Gardner, of California, defended the inspections of Surgeon Glennan, and asserted his own fitness to be appointed by Governor Gage as associate in the work of Dr. Glennan.

Dr. Lee, of Pennsylvania, inquired if it were possible that an American State tolerated a large foreign population so entirely exempt from all responsibility to the laws of the city and State as Dr. Gardner had shown the Mongolians to be.

Dr. Smith, of Maine, remarked upon the indefiniteness of the information from California and upon the absence of a plan to discover and to deal with cases of plague. Remarks on these points were also made by Drs. Lindsley, of Connecticut, and Mitchell, of New Jersey.

At the appointed meeting on the 19th, Surgeon-General Wyman was in the chair. Dr. Swarts, of Rhode Island, was elected secretary. The earlier proceedings were similar to those of the previous evening. Dr. Woodward, of District of Columbia, presented a chart of the reported plague mortality of California for the years 1900, 1901, and 1902, showing a steady and strong rise since its discovery in March, 1900. Dr. Nolte, of Louisiana, inquired if the steamer "Curacao" cleared from San Francisco for ports in Mexico with a clean bill of health. The following resolution was passed:

WHEREAS, This Conference believes without a shadow of division of opinion that plague exists and has existed in San Francisco, the representative from California, Dr. Gardner, is requested to present to this Conference, within as short a time as possible, definite signed assurances from the Governor of the State and the Mayor of San Francisco which will bind the City Board of Health and the State Board of Health, so far as the Governor and the Mayor can control these officers, to assume each their several and joint responsibilities in the suppression of plague, to pursue them to the utmost in harmony with each other and in full cooperation with the U. S. Public Health and Marine-Hospital Service.

With the information furnished by Surgeon-General Wyman and by Assistant Surgeon-General Joseph White in hand the Conference took a recess. The delegates immediately went into caucus to prepare resolutions. The following resolutions were adopted:

I.

The presence of plague in California is established beyond debate by:

1. The investigations of Kellogg, of the San Francisco Board of Health; Rykogel, for the California State Board of Health, and Kinnoyon for the United States Marine-Hospital Service.
2. By the later investigations of Pillsbury for the State Board of Health, and by those of J. White, M. White, Flint, Currie, Carmichael, Blue, and Glennan for the United States Marine-Hospital Service.
3. By the findings of Flexner, Barker, and Novy, composing a special committee acting under Federal authority.
4. By the findings of independent and disinterested investigators supplied with materials from autopsies done at San Francisco, and working in San Francisco, Chicago, Boston, New York, Washington, Baltimore, Philadelphia, and Ann Arbor.
5. By the occurrence of a case of human plague in Ann Arbor due to an accident in the manufacture of Haffkine's prophylactic fluid with a culture of plague bacillus obtained in California.
6. By the autopsy records of 90 cases of plague now in the possession of the United States Marine-Hospital Service and of the San Francisco Board of Health, and published in part in the *Occidental Medical Times*, of San Francisco.

II.

The presence of plague in any community where proper restrictions are not taken to prevent its spread is an injury to the best interests of that community. Such injury is in any case avoidable by the proper cooperation of all interests involved, commercial, professional, and governmental. The Conference regards the habitual publication of the actual facts relative to infectious disease and preventive procedures as the surest route to popular confidence, and as one of the means best adapted to minimize the injury liable to result from the presence of such diseases.

III.

The present danger to California, and to the United States lies primarily in the persistence, during nearly three years, of a definite nidus of plague infection in the part of San Francisco known as Chinatown; but the gravity of this circumstance is greatly increased by the gross neglect of official duty by the State Board of Health of California and the obstructive influence of the recent Governor of California; by the failure of the city government of San Francisco to support its City Board of Health, and by the obstacles opposed to the operations of the United States Public Health Service.

IV.

The Conference will consider the safety of the country sufficiently assured as soon as satisfied that a competent City Board of Health of San Francisco and a competent State Board of Health, in cooperation with the United States Public Health Service, will proceed under definite, harmonious and effective laws and ordinances; that they are provided with ample funds; and that they are jointly and severally in the free exercise of their lawful powers.

V.

The Conference expresses its conviction that the United States Public Health Service has deserved well of the State of California, and of the country, and that it would go far toward the restoration of popular confidence if the United States public health officials were admitted to the same relations with the State Board of Health as have been steadily maintained with the Board of Health of San Francisco.

VI.

The praise of this Conference and the gratitude of the city of San Francisco are due to Drs. John M. Williamson, Vincent R. Buckley, W. B. Lewitt, Rudolph W. Baum, Louis Bazet, and W. R. McCarthy of the City Board of Health of San Francisco. These men have the unreserved confidence of the executive health officers of the country.

A resolution was proposed informing the Hon. Elihu Root, Secretary of War, that in the opinion of the Conference the presence of plague is a consideration of weight against the maintenance of a U. S. Transport Station at San Francisco, and that the danger is largely augmented by the gross misconduct of the State Board of Health and the hostile attitude of Mayor Schmitz and the public press of San Francisco. This resolution was opposed by Drs. Lewis, of New York, and Simmons, of South Carolina. A substitute was offered by Dr. Woodward, of District of Columbia, restating the same opinion in general terms, but without any personal or official reference or allusion. This passed by a vote of 8 to 7. Its reconsideration was moved and carried.

At the afternoon session the first resolution of the morning session was reconsidered and rescinded on the representation of the delegate from California that it was physically impossible to obtain the assurances asked for in a short time.

The resolutions prepared by the delegates in caucus and printed above were all passed. The resolution concerning the U. S. Transport Station at San Francisco was again brought up, and after some discussion was indefinitely postponed. Dr. Bracken, of Minnesota, introduced a resolution requesting

the U. S. Public Health Service to institute a State border inspection of railroad trains. This resolution was lost.

A copy of the official report of Health Officer Fagan, of British Columbia, on the plague at San Francisco was read. This report noted the recent appearance of the tonsillar and pneumonic forms of plague and the infection of rats in San Francisco.

A letter from Dr. Eduardo Liceaga, president of the Superior Board of Health of the Republic of Mexico, was read, asserting the moral conviction of the Mexican authorities that the plague infection of Mexico had originated in San Francisco, and protesting against the dishonest conduct of the State Board of Health of California. The secretary was instructed to make a suitable reply to the communication of the Superior Board of Health of the Mexican Republic, enclosing the resolutions passed by the Conference.

The delegate from Maryland asked the Surgeon-General why vessels are allowed to leave the port of San Francisco with clean bills of health. The Surgeon-General replied that he did not know that it was true that vessels leaving San Francisco carry clean bills of health, but if it were true the responsibility lay with the consuls of foreign governments stationed at that port. Dr. Nolte, of Louisiana, inquired if Dr. Wyman's answer to Dr. Fulton's question was also a reply to his own (Dr. Nolte's) inquiry at the morning session. Dr. Wyman replied in the affirmative.

Dr. Gardner, of California, asked the Surgeon-General if the U. S. Public Health and Marine-Hospital Service would assume full control of the campaign against plague, California and San Francisco furnishing the necessary funds and subordinate officers. The Surgeon-General replied that upon request of the Governor of California and the Mayor of San Francisco, with the consent of the Secretary of the U. S. Treasury Department, he would accept this proposition.

The Conference requested the Surgeon-General to furnish a full report upon the plague in California at the next meeting of the National Conference in June.

(Copy telephoned)

Telegram to Dr. Gardner from Governor Pardee.

SACRAMENTO, CAL., January 22.

DR. M. GARDNER,

Ebbitt House, Washington, D. C.

Your dispatch of January 21st received and have consulted San Francisco authorities. State and city officials are in perfect agreement with the conclusions reached. There should be thorough cooperation between United States and State in dealing with situation. State officials stand ready to do everything the law will permit and which may be found necessary to secure cooperation. Legislature will undoubtedly make adequate appropriation bill for \$100,000. Already in both houses. State authorities will expend appropriation under advice and direction of Public Health and Marine-Hospital. State officers guarantee to do everything within power which the Federal representatives consider necessary and to do it in a way which Federal officials advise. Our laws do not permit State officials to turn over to Federal representative, but practically the same result will be reached by course above proposed. Officials of California realize thing to be done is to take most effective means to reassure everybody and they are willing and glad to be guided by Public Health and Marine-Hospital authorities in the adoption of means to secure this end.

GEORGE C. PARDEE.

(Copy telephoned)

Telegram from Mr. Herrin to Dr. Gardner, dated January 22.

Your telegram 21st. Governor Pardee and Mayor Schmitz will cooperate in every reasonable way permitted by law, but law does not permit money of State or city and county to be expended except by its own officials, and they must therefore retain control of work, which can be done, however, in accordance with instructions of the Federal authorities.

WILLIAM F. HERRIN.

Hospital for Prisoners.—The *Times-Democrat* announces that a hospital is to be erected for State prisoners in the Florida penitentiary. This institution with nearly 1,000 prisoners has heretofore been without any place where sick convicts might be cared for. Plans have just been completed for the erection of a hospital for convicts at Ocala at a cost of \$8,000.

Does "Ill" Mean "Sick"?—There are signs of an existing propensity to constrain the partial withdrawal of the word "sick" from the American language in favor of the word "ill." Newspapers in their head-lines and elsewhere speak nowadays of "a very ill man." It used to be "a very sick man." Why the change? "An ill wind" is a satisfactory use of language, but "an ill man" grates on the ear, and sounds like an attempt to improve on a usage that had no perceptible defect. They say this new whim is a euphemism imported from England. A correspondent of a Boston paper discusses and disapproves it, protesting not only against the use of the unwarrantable adverb "illy," but against "the growing use of the word 'ill' in place of the homely word 'sick.'" This Boston protestant, quoting Webster, finds that Shakespeare with hardly an exception uses "ill" to mean mental, moral, or impersonal disorders. "Ill at ease," "ill-advised," "ill-bred," "ill fares," are all fit and familiar uses of a good and industrious little word that has plenty of legitimate work of its own to do, without being constrained to figure as a feeble substitute for "sick." [*Harper's Weekly.*]

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

SUBCUTANEOUS INJECTION OF SOLIDIFYING OILS TO CORRECT A SADDLE-BACK NOSE.

BY

JOSEPH A. M. SMURL, M.D.,
of Philadelphia.

Considerable has been written in recent medical literature pertaining to the introduction under the skin of solidifying oils to correct anatomic irregularities, but thus far, in my personal researches, I have failed to find any illustrative evidence of the work accomplished. With due respect to Corning, Gersuny, and von Angerer, and the methods employed by these celebrated men, I experimented with injections of paraffin over four years ago, and after many discouraging failures, due to the imperfection of the syringe employed, for I tried to make the ordinary hypodermic syringe do the work, I began to perfect a syringe which meets the requirements admirably. This syringe is modeled after Dr. Janet's, made entirely of metal, about three inches long, and has a capacity of about three drams, with a caliber equal to that of the ordinary syringe. My needles are made about the size of the antitoxin syringe needle, but have an elongated point, which facilitates the distributing power. In



many cases, a glass syringe, when subjected to sufficient heat to melt the paraffin, breaks, hampering the operator to no small degree. The metal syringe overcomes this annoyance and works beautifully.

Among the many patients that I have operated on, in only one case was there the slightest evidence of a complication, then it was only a slight ecchymosis, which disappeared in 48 hours without any special attention. Great care must be exercised so as not to introduce the needle into a vein, as serious results might occur. I have discarded employing a local anesthetic before introducing the injection, an objectionable feature being the distention due to the anesthetic, this disguising in a measure the field of operation. I now find that the hot solution modifies the pain to a more or less extent. Considerable attention is devoted to the preparing of the paraffin; it is mixed with red vaselin in the proportion of one of vaselin to three of paraffin; it is then subjected to an intense heat. After boiling the solution for at least one hour, I allow it to cool, and then place it in an antiseptic container, the ordinary jar with a screw top answering the purpose very well. The paraffin can be shaved into fine bits—it saves time in introducing the preparation into the syringe. The surface to be operated on must be antiseptically prepared. The syringe, which is filled with the wax, is heated slowly over a spirit lamp, and when liquefied is introduced under the skin very cautiously, and with the left

hand molded into the desired position. The accompanying illustrations represent the most aggravated type of saddle-back nose. In this case, one operation was not sufficient to overcome the deformity. It required three injections at an intermission of about three weeks' duration, for I found that the skin would not stretch sufficiently at the first sitting to allow me to complete the work. The patient was instructed to massage the nose gently every day, and consequently when she presented herself for a subsequent operation the skin was quite relaxed. Fig. 1 shows that the nose, before operating, was not only depressed, but the end was pronouncedly tilted. The operation also obliterated this deformity, giving to the patient a good profile.

There is a diversity of opinion as to whether the paraffin undergoes a gradual chemic change leaving a mass of new tissue, or whether it becomes embedded in an accretion of fibrous tissue.

My experience in 10 cases in which paraffin was introduced into the cellular tissue of the arm, purely for experimental purposes, was that it became thoroughly encapsulated by fibrous tissue, with no chemic change taking place whatever.

THE CONTROL OF MOUTH-BREATHING AT NIGHT.

BY

STEWART W. TUFTS, M.D.,
of Pittsburg, Pa.

Assistant Surgeon to Passavant Hospital.

Having had much difficulty in getting patients to use the ordinary methods for obtaining the control of mouth-breathing at night, I was led to seek a simpler plan which would be more popular. I believe that the most simple method which can be devised is to stick a piece of silk isinglass courtplaster, about $\frac{3}{4}$ by $1\frac{1}{2}$ inches, across the closed lips. For a person with a moustache or beard it will adhere strongly enough to the edges of the lips. The patient will suit this idea to his case. The plan is a little alarming to some, but when assured that it can be very quickly removed and that it does not irritate the lips, they accept it enthusiastically, and although there is much joking about it, I find this method as popular as headgears were objectionable. During the last five years I have made mouth-breathing a subject of careful observation, and I find that at least 90% of my patients with acute and chronic diseases of the respiratory tract are mouth-breathers at night. This proportion may seem large, but it is a fact of common observation that most persons who snore deny it, and so it requires careful consideration to arrive at the truth. Some of my patients will strongly insist that they breath properly until they are watched while asleep. In some of these I have had the best results; 90% of the patients observed had sufficient room in the nose to breathe correctly during the day, but in some of them, of course, nose and throat treatment was required to complete the cure of mouth-breathing at night. The necessity for the correction of this habit is illustrated in the treatment of hypertrophic rhinitis, in which in attempting to increase the nasal caliber after a certain point the function of the nose is interfered with and the patient still breathes wrongly at night. At this point the correction of the habit by plaster will improve vasomotor control of the circulation of the nose and complete the result. The first requirement for a normal nose is that it be used constantly, the blood supply being such that if the nose is not used, the mucous membrane congests and gradually thickens from hypernutrition. As an experiment I used the courtplaster so that I would be able to answer any objections to it, and discovering myself a victim of the habit, I continued its use two weeks. At the end of this time I ceased to clear my throat, my voice improved in power and quality, and I could sing one note higher than ever before.

After carefully investigating the breathing of 19 entire families, comprising a total of 84 persons, I found that 70% of them breathed through the mouth at night. This proportion also harmonizes with my general observations. The necessity for the correction of the habit is made very clear by the facts that

air inspired through the nose receives from 20° to 40° of heat, and becomes at least two-thirds saturated with moisture, and that the nose is a most effective germ filter. The mouth has none of these functions, and when it is used in breathing the lungs must receive a large number of germs and suffer damage from the unmodified air. The importance of this subject is further emphasized by the fact that according to the census of 1900, 40% of the total number of deaths between the ages of 20 and 50 years were due to diseases of the respiratory tract. The increase of six years to the average of human life in the last 20 years has resulted mainly from improvements aimed at purification of the atmosphere, but the air of our houses and cities is still far from ideal. Now, in consideration of the immense mortality from lung diseases, how great is the necessity for using such a good air filter as the nose. Yet 70% of people fail to use it at night, and we as physicians have overlooked its importance in our treatment of the sick. From these facts it appears that the correction of mouth-breathing is one of the most important measures of preventive medicine, and it seems to me also one of the most efficient measures of physiologic therapeutics. My general results in the treatment of respiratory diseases are better now than before the use of my method, and my patients who used to have a laryngitis or bronchitis follow acute rhinitis are now enabled to avoid such sequels; I have more control of asthma and hay-fever. One severe asthmatic in spite of the fact that she refused to have her nose, which was in very bad condition, treated, was relieved through controlling her breathing; in another case of years' duration cure was effected by the same means; the nose, pharynx, and larynx improve more rapidly, and the voice gains in quality and strength. In tuberculosis I believe that the avoidance of mouth-breathing lessens the tendency to a mixed infection, bronchitis, colds and cough, and increases the oxygenating power of the lungs. The application of this idea is of large value to singers and speakers, who should be observed while asleep to make sure of their proper breathing. Many of my patients when they take a cold use the plaster to make sure of correct breathing, because they are enabled to avoid laryngitis or bronchitis, and have found that their colds are of shorter duration. If the nose is too much occluded at bedtime the use of sprays, cold sponging of the face and shoulders, or the use of a few gymnastic exercises which equalize the circulation are of value. In investigating mouth-breathers do not give credence to a denial, but direct the patient to observe carefully the condition of the nose, throat, and mouth upon awakening, or as a final test let him be observed while asleep. The difficulty in getting the truth is the main reason why this subject is so often overlooked. Many physicians give the subject no attention whatever, unless the case is one of enlarged tonsils or adenoids. To obtain a clear realization of the bad results of this habit let the reader keep his nostrils plugged for a day, and no further demonstration will be required. This group of facts should show the great absurdity of treating patients with pulmonary tuberculosis, pneumonia, diphtheria, bronchitis, asthma, influenza, and laryngitis, and allowing the inspiration of a germ-laden, cold, dry atmosphere through the mouth, when the nose is ready, after possibly some slight adjustments, to filter, warm, and moisten the air.

ACCESSORY THYROID TUMORS SITUATED AT THE BASE OF THE TONGUE.

BY

J. E. SUMMERS, JR., M.D.,
of Omaha, Neb.

To the Editor of *American Medicine*:—In a paper bearing the above title, Dr. Randolph Winslow, of Baltimore (*American Medicine*, December 13, 1902), reports an interesting case in which he operated successfully upon the patient. In discussing the literature of the subject the doctor evidently unintentionally overlooked the fact that it is to an American surgeon, Bernays, of St. Louis, that we owe our accurate knowledge of the subject. In the October, 1888, number of the *St. Louis Medical*

and *Surgical Journal* Bernays reported a case. He was the first man to operate upon and discuss in an intelligent manner struma at the base of the tongue. Bernays' reference to the historic work of His, bearing upon the thyroglossal tract and its relations to the growth of struma, was the first bright ray to clear up the dark subject. R. Wolf, of Hamburg, did not report his case until April, 1889, and it was published some months later. The recognition of the nature of the cases referred to by Butlin, seen prior to Bernays' report, followed naturally; and in consequence today many cases are matters of record. In a paper read by me at Minneapolis, Minn., December, 1900, before the Western Surgical and Gynecological Association, in which I tried to classify a tumor removed from the base of the tongue as an endothelioma, my microscopic findings seeming to differentiate this tumor from a struma; it developed in the discussion that several members had operated upon but failed to report their cases of struma of the base of the tongue. So far as I know the literature of the subject no case of this character has ever been reported in the male, but Dr. C. H. Mayo, of Rochester, Minn., in the discussion of my paper reported one occurring in a boy of 15. It seems to me that Bernays' paper never received the recognition it deserved.

A CASE OF INTESTINAL OBSTRUCTION DUE TO IMPACTION WITH LUMBRICIDS; OPERATION; DEATH.

BY

W. O. BULLOCK, JR., M.D.,
of Lexington, Ky.

The following case of intestinal obstruction is interesting on account of the unusual nature and severity of its exciting cause:

Wm. B., white, aged 6, was sent to the Good Samaritan Hospital, July 16, 1902, by Dr. Baucome, of Spears, Ky., with a diagnosis of intestinal obstruction, due to worms. The child was taken sick a week before, had passed 10 or 12 worms, and the parents consequently administered an anthelmintic. As this did not relieve the symptoms, the little patient was plied with all the domestic remedies at hand, including purgatives and medicines to settle the stomach. After four or five days of unsuccessful effort, the parents sent for a physician, who, after endeavoring to relieve the condition by high enemas, advised that surgical relief be instituted immediately. This, however, was postponed till the following evening when the child was brought to the hospital. At the time of admission the patient's condition was one of extreme emaciation. The abdomen was flat and a sausage-shaped mass could easily be made out in the right iliac region. Temperature 98°, pulse 132-140, and weak. This, coupled with a history of persistent vomiting and absolute constipation, led me to a diagnosis of intestinal obstruction, due probably to intussusception. The patient was placed on the operating table at 7.25 p.m. under ether. Upon making a vertical incision in the outer border of the right rectus, the deep epigastric vessels were encountered and these were tied at both ends of the wound. A finger was introduced and immediately met the distended gut beneath the incision. It proved to be the colic end of the ileum, distended to the size of the ascending colon for a distance of about eight inches, and packed solidly with lumbricoid worms; for eight or ten inches more the bowel was filled with worms, but not to the same extent, the mass tapering to a point a few inches higher up. The walls of the bowel were so attenuated that the individual worms could be distinguished readily. The bowel was bluish and the serosa, which was beginning to lose its glistening appearance, was torn several times in consequence of efforts to work the mass of worms to and through a longitudinal slit made near the ileocecal junction. After removing the mass the color of the bowel improved, and the opening was closed by three rows of Lembert sutures superimposed. The mesentery at the site of the obstruction was greatly thickened and edematous. The abdominal incision was closed by through-and-through silk worm-gut sutures. The duration of the operation was 45 minutes. The patient left the table in bad condition, pulse between 150-160, and was given strychnia and normal saline solution hypodermically. He rallied somewhat during the night, but sank again and died at 8.30 a.m., July 17, of shock and exhaustion, 12 hours after operation.

The number of worms removed at operation was 92, and 2 more were passed by the bowel before the child died. The worms were not coiled or knotted, but lay for the most part parallel with each other except at the lower end, where they were somewhat tangled.

ORIGINAL ARTICLES

A NOTE ON THE ANATOMY OF THE PERIRENAL FATTY TISSUE.

BY

W. W. KEEN, M.D.,
of Philadelphia.

Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia.

In the many operations which I have done upon the kidney, I have invariably recognized an anatomic disposition of the perirenal fat which I do not find described in any of the textbooks on anatomy or surgery. The recognition of it facilitates very greatly the finding of the kidney and hence I call attention to it.

There are two distinct layers of fatty tissue surrounding the kidney: First, that which should be called the transversalis layer of fat and, secondly, the proper perinephric fat or fatty envelope surrounding the kidney itself. In operating on the kidney, so soon as the fat bulges through the incision, if it is carefully cut or torn through, gradually deepening the incision or tear, a distinct interval between these two layers will be found, which is recognized by a layer of connective tissue, similar to that which is found, for example, between the internal oblique and transversalis muscles. The second layer of fat then presents itself. If this is incised or torn through and drawn into the wound, the opening thus made in it becomes a sort of infundibulum or funnel-shaped opening, at the bottom of which the kidney is invariably found. Occasionally the first layer of fat does not extend so far posteriorly as the second layer, but commonly, so far as the operating surgeon is concerned, they lie superposed.

At my request, Dr. A. B. Craig, one of my assistants, has made two dissections of the parts and describes them as follows:

I find the two fatty layers of which you speak. The external layer is less thick than the internal and is continuous with the transversalis fascia. This fascia in passing posteriorly becomes thin, cellular, and reticular and the fat is embedded in its meshes. After passing through this layer there is a distinct interval before we come upon the thick fatty capsule of the kidney proper, which latter completely envelopes the kidney and is more or less adherent to the true capsule. The fatty capsule has a more or less distinct fibrous covering, which is continuous below with the reticular tissue which passes down with the ureter and surrounds the bladder, rectum, etc., while it is continuous above with the attenuated reticular structure which intervenes between the peritoneum and the caudad surface of the diaphragm, and is continuous across from one kidney to the other.

It appears to me that this structure is morphologically continuous with that fatty-reticular layer between the transversalis fascia and the peritoneum, often fairly marked in the region of the inguinal rings, and denominated 'peritoneal fat,' and which, therefore, in the region of the kidney would be postperitoneal.

I have consulted over a score of anatomies, general surgeries, and special surgeries on the kidney. None of these alludes to the two fatty layers with the exception of DaCosta's Modern Surgery, and this allusion is due to information given to Prof. DaCosta by myself and which he also confirmed some years ago by some careful dissections made at my suggestion. He, however, simply alludes to the existence of these two layers, but does not describe them.

Work of the State Board of Health in Massachusetts.—Since the work of investigating reported adulteration of foods, drugs, examination of water supplies, and sewage systems was given to the State Board of Health in 1883, 138,310 samples have been examined and 1,647 complaints entered. The cost of collection, analyses, etc., has been reduced from \$2.26 per sample in 1883 to \$1.12 in 1902. The total expense for the year just ended was \$11,700.23 and the fees paid amounted to \$2,617.98. In its work with reference to water supplies, drainage, sewage, etc., the board has expended \$33,999.44 out of an appropriation of \$34,000. The work will continue.

TWELVE CASES OF MALIGNANT DISEASE TREATED BY THE RÖNTGEN RAYS.

BY

HENRY PERKINS MOSELEY, M.D.,
of New York City.

Radiographer to the Presbyterian Hospital, New York City.

The following cases occurred in patients treated at the Presbyterian Hospital during the last year. Several patients are also either still under treatment or sufficient time has not elapsed since their discharge to warrant drawing any conclusions from them. In all this work the attending physicians and surgeons of the hospital have shown great kindness and courtesy and my thanks are due them for their uniform sympathy and for their many helpful suggestions in regard to the therapeutic use of the Röntgen rays.

The apparatus used consists of a ten-plate Waite and Bartlett static machine and a 50 cm. coil made by the Heinze Electric Co., of Boston, used with the Heinze liquid interrupter. The hospital supply of 110 volts direct current is used to run the motor for the static machine and is also used directly into the interrupter for the coil, for which no rheostat nor transformer is required. The areas treated have been usually at a distance of 15 to 30 cm. measured to the target of the tube. The surrounding tissues have been protected by lead foil. The time of exposure has been 5 to 10 minutes on alternate days. Occasionally more or less frequent exposures have been given, according to the case. When the coil was used a current of 1½ to 2 amperes was passed in the primary. Tubes of various makers have been tried and the most satisfactory results have been obtained with those tubes which give out a large number of rays which are not highly penetrating. It seems that the tubes of high vacuum cause dermatitis more readily than those of a low vacuum, but the curative effects do not seem to be so good with them in spite of the fact of their being able to influence so actively the healthy skin.

I.—EPITHELIOMA.

CASE I.—Epithelioma of the lip. The patient, Michael C., a laborer, aged 50, was born in Ireland.

Family History.—There is no cancer and no tuberculosis in the family. His father died in a famine in Ireland and his mother died of fever.

Previous History.—When 26 he had pleurisy for 6 months and has had two attacks since, the last 15 years ago. He denies all venereal disease. He was formerly a hard drinker, but now uses only one pint of beer a day. He has smoked constantly a short clay pipe, which stuck to his lip but which, he says, did not get hot.

Present Illness.—Six years ago he "pulled skin off his lip" by its sticking to the pipe. It bled quite a little. He kept smoking and the area gradually increased in size. It has never healed and has bled considerably. Various ointments and applications have been used. He tried smoking on the other side of the mouth, but the area did not heal. Scabs would form and fall off about twice a week. He noticed no swelling in the neck. He absolutely refused any cutting operation, so that it was impossible to get a section for the pathologist. Dr. George T. Jackson, of this city, said, however, that there was no doubt of the diagnosis.

Physical Examination.—March 7, 1902: To the left of the middle of the lower lip there is an ulcer about ½ inch by ¼ inch. It is very slightly indurated around the edges; there are slight scabs on its surface; and it bleeds easily. There is no enlargement of the cervical glands.

Treatment was begun March 7, 1902. To excite the tubes the coil usually was used, occasionally the static machine. The tubes used were of very low vacuum placed at a distance of 30 cm. for the first few treatments, but soon this distance was diminished to 15 cm. The time of exposure was 5 to 10 minutes. In all, 19 treatments were given, about 3 a week, but the patient was of necessity irregular in presenting himself owing to his occupation. On May 24, 1902, the last treatment was given, the ulcer being healed. August 31 a letter from the patient said there had been no return. October 7 the patient was seen and there had been no return. It is perfectly healed, only a very slight thickening being left. There is no glandular involvement. The patient still smokes constantly, but on the other side of his mouth.

The patient reacted most satisfactorily to treatment. Seven months have elapsed since the last treatment and

there is no evidence of return. No burning was produced. The growth was superficial and there was no glandular involvement, but it had proved resistant to other methods of treatment.

CASE II.—Epithelioma of the lip. Charles McH., Irish, aged 80.

Family History.—His father had a cancer of the lip removed by operation without recurrence and died years later of senility.

Personal History.—For 65 years the patient has smoked a short-stemmed pipe. Since the middle of March, 1902, he has noticed a slight induration at the middle of the lower lip which has never healed. It scabs over. The scabs fall off and it bleeds, being a source of great annoyance.

Physical Examination.—August 28, 1902: There is a small indurated area at the middle of the lower lip about $\frac{1}{2}$ inch in diameter covered with a scab, which, being removed, causes bleeding. There is no enlargement of the cervical glands. The clinical appearance is typical of epithelioma.

Dr. A. J. McCosh advised against operation on account of the patient's age and infirmity. Treatment was begun August 28, 1902. The coil was used to excite tubes of very low vacuum placed 8 to 15 cm. from the area treated. The treatments were given irregularly at first, but between August 28 and September 30, 17 exposures of 10 minutes each were made. As no effect seemed to be produced the treatments were then given more frequently, 13 exposures being made between October 1 and October 18, at the end of which time the area had markedly increased in size, being *twice as large* as when first seen. The patient was advised to discontinue treatment temporarily on October 27. On November 17, when next seen, there was a marked improvement, the area having diminished in size to its original dimensions. Four treatments were given on alternate days and the patient disappeared, being confined to the house with a severe bronchitis (?). On December 17 he again presented himself, showing to my astonishment a lip absolutely healed, with healthy mucous membrane in place of the ulcerating area and a disappearance of all induration. Up to this time the number of treatments had been 36. He is still having weekly exposures.

The improvement and final healing after rest and cessation of the treatment was *remarkable*. There is in certain cases a cumulative effect of the rays, their influence continuing after the treatment is stopped.

CASE III.—Epithelioma of face. Mrs. N., a widow of 80, was born in Ireland.

History.—Four years ago she noticed on the left side of her face, opposite the ala of the nose, a slight small lump. This was cauterized and treated with ointments but ulcerated and did not disappear. For the past three years the eyelid has been pulled down by the ulcerated area. Lumps have gradually grown and ulcers formed.

Physical Examination.—May 1, 1902: There is a large superficial ulcer 1 inch in diameter below and involving the left lower eyelid. It discharges pus and blood and causes much pain and annoyance day and night. There is marked ectropion of the left lower lid.

Treatment was begun May 1, 1902. The static machine or coil was used to excite a very low vacuum tube. At first, treatment was on alternate days for five minutes at a 20 cm. distance, but the patient's skin was very sensitive, becoming quite red so that two treatments a week has been as frequent as the skin would warrant, and with slight rests the treatment has been continued at these intervals. On September 20 there was only one small ulcer about $\frac{1}{4}$ inch in diameter left. There was absolute freedom from pain and the new skin is healthy. November 11: Condition is the same as on September 20; the scabs over ulcers are very small. January 1, 1903: In spite of persistent treatment, it has been impossible to cause healing in the small areas (as noted below); the freedom from pain continues; the new skin is healthy.

The peculiarities of this case were the marked sensitiveness of the skin, and the almost immediate relief of the pain and rapid diminution in the discharge. The patient is still under treatment and now presents an area corresponding to the original ulcer filled in with healthy skin. In the midst of this area is a spot about the size of one-half the diameter of a lead pencil which seems to be filling in very slowly from the edges, and a small similar area on the right cheek near the nose. The patient is extremely grateful for the relief afforded by the absence of pain and discharge.

II.—CARCINOMA.

CASE IV.—Carcinoma of jaw. Service of Dr. A. J. McCosh. Mr. C., aged 62, was born in the United States and has been a missionary.

History.—About six months ago the patient had a small ulcer at the inner side of the left cheek, caused by the irritation of a sharp tooth. This persisted and increased.

Physical Examination.—April 28, 1902: At the angle of the left lower jaw there is a swelling about the size of a hen's egg. It is red, adherent to the skin and underlying bone with a discharging sinus at its summit, from which comes a thin yellow exudate. Just above the angle of the mouth is a reddened nodule which is broken down and from which exudes a thick yellow discharge. On the inner side of the left cheek are a few reddened round hard nodules. On April 29, 1902, Dr. McCosh tied the left external carotid artery to cut off in part the blood supply to the tumor. The wound healed by primary union. On May 3, 1902, the Röntgen ray treatment was begun. The static machine or the coil was used to excite a low vacuum tube placed 20 cm. from the patient. The exposures were 5 to 10 minutes. Eight treatments were given on alternate days without any apparent effect. By May 16 the swelling in the left jaw had increased perceptibly in size in spite of the exposure to Röntgen ray. The patient left the hospital and died some time during the summer.

The case was most unsatisfactory for Röntgen ray treatment, as the growth had extended so far and was so badly ulcerating. The patient was failing perceptibly from day to day, and the treatment did not seem to have any effect on the local condition whatever.

CASE V.—Carcinoma of breast. The patient was Mrs. R., a widow of 49.

History.—This patient was referred by Dr. A. J. McCosh as having an inoperable tumor. Two years ago she first noticed a swelling in her left breast. She had no operation but had taken a course of treatment by subcutaneous injection in Boston.

Physical examination showed a large nodular heavy bluish mass in the lower part of the left breast including the axilla. There was no edema of the arm. The patient's general condition was fair.

Treatment was begun July 17, 1902. High and medium vacuum tubes were used, excited by the coil or static machine. Exposure was for 5 or 10 minutes at a distance of 25 cm. Seven treatments were given and the patient went to the country for two weeks. On her return July 28, 1902, she looked bad, the mass had grown and was ulcerating. The ulceration progressed rapidly and she soon became too weak to have further treatments. She gradually emaciated and died October 2, 1902.

This was a most discouraging case from the outset. She had neglected the disease so long that it was too late for any treatment to have results. The rapidity of the growth and its malignant nature were evident from the very first and it is another case in which the treatment did not seem to have any effect whatever.

CASE VI.—Recurrent carcinoma of breast. Service of Dr. Ellsworth Eliot, Jr. Louisa G., aged 52, was born in Danish West Indies, is a widow and colored.

Previous History.—In November, 1901, the patient was operated on by Dr. Eliot for a scirrhous carcinoma of the left breast of one year's duration. At this time the breast and pectoral muscles were removed and the axilla cleaned out.

Present Illness.—Ever since the operation the patient has suffered almost constant pain in the wound and shooting down the arm. About March, 1902, she noticed a little lump starting to grow in the region of the scar. This increased in size and has broken down, leaving an ulcer.

Physical Examination.—April 15, 1902: There were numerous nodules along the line of the scar, at no point being adherent to the chest wall but evidently in the skin. On April 18, 1902, Dr. C. A. McWilliams excised the scar and surrounding tissue leaving a denuded area about eight inches in diameter. This was partly closed by freeing the skin and drawing it together, the remaining areas being filled in by skin grafts done at the time of operation. In about half the area the grafts were successful. On June 25, 1902, the note is: "Wound slowly granulating over. In the granulating area are a number of small elevated patches about the size of a pea, with eroded surfaces. Below the wound in the skin is an area about two inches by three inches consisting of similar nodules." (Attention is called to this area as reference is made to it later.) July 9: On discharge from the hospital wound is in the condition of last note.

Treatment was begun May 28, 1902, six weeks after the operation, and was kept up regularly until September 22, 1902. The static machine or coil was used to excite very low vacuum tubes placed 20 cm. from the patient. The exposures were ten minutes, on alternate days. There was no burning produced. The patient's color prevented any change being noticed visibly, but she complained of no irritability and no sense of heat except

once. By June 9, 1902, she had improved—the discharge was less over the granulating area, which was smaller. On June 30 there was slight recurrence at the lower part of the wound. This is the same as noted in the hospital notes of June 25. July 28, the granulating area was nearly healed. Place of recurrence was much better, it was not soft; there was no discharge, no puffiness. All these conditions existed until July 11. On August 11 she complained of a slight burning sensation over the wound. Treatment was continued, however, and no bad effects were noticed. She did not complain of the burning again, and three days later said it was absent. August 27: She complained of pain, and yesterday a mass of glands was noticed above left clavicle. August 29: Nodules were noticed in the right breast. September 20: Area skin grafted has broken out at outer side and also at inner side. October 13: She was seen in the Presbyterian Hospital dispensary; she coughs a good deal and has much dyspnea. This patient was last heard of as being too weak to come to the dispensary for treatment, and it is presumed she has succumbed to the metastases.

At first this case seemed very promising. The patient presented herself regularly, and at one time the treatment seemed to be doing her good, but the recurrence later appeared in the areas of skin grafted, and metastases appeared elsewhere. The area, however, below the scar did not seem to take part in the recurrence. This condition has been noticed that vigorous treatment on one portion of the body prevents, or apparently retards a recurrence here, but has no effect on metastasis elsewhere. The fact that the patient complained of no irritability of the skin, and that there was no evidence of dermatitis raises an interesting question whether the pigment in a negro's skin might not act as a preventive to a Röntgen ray dermatitis.

CASE VII.—Recurrent carcinoma of breast. Mrs. C., an English widow of 65. This patient was referred by Dr. A. J. McCosh.

History.—In February, 1894, she had an amputation of the left breast at a private hospital in this city. In 1900, the first time since the operation that anything abnormal was noticed, there was seen a slight discharge from the axillary scar. In June, 1901, small spots were noticed on the scar, and the arm began to swell. The scar, shoulder and arm gradually became very painful.

Physical Examination.—April 10, 1902: The woman is large and well nourished, and weighs 160 pounds. The left shoulder, arm and forearm are greatly swollen, somewhat edematous and tender. Over the scar of the removed breast, and also scattered over the front of the left chest and over the left scapular region, posteriorly, are many reddened hard, infiltrated spots, $\frac{1}{2}$ inch to 1 inch in diameter.

Treatment was begun on the same day. Both the static machine and coil were used to excite medium and high tubes placed at a 25 cm. distance from the area treated, the exposure being 5 to 10 minutes on alternate days. Both front and back were treated, usually alternately, but depending somewhat on the patient's desire for relief of pain. April 21, 1902, there was no change in swelling, but there was less pain. June 23: Swelling has diminished; recurrent spots are smaller, and much less painful; swelling at upper part of arm is less. Beginning June 23, the patient had daily treatment until July 4, skipping two days. The skin became quite red, and treatment was omitted until July 11, when it was found that the redness had all gone from the front. The back, however, is still red, otherwise condition is the same as on June 23. The patient wished to go to London to visit her family, and was instructed to keep up the Röntgen ray treatment there, but failed to do so.

My note of October 27, 1902, on her return, is for about 10 days after the last treatment, July 11, 1902; patient says she was badly burned on the front of the chest and over the back. Large blisters formed, but the inflammation was controlled by wet dressings, and it was three weeks before the skin was normal. At present the swelling over the chest and shoulder is markedly diminished. Nearly half of the elevated tender spots of recurrence have disappeared entirely or have left merely a small lightly pigmented area. The edema in the arm and forearm remains about the same, and is very troublesome. The pain has returned since the treatment has been stopped. Her general health is fairly good, but she does not look quite so well as in the spring before she went abroad.

The case presents interesting features. Great relief has been afforded to what was regarded as an inoperable hopeless case by her physicians, the patient herself, and her friends. The relief of pain has been most striking from the very first, and the diminution of the swelling after the vigorous treatment she received just before she went abroad is marked.

The improvement in this case, as in many, seems to have continued some time after the treatment was

stopped. The fact that it was about four or five days after the last treatment that the burn was first noticed is in accord with the observations of others, and impresses the necessity of the greatest care in the prevention of any burn, and the imperative necessity of absolutely stopping all treatment on the appearance of the slightest erythematous blush. In this particular case large areas were exposed to the treatment because of the wide distribution of the disease. During the treatment in the spring the patient's general condition improved considerably. Treatment three times a week was resumed on her return from England, with an immediate marked relief of the pain. This relief lasted about 36 hours from the time of the treatment, but after some weeks her general condition became so poor that further treatment by this method was deemed inadvisable.

CASE VIII.—Carcinoma of inguinal glands. Service of Dr. A. J. McCosh and Dr. F. Tilden Brown. Mrs. S., a widow of 68.

History.—The patient has had five children, all normal labors. A small sore was removed from the right labium 2½ years ago at the Woman's Hospital. It was said to be an epithelioma.

Present Illness.—Nine months ago a small lump was noticed in the right groin, gradually increasing in size, and recently a small area discharging pus appeared at the outer part of the swelling.

Physical Examination.—June 23, 1902: In the right groin was seen a hard mass half the size of an egg. It was slightly tender, overlying skin reddened, and a small discharging sinus at the outer portion. Skin was adherent, swelling was not movable on the deeper parts. No other enlargement of the superficial glands was made out.

Treatment was begun on June 25, 1902, and continued on alternate days and daily until September 3, 1902. High, low and medium tubes were used, both the static machine and coil being employed to excite them. The distance of the tube from the patient was about 30 cm., the time 5 to 10 minutes.

Slight erythema was produced, but no curative effect whatever could be noticed, not even a diminution in the amount of discharge, and the patient becoming markedly weaker was discharged from the hospital to return to her home in the country.

CASE IX.—Carcinoma of inguinal glands. Service of Dr. A. J. McCosh. The patient was Mr. M., a Canadian, aged 43.

History.—Family and personal history are negative for venereal disease or neoplasm. January, 1901, a circumcision was performed in Ottawa for a small lump on prepuce, the pathologic report being epithelioma. At this time the right inguinal glands were dissected out. Recurrence took place and a second operation was done in June, 1901, at Ottawa. The swelling in right inguinal region again appeared, and a third operation was performed in Paris in the fall of 1901. In the middle of January, 1902, the patient noticed a return of the swelling in the right groin, and on admission, on February 8, 1902, in the old scar was an enlarged hard mass of glands. Those in the left inguinal region were palpable, but not enlarged. Dr. McCosh removed the mass, which involved the ramus of the pubis and Poupart's ligament, and was adherent to the iliac and femoral veins, but "it was impossible to go wide enough of the growth to be sure of removing it entire." The wound was granulating well when patient was discharged in March, 1902. Dr. J. S. Thacher's pathologic report was carcinoma. On March 24, 1902, Dr. S. S. Graber, the patient's family physician, referred him to me for treatment. The patient had noticed swelling and a sense of discomfort in the wound.

Examination showed the scars of a 4-inch incision, parallel to and over the right Poupart's ligament with a vertical one descending from its center about 3 inches long. At the junction of these two scars, which was markedly depressed, was a mass feeling like an irregular collection of small glands. It was firm—not fluctuating, and slightly tender. The left inguinal glands were distinctly palpable and enlarged.

Treatment.—With the idea of inhibiting the growth of the mass the Röntgen rays were applied. The tube usually employed was of a medium high vacuum, excited by the coil. The distance of the target from the patient was 20 cm. The area treated was about 6 inches by 4 inches. The length of the exposure was 5 or 10 minutes, depending somewhat on the character of the rays given by the different tubes used. At first the exposures were on alternate days. From April 2 to April 20 they were given daily, then until May 3 they were omitted, as the skin became a little red. From that date until May 23 the exposures were daily. He was seen last June 9, 1902.

The improvement began soon after the treatment was instituted. The mass grew smaller and the sense of discomfort disappeared, the patient's general condition improved and he gained weight. On June 9 the mass in the scar had entirely gone and the glands in the left groin could not be palpated. He reacted very well to treatment and with the exception of a very

slight redness at one time the only disturbance to the skin seemed to be a marked pigmentation. There was no burning. On November 2, 1902, a letter from the patient's home in Canada says there is no evidence of a recurrence in the scar. He is still taking regular Röntgen ray treatment. The result in this case was most satisfactory. After his first operation recurrence was noticed nine months later. After the second four months later. After the third four months later. The last operation could not be made sufficiently radical to remove the whole growth, but the Röntgen ray treatment certainly has seemed to inhibit its growth up to the present time at least and it is now nine months since the last operation.

A striking feature of this case was the disappearance of the left inguinal glandular enlargement while the treatment was being applied to the right groin.

III.—SARCOMA.

CASE X.—Sarcoma of pharynx. Service of Dr. A. J. McCosh. The patient, Mrs. S., aged about 40, was born in the United States.

History.—For one year she has suffered from increasing difficulty in respiration and deglutition. A mass has formed in the back of mouth and nose so she cannot breathe through the nose. A section of the tumor removed at Roosevelt Hospital and examined microscopically was pronounced sarcoma. The patient was referred to me by Dr. J. C. Sharpe and admitted to the service of Dr. A. J. McCosh.

Physical Examination.—May 21, 1902: She is emaciated and cachectic. The palate is pressed forward and downward by a smooth, firm, rounded mass underlying the mucous membrane. It is the size of an apple and causes great difficulty in deglutition and slight difficulty in respiration. There is a firm swelling below the left angle of the jaw, which is diffuse in outline and evidently involves the overlying superficial glands, which latter are otherwise not involved.

This patient had 8 treatments of 5 minutes each with a very high vacuum tube excited by the coil at a distance from the neck of 25 cm. without any apparent relief in her symptoms and without any effect on the growth whatever. The condition when she was admitted seemed hopeless, but it was thought that treatment might at least offer relief for her oppressed breathing and pain, but even this was not accomplished. The patient rapidly became worse and died of exhaustion on June 13, 1902.

CASE XI.—Sarcoma of buttock. Service of Dr. A. J. McCosh. The patient, Miss A., aged 30, was born in the United States.

History.—In December, 1897, a swelling the size of a hen's egg, which the patient had noticed about 6 months, was excised with the entire gluteus maximus in which it was imbedded. The pathologic report was myxosarcoma. The growth returned two years later, and in January, 1900, the tumor was the size of an orange. This with the muscles of buttock was removed. The right side of the posterior surface of the sacrum at this time was chiseled away as far as the posterior foramina from the coccyx to the lower lumbar vertebrae. During both operations a gelatinous material escaped on incision of the tumor. In August, 1901, the patient noticed a painful lump the size of a hen's egg in the old scar, which was very tender.

Physical examination, November 21, 1901, showed "in the right sacroiliac region extending down on to the buttock, occupying site of former operation, a tense semielastic tumor the size of a child's head, which seems to extend to adjacent parts." On November 23, 1901, Dr. McCosh removed a large amount of this mass under chloroform. "It could be felt inside the pelvis passing through the great sciatic notch and its extent was such as to make its complete removal hopeless." On leaving the hospital there was a clean granulating area 4 inches by 1 inch. Patient's general condition was good. Pathologic report, myxosarcoma. Between December 1, 1901, and January 1, 1902, the date of her discharge, the patient had injections of Coley's erysipelas serum at intervals of from two to four days. She was readmitted January 13, 1902, the wound having increased in size to about 2 inches by 6 inches and part of the tumor tissue with sloughing surface having appeared in the wound.

On January 29 it is noted that patient has been receiving from miiij-nvj of erysipelas toxin every two or three days, followed by fever and nausea, but with little apparent effect on the growth of the tumor. February 10: The patient has been daily exposed to the Röntgen rays, but there is little evident result on the tumor, which grows so fast that large pieces are cut away at each dressing. Area of wound is 4 inches by 3 inches.

Treatment.—From January 30 to February 21 she was given daily treatments with only two omissions, one on March 7 and one on March 12. The tube was placed so that the target was from 8 cm. to 12 cm. from the surface of the tumor. The first two exposures were of 10 minutes, the remainder 15 minutes. A tube of high vacuum was used and was excited by the static machine except for one exposure in which a small 8-inch coil was used. February 12: The discharge is much less and not purulent; surface is drier; parts have been cut away without injury. February 14, 1902: Much cut away under inflamed area; growth seems to have been stopped; discharge is still serous. February 21: Skin is scaly, red; discharge has markedly increased lately; skin is beginning to burn. March

9: Use of the Röntgen rays has been discontinued the past two weeks, but area of wound or growth of tumor has increased but little during this time. May 19: Burn has entirely healed; wound is 5 inches by 6 inches; its granulations grow rapidly and contain mucous cysts; patient is losing strength.

She died May 24, 1902, of exhaustion. No autopsy was allowed.

The Röntgen ray treatment in this case was advisedly very vigorous on account of the evident malignancy of the growth. The time of exposure was long and frequently repeated and the distance of the tube from the patient was very short. It was one of the early cases, but these conditions were carried out with the idea of possible burning and it seemed necessary to give very heroic treatment to have any effect. It was the opinion of those who watched the case that the treatment for a time hindered the growth of the tumor. The discharge diminished and the patient's general condition improved, but this was only temporary and the treatment was abandoned as being unable to prevent the growth. The burning of the skin amounted to a rather marked dermatitis. There was no sloughing or ulceration, but rather large blisters formed. It is interesting to note that the burn was caused by a rather high tube generated by a static machine. A small 8-inch coil was used only once.

CASE XII.—Sarcoma of temporal region. Mrs. H., a widow of 64, was born in Ireland, and is a domestic.

History.—About 1880 the late Dr. Henry Noyes, of this city, removed several small tumors from the margin of the left eye and orbit. There was a chain of them at the lower margin of the eyelid and at the outer corner. One was the size of a hen's egg. In July, 1883, the whole left side of the face swelled and became purple. She was then operated on at Bellevue Hospital, where an extensive operation was done by Dr. Lewis A. Stimson, part of the zygomatic arch being removed and leaving a deep depression over the left temporal and zygomatic area, which has gradually filled up in part, leaving only a slight depression. The records at Bellevue show that the growth was a sarcoma. She was in that hospital six weeks and made a good recovery. She did not have erysipelas.

When the patient was about 30 years old her physician told her she had a uterine tumor. Her menses had ceased, but she soon began to flow excessively, and for one year passed several large lumps, "like liver," by vagina. Then her menses ceased, and have never reappeared. She has never had children nor miscarriages. Her husband died of tuberculosis. History is otherwise negative.

Until the present illness her condition since the operation has been good. She has never had headache nor any disturbance of vision. At times she has had a peculiar sensation of water in her head. Hearing has been slightly diminished on both sides.

Present Illness.—Three months ago she noticed a slight swelling behind the left ear, then on the left temple. The swelling increased slowly, but became so marked that her friends noticed it. She has not noticed any glandular enlargement in the neck.

Physical Examination.—June 11, 1902: The patient is a healthy woman, well nourished and slightly anemic. The left zygomatic region is occupied by a diffuse, firm swelling, extending from just posterior to the outer margin of the orbit to behind the ear; from above—about 7.50 cm. above the line of the zygoma to about 5 cm. below this line. Surface is smooth, not hot, red nor tender, raised at the summit about 2 cm. above the level of the surrounding tissue. There is no interference with the motion of the jaw and no pain, but a sense of discomfort. There is no glandular enlargement.

Treatment was begun June 11, 1902, when an exposure of five minutes was given with a low vacuum tube, the distance being 15 cm. between the target and the surface of the swelling, the static machine being used. Two days later the patient returned, saying the sense of discomfort was less and that the swelling was smaller. June 13, 14 and 15 patient was treated, the time being increased to 10 minutes and the coil being used, the current passing in the primary being 2 amperes. On June 18 the swelling had nearly disappeared. On June 20 and 23 patient had treatment, and my note on the latter date is "the swelling has entirely disappeared" after seven treatments. There were a few treatments immediately following, and the patient was discharged to return for observation. She was seen on July 3, July 12, and August 2, 1902. After July 12 there was a roughness of the skin, following a slight erythema, but this entirely disappeared. On August 2 there was a marked depression above the site of the zygoma, as there had been according to the patient's statement previous to the appearance of the swelling. All evidence of the latter had entirely gone. There was an entire absence of the feeling of discomfort, the patient had gained weight and her color was better. The patient went west to take a household position. She was an intelligent

woman, understood thoroughly the nature of the disease, and promised to let me know of any return. Nothing has been heard from her, so the condition is supposed to be the same as when she was last seen.

The question arises what was the nature of the growth? The absence of pain, tenderness, heat, and redness seems to negative a cellulitis, of which there was not the slightest evidence. There was no history pointing to an embolus or thrombus giving rise to a localized obstruction to the venous return. The swelling had appeared very gradually, having taken three months to reach the size described. In view of the previous history of sarcoma, although nearly 20 years ago the diagnosis of sarcoma recurring at the original site seemed the only one warranted, and the fact that it responded so quickly to the treatment is in keeping with the reports of cases of other observers. If it was not a recurrence of the former sarcoma I do not know what it could have been.

SUMMARY.

The cases may be classified thus :

Case I.	Epithelioma of lip.....	Cured.
Case II.	Epithelioma of lip.....	Cured?
Case XII.	Sarcoma temporal region (recurrent).....	Cured.
Case IX.	Carcinoma of lingual region (recurrent).....	Cured?
Case III.	Epithelioma of face.....	Much improved.
Case VII.	Carcinoma of breast.....	Much relieved.
Case VI.	Carcinoma of breast.....	Not improved.
Case X.	Sarcoma of pharynx.....	Died.
Case XI.	Sarcoma of buttock.....	Died.
Case V.	Carcinoma of breast.....	Died.
Case VIII.	Carcinoma of lingual region.....	Died.
Case IV.	Carcinoma of jaw.....	Died.

From the histories it will be seen that of the five cases which had a fatal termination, all were severe and in the last stages of the disease.

Case VIII—carcinoma of the inguinal region—offered possibilities of relief in view of the satisfactory result obtained in Case IX, which was similar, but the others were recognized as practically offering no hope for improvement. The patients cured have been so reported, with the feeling that there may be recurrence, for it is often years before malignant disease makes itself evident elsewhere. In the first five cases in the above table the results have been most satisfactory, even leaving out of consideration the question of absolute cure, which can be settled only by time and further careful observations.

From these and other cases the following conclusions have been drawn :

1. The small superficial cases of malignant disease seem to be most susceptible to this method of treatment.
2. The relief of pain is a very prominent feature of the Röntgen ray treatment, and is often noticed after the first exposure. In cases which have not progressed too far, it is almost possible to promise the anesthetic effect.
3. It is impossible to determine from our present knowledge without trial what cases will be favorably influenced by treatment, but patients should be warned not to be too hopeful.
4. The danger of burning is a real one. Patients should appreciate the possibility of it before treatment is started, although with precautions it may be avoided. In hospital work when the operator is doing much Röntgen ray work, the greatest precaution should be exercised in the care of his own face and hands. The apparatus should be arranged so that all changes in the tube necessary to be made while it is running can be accomplished by switches or mechanical devices so placed that the operator can control them at a distance of 12 or 15 feet from the tube.

Food Experiments.—The Department of Agriculture, under the direction of Dr. H. W. Wiley, Chief of the Bureau, will conduct additional experiments relative to the value of certain foods. Infants and persons in bad health are to be used by the department as subjects for the tests. The object is to feed the foods stated to be good for infants and children to selected individuals from the foundling hospitals and asylums, and watch their temperature, growth, and weight carefully. Statements of the condition of the infants and children fed will be taken and recorded and reports made thereon.

SOME NOTES ON POLLACCI'S NEW METHOD OF DETECTING ALBUMIN IN THE URINE.

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Methods for detecting "albumen" in the urine have accumulated so rapidly in recent years that it is frequently a difficult matter to decide which is best adapted for special clinical purposes. The delicacy of the methods alluded to is so variable and the number of possible fallacies connected with the use of each so numerous, that the difficulties of selection are made all the greater. Then, too, in the use of the various methods, not a little confusion results from the fact that many of the tests show the presence of such amounts of proteid as are of no clinical importance—such, for example, as are contained in the normal urinary mucus.

We have recently investigated the utility of Pollacci's new method for the detection of albumin in urine. The original description appeared not long ago in the *Schweizerische Wochenschrift für Chemie und Pharmacie* (1901, xl, p. 168). We have not had access to the original paper but several abstracts agree in giving the following facts regarding the method :

Pollacci has made a modified Spiegler reagent with the composition indicated below :

- A. 1 gram tartaric acid
- 5 " mercuric chlorid } dissolved in 100 cc. water.
- 10 " sodium chlorid
- B. Solution A + 5 cc. formaldehyd (40% solution).

In applying this solution (B) for the detection of albumin, Pollacci uses 2 cc. of his reagent and cautiously adds 3-5 cc. of the urine, as in Heller's test, care being taken to stratify the solutions and to prevent their admixture.

"Should a white zone appear at the line of contact of the two fluids the urine contains pathologic albumin. If this ring or zone appears slowly, after about 10 to 15 minutes, it indicates the presence of only normal quantities of albumin." Pollacci established the limits of sensitiveness of the various albumin reagents now in use, compared with his own, with the following results :

Heat, with acetic or nitric acid	1 in 75,000
Heller's reagent.....	1 " 78,000
Potassium ferrocyanid and acetic acid.....	1 " 100,000
Joties' reagent.....	1 " 150,000
Roberts' "	1 " 400,000
Sulfosalicylic acid.....	1 " 300,000
Spiegler's reagent.....	1 " 365,000
Pollacci's "	1 " 370,000

It did not appear probable to us that this method would show only the presence of albumin. We were inclined to believe that other proteids would be indicated by it. This belief was fully warranted.

We find, as Pollacci states, that the reagent shows the presence of mere traces of albumin, although it does not appear to be so delicate as Pollacci's figures would indicate. But we have also observed that the reagent precipitates minute amounts of other proteids also, such as globulins, proteoses, mucoids, mucus proteids and even gelatins. The test has no differential value, therefore, and the reagent must be regarded as a general proteid precipitant rather than an albumin detector.

We are also unable to agree with Pollacci that the proteid normally present in the urine reacts with his reagent only after a lapse of 10 or 15 minutes. Deductions drawn from the observed breadth of the "zone" and from the lapse of time until the ring appears are not reliable. We have tested numerous samples of urine from individuals apparently in perfect health and in each instance, in less time in this connection than that speci-

¹ Chemist and Druggist, 1902, ix, p. 82; Therapeutic Monthly, 1902, II, p. 223; Merck's Report, 1902, xi, p. 256, also 257.

fied by Pollacci we obtained the white ring at the point of junction of reagent and urine. That these urines were normal in this respect was not merely assumed from the evident good health of the individuals excreting them, but shown experimentally by the fact that none of them gave positive reactions in Heller's test.

We have not attempted to determine, in this connection, the responsiveness of alkaloids and other remedial agents commonly detectable in the urine and frequently affecting the "albumen" tests. The presence of mercury in the acid reagent makes it probable, however, that other substances, nonproteid in character, readily respond to the reagent.

SUMMARY OF CONCLUSIONS.

1. Pollacci's reagent readily precipitates various proteids—simple, compound and albuminoid.
2. The test is too delicate for ordinary clinical purposes, since the normally occurring urinary proteids are precipitated by the reagent.
3. Various nonproteid substances occurring in the urine in health and disease are probably also precipitated by the reagent.
4. The latter possesses little or no advantage over Spiegler's fluid.

TUBERCULOUS PERITONITIS.

BY

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Abdominal surgery during the past few years has so greatly enlarged our knowledge of tuberculous peritonitis that we no longer regard it as a rare pathologic condition, but as one encountered frequently and often undetected before the abdomen is opened.

The way of entrance of the tubercle bacillus into the peritoneal cavity is frequently hard to determine. It was formerly thought that the peritoneum was often the only structure involved. We now know that this is rarely so, and that primary uncomplicated peritoneal tuberculosis is uncommon. Seck's statistics in 2,500 autopsies show 25% to be primary, while Borschke found in 226 postmortem examinations only two in which the disease could be said to involve the peritoneum alone. Munsterman, in 46 cases of tuberculosis of the peritoneum examined postmortem, found only one primary case. The lungs and pleura are often the primary seat of the disease, and from them the peritoneum becomes infected by direct extension of the disease. The bronchial glands in children, particularly those at the bifurcation of the trachea, have been shown by Merkel to be the starting point of the infection.

Burdon-Sanderson, Sturgis, and Carr (cited by Abbe, *Medical News*, 1896), in order to determine the origin of tuberculosis in children, reviewed the findings in several hundred autopsies, and concluded that about one-third died of some form of tuberculosis. Out of 120 autopsies, in two-thirds the thoracic glands were shown to be the point of entrance, while the mesenterics were primarily affected in one-sixth. Nothnagel and Teleky are of the opinion that the disease has for its primary site the lungs and pleura in by far the greater number of cases. The intestinal tract is at times the primary seat of the disease. Pribram, of 165 cases examined, attributed 87 to intestinal, 65 to pulmonary, 8 to tubal and uterine, and 5 to osseous tuberculosis. In 107 autopsies, in which death resulted from peritoneal tuberculosis, Phillips (*Centralblatt für klin. Chir.*, 1890) found the intestine the seat of tuberculous disease in 80, or 74% of all the cases. In 44 cases infection of the peritoneum was the direct result of disease of the mesenteric or retroperitoneal glands.

Borschke, on the contrary, in his 226 cases failed to find one case of a primary isolated lesion of the intestine from which the disease had spread, although in 140 there was a primary disease of the lungs associated with an advanced tuberculous disease of the intestine.

The female genital organs, especially the fallopian tubes, may be the starting point of the disease. That infection may reach the abdominal cavity through the tubes, even in children, is shown by Vierordt's case, in which, in a girl of 6½ years, tuberculous peritonitis was preceded by a purulent vaginal discharge in which tubercle bacilli had been demonstrated. The relative frequency of infection through the tubes is still a subject of dispute. The proportion given by the various writers varies greatly. Taking all available statistics, the cases in which the tubes are involved comprises about 25% to 30% of the patients affected. It must be remembered, however, that the disease of the tubes may be secondary to peritoneal tuberculosis, instead of being the starting point. Bone or joint tuberculosis, particularly when of the hip, is often the primary source of infection of the peritoneum. The inguinal lymphatics may also become infected, from these the iliac glands, and later the peritoneum become involved. The male genital organs also occasionally furnish the starting point of a tuberculosis which eventually invades the peritoneum. Mass has found the disease to reach the peritoneum through the umbilicus in young children.

From a clinical standpoint, tuberculous peritonitis may be considered under two heads: 1. Cases of tuberculous ascites in which the exudation of serous, or sero-sanguineous fluid is the predominant feature. The exudation is preceded or accompanied by the eruption of miliary nodules involving more or less of the peritoneal surface. 2. Cases in which tumor formation is the distinctive feature.

The diagnosis in the first class of cases can be made only when all other possible causes of ascities are excluded. There are, however, some points relative to the occurrence of tuberculous ascities which should receive careful consideration:

The history, frequently of some antecedent tuberculous lesion, especially of the lungs, intestine, or genital organs.

The age of the patient, tuberculous peritonitis occurring most frequently between the ages of 20 and 40. However, it may occur at any age, being relatively frequent in children in whom it is often associated with intestinal disease.

Sex.—Statistics go to show that this disease is more common in women than in men. Landler and Nothnagel found that 90% of the cases reported were in women. König collected 131 cases, of which 120 were in females, and 11 in males. The cases of Osler, Bouldland, Häne, and Maurange, taken together, give 60 males and 131 females. The autopsy records show, on the contrary, a greater proportion of males; of Nothnagel's personal cases, 101 out of 164 were in males. At the Boston City Hospital, 14 cases represented 8 males and 6 females. In spite of these postmortem records, it is probable that the disease is more common in females than in males. One reason for the difference in the figures quoted is that women are more frequently operated upon for abdominal diseases, and therefore a larger proportion are cured than among men, who are not so often treated by abdominal section.

Temperature.—Osler calls attention to the fact that the temperature in this form of peritoneal tuberculosis is frequently subnormal, varying from 95.5° to 97°. At times it may be normal, or slightly above normal, though this is not the rule.

Pigmentation, especially of the face, is occasionally noted in peritoneal tuberculosis. This may occur when the adrenals are not affected, as in a case reported by Osler.

Onset of the Disease.—This may vary between those

cases in which the onset is exceedingly acute, resembling suppurative peritonitis or acute intestinal obstruction, and those in which the process is extremely latent, in which a gradually increasing exudation is for a long time the only symptom. In many cases the recognition of the disease is accidental, there being no distinctive symptoms to point to its true nature. Emaciation, loss of appetite, and diarrhea are symptoms which vary with the acuteness of the disease, being more pronounced when the onset is rapid and the exudation great.

The relative frequency of the ascitic form of tuberculous peritonitis is shown by cases observed by Biat (cited by Osler). Of the 81 cases analyzed by him, in 13 there was extensive ascites. A moderate amount of fluid, however, is often observed in all forms of the disease.

The differential diagnosis of the ascitic form of tuberculous peritonitis from other varieties of chronic peritonitis is at times extremely difficult. When the disease is of rapid development it may be confounded with acute peritonitis of gonococcal or pneumococcal origin. In these cases, puncture and bacteriologic examination of the fluid withdrawn is the only means of differentiating. The greatest difficulty lies in distinguishing between tuberculous peritonitis and chronic peritonitis of other kinds, as, for instance, chronic rheumatic peritonitis. Here, only exploration will clear up the diagnosis.

There may also be, as in the cases reported by Owens, Sutherland, and Henoch, a traumatic peritonitis that offers considerable difficulty in differentiating from tuberculous peritonitis.

With chronic hypertrophic cirrhosis of the liver there may be associated a chronic inflammatory condition of the peritoneum which may simulate tuberculous peritonitis.

Lastly, the so-called "foreign body" peritonitis, particularly that occasioned by the presence of scolices in the peritoneal cavity, may be mistaken for tuberculosis of this membrane.

The presence of tubercle bacilli can only rarely be demonstrated in the tuberculous ascitic fluid found. Inoculation of the guinea pig does not always yield positive results. In the other forms of peritonitis just mentioned, which are likely to be confounded with tuberculous peritonitis, bacteriologic examination of the fluid is of great value in determining the cause.

Tumor formations the result of tuberculous peritonitis, although quite common, present great difficulty in the way of diagnosis. These tumors may originate in four different ways:

1. Tumors composed of rolls of omentum are the result of an extremely chronic inflammatory process which chiefly affects the omentum. These tumors are ridge-like in form, usually lying transversely across the upper part of the abdomen. In one of my cases the tumor was caused by the great omentum being rolled laterally on itself, forming a tumor occupying the median portion of the abdomen from just below the ensiform to a point near the pubic symphysis. They are seldom associated with any considerable amount of exudate.

The diagnosis of this form of tumor is frequently difficult and at times it has been mistaken for carcinoma. The history of the patient, especially if there should be a predisposition to tuberculosis, or the appearance of other tuberculous lesions, the most frequent of which is tuberculous pleurisy, should guide us in making our diagnosis. The presence of an area giving resonant percussion notes just above the mass, in cases in which the omentum is rolled from below upward upon itself, is of value in differentiating these tumors from tumors of the liver, for which they are often mistaken.

2. Abdominal tumors produced by sacculated exudations are the most common, as well as the ones that present the greatest difficulty in diagnosis. The fluid found in these cavities may be either serofibrinous or purulent, representing different stages of the same disease. Again, the tumor may be regular in outline when

it is entirely fluid, or irregular and nodular when composed in part of cakes of lymph or omentum. These tumors may be found anywhere, but usually occupy the middle zone of the abdomen, where they have many times been regarded as tumors of the ovaries, either cystic or solid. There is no way of distinguishing positively between the sacculated effusions of tuberculous peritonitis and cystic tumors of the abdomen. We should consider carefully the history, particularly as to tuberculous disease in the family, or as to old tuberculous lesions. Abdominal pain and irregularity of the bowels are more common than in ovarian disease. The onset is generally gradual, and the general health remains fair for some time. In some cases there is early loss of appetite, emaciation and diarrhea, associated with an irregular temperature. The physical signs are exceptionally deceptive, and in some cases are identical with those of cystic ovarian disease. When the exudate is small, the outline is not nearly so distinct as in ovarian tumors, while the form and position may change at any time, owing to the alteration in position of the intestinal coils that go to form the walls of the tumor. Irregularities in the periphery of the tumor, due to tuberculous nodules and cheesy masses, are of great value in determining the nature of these tumors. Pain on pressure is also greater than in ovarian cysts or other abdominal tumors. Bimanual palpation is of value in determining the outline and consistency of these tumors and by this means we may also be able to detect roughening of the peritoneal surfaces and small masses which would otherwise escape notice. The conditions of other organs should receive close attention, especially the pleura, lungs, and genital organs.

3. Tumors formed from matting together of coils of intestines may simulate either solid or cystic abdominal growths. They may be fixed or freely movable and may occupy any part of the abdominal cavity. Mistakes in diagnosis, although they occur, are not nearly so common as in sacculated exudations. In making a diagnosis we have the history of rapid emaciation, irregularity of the bowels and irregular temperature. Physical examination of the abdomen shows irregular areas of dullness and tympany, with more or less nodular or irregular tumors. At times there is free abdominal fluid.

4. Enlarged mesenteric, or retroperitoneal glands, may closely simulate other solid abdominal tumors, particularly retroperitoneal sarcoma. This form of tuberculosis is much less common than those above mentioned. These enlargements may vary in size from that of a walnut to masses larger than a child's head. Usually they can easily be palpated, but occasionally the presence of free abdominal fluid or excessive tympanites may prevent their recognition. The nodular character and number of these tumors, together with the presence of free fluid in the abdominal cavity and the history, are usually sufficient to make a diagnosis. Irregular tympanitic areas and persistent diarrhea, with rapid emaciation, are frequently associated with this form of the disease.

We know that recovery from tuberculous peritonitis without treatment is possible. Just what proportion of cases end in spontaneous recovery is difficult to state, because of the uncertainty of the diagnosis and the fact that its whole course may be latent; and further, the patient may recover without having known definitely that the disease existed.

Foullard collected 82 cases from the older literature, of which 20 ended in recovery. Some of these patients remained in good health from 10 to 17 years. The diagnosis was, however, based upon clinical evidence alone, and not supported by any bacteriologic examination. We are justified, therefore, in questioning the accuracy of the diagnosis in some of these cases.

At the present time, knowing that such good results

may be expected after laparotomy, most of the profession are agreed that the majority of these patients should be subjected to operative treatment. The usual method of procedure in the ascitic form of the disease is simply to open the abdomen by median incision, evacuate the fluid and drain. Some irrigate the abdominal cavity with a mild antiseptic solution, while others apply antiseptics in concentrated form directly to the diseased surface. Rendu employs a solution of camphor naphthol, which he brushes over the affected surface. This solution is claimed by M. Perrier to be distinctly antagonistic to the tubercle bacillus. Direct medication applied to the miliary tubercles, of iodoform, either dry or in the form of an emulsion, has been employed by many surgeons. It is questionable whether direct medication adds to the chances of cure after laparotomy. Statistics show that most of the cases in which cure has taken place have been of the acute miliary variety and that the treatment followed was simply incision and drainage.

The effect of laparotomy upon tuberculous peritonitis has received considerable attention during the last few years. The value of operative treatment can no longer be questioned. The proportion of cures it affords, however, is a matter of doubt and one of great interest. Many of the reports are open to criticism because of the short time the cases had been watched at the time they were reported. In one instance a recovery was reported 14 days after the operation; in another, 26 days. We agree with Winckle that freedom from symptoms for at least five years should alone constitute grounds upon which to report a cure.

The percentage of cures after laparotomy for tuberculous peritonitis varies from 25% to 85% in the cases reported up to the present time. Kummel collected 30 cases, beginning with the first operated on by Spencer Wells in 1862. In these there were 25 cures of from 9 months' to 25 years' duration. Koenig collected 131 cases, of which 75% were greatly benefited and 25% cured. Aldibert reviewed 308 cases, with 69.8% cured. The largest number of operated cases (358) has been collected by Roersch. Of these 250, or 70%, were permanently cured by laparotomy.

Up to the present time over 1,500 cases of peritoneal tuberculosis treated by laparotomy have been recorded. From these reports it is evident that the prognosis depends largely upon the anatomic form that the disease assumes. In the exudative or ascitic form, the prognosis is by far the most favorable, and can be conservatively stated as giving from 40% to 50% of definitive cures. The adhesive form gives a more unfavorable prognosis in that at most only 25% recover. In the ulcerating, caseating variety, the benefit of laparotomy is questionable.

The source of infection, *i. e.*, the location of the primary lesion, also influences the prognosis. In primary tubal tuberculosis, or in cases in which any of the accessible glands are primarily affected, the removal of the offending organ will render the prognosis more favorable. In primary lung tuberculosis it goes without saying that the prognosis as regards a permanent cure must always be dark.

Of the various hypotheses advanced to explain the manner of healing of peritoneal tuberculosis after laparotomy, we may mention: (1) The action of the anesthetic; (2) psychic influences; (3) operative trauma; (4) removal of ascitic fluid depriving the tubercle bacilli of nourishment; (5) increased absorption of the peritoneum; (6) removal of ascitic fluid containing ptomaines; (7) inflammatory reaction following entrance of air; (8) destruction of tubercle bacilli by septic inflammatory reaction following opening of the abdomen.

The way in which healing takes place in tuberculous peritonitis has been studied both from postmortem examination of partially healed tuberculous lesions and from cases in which a second operation has been performed. In 1895 Jordan studied 15 cases, in 4 of

which postmortem examination was made some time after the abdomen had been opened. In 11 the tissue examined had been secured at a second operation. He concluded that healing took place as a result of an active tissue proliferation by which the essential elements of the tubercle were compressed and destroyed. Pichini, Bumm, and Osler found connective tissue displacing the cellular elements of the tubercle, beginning first in the periphery and later extending to the center of the nodule. Riva found connective tissue substituted for the tubercle, but maintained that the proliferation began in the center, and not in the periphery of the nodule. He also asserts that the formation of connective tissue was subsequent to a degeneration of the central cells of the tubercle.

In two cases in which the patients were subjected to a second laparotomy Mazzoni found the tubercles surrounded by a zone of inflammatory exudate, the result of an increased vascularization of the parts following the operation. In the center of the tubercle vacuolation and degeneration of the epithelioid cells was observed. In other parts where the healing process was more advanced connective tissue had taken the place of these central cells.

Gatti (*Arch. f. klin. Chir.*, 1895), after an extended series of experiments on animals, concludes that the tuberculous lesions found in the peritoneum healed, not by proliferation of connective tissue, the result of an active inflammatory reaction, but as the result of hydropic degeneration first affecting the protoplasm and then the nuclei of the epithelioid cells. These cells are subsequently absorbed, along with which the bacilli and round-cells gradually disappear, leaving only the pre-existing connective tissue stroma with its vessels.

Gatti considers that as a result of simple laparotomy there follows a serous exudation in the peritoneal cavity which exerts an unfavorable influence on tubercle bacilli, destroying them or so affecting their vitality that they subsequently die and are absorbed.

The question of the danger of laparotomy in tuberculous peritonitis is of interest. Many authors hold that to open the abdomen in this disease is devoid of danger, *i. e.*, there is no mortality from the operation. This is generally true, but to demonstrate that outside of the risks incident to all operations, particularly the danger from general anesthesia, there may be a fatal termination due to the operation *per se*, we offer in evidence our first case reported. It is generally conceded that when the peritoneum is beset with tubercles its resistance against ordinary pus microorganisms is increased. Very few of these patients have died from septic peritonitis following laparotomy. In our case the fatal termination was due probably to a toxemia of some kind, the source of the toxic substance likely being the tubercles, or other products of tuberculous infection, which had undergone changes as a result of the trauma to which the peritoneum had been subjected.

Case II is reported to further support the evidence already at hand that extensive tuberculous peritonitis may entirely disappear after laparotomy.

CASE I.—Miss D., aged 19, had, up to two weeks before, been well. At that time she noticed that her abdomen was larger than usual. This rapidly increased and was associated with indefinite abdominal pain and obstinate constipation. There was some dysuria and a decided diminution in the quantity of urine. On examination the abdomen was found considerably distended and there was free fluid in the abdominal cavity. The thorax, liver, and pelvic organs were negative. There was no definite abdominal tumor, and the general appearance was fairly good. The skin was decidedly pigmented, so that it had a bronzed appearance, which suggested Addison's disease. The scleras were icteric. There was a slight, puriform vaginal discharge which, on examination, showed no tubercle bacilli nor gonococci. At the end of a week she was operated upon.

A second examination before operation showed an area of dullness extending from a point half way between the ensiform cartilage and the umbilicus and pubis. This area was wider in the mesogastrium than above and below, measuring at its widest part about four inches. On palpation there could be

felt a distinct tumor mass, spindle-shaped in outline and giving the sensation of fluctuation. This was freely movable laterally, but appeared attached above and below. On each side of this dull area was a tympanic area on percussion, until the area of free abdominal fluid was reached. A diagnosis of abdominal tuberculosis was made by excluding other forms of ascites. There was no history of tuberculosis in the family.

Operation.—The abdomen was opened by a median incision, and a large quantity of straw-colored fluid escaped. The intestine was firmly adherent in many places, and was closely studded throughout its entire extent with small miliary tubercles. The bursa omentalis was rolled upon itself, and in its lumen was fluid. The lower end of the omental tube was attached to the anterior abdominal wall close to the pubis. No attempt was made to separate the adherent coils of intestines. The fluid was evacuated as completely as possible and then drained.

The patient's condition during the first 24 hours following the operation was not materially changed; her temperature was normal, pulse rapid, and mind clear. At the end of the first 24 hours she was suddenly attacked with severe epistaxis, which was controlled by plugging the nares. Within a few hours hemorrhages began from all the mucous membranes. At the same time large purpuric spots appeared on the chest and the extremities, increasing in size and number until the entire surface of the body was covered. Intramuscular hematoma also developed. The temperature rose to 100° F., the pulse gradually became imperceptible, and she died in coma 36 hours after the operation.

The postmortem examination was made by Dr. Futterer, a half hour after death. General abdominal tuberculosis of the ascitic variety was found, with slightly enlarged mesenteric glands and firm adhesions matting together the whole mass of intestines. No foci were found in the lungs or pleura. There was no old tuberculous disease of the tubes. The intestinal mucous membrane was not examined.

Cultures from the peritoneal cavity were sterile; there was no pus infection of the peritoneum.

The points of interest in this case are: 1. The insidious onset of the disease. 2. The persistence of subnormal temperature. 3. Extreme pigmentation of the skin without Addison's disease. 4. The presence of a tumor in the median line of the abdomen extending from above the umbilicus to the pubis; and the tumor being formed by the great omentum becoming rolled upon itself and filled with fluid. 5. The termination of the case—death occurring 36 hours after the operation with signs of hemorrhagic diathesis. This was probably due to toxemia of some sort, the toxic substances probably being liberated as a result of the changes which occurred consequent upon operation.

CASE II.—B. B. is a young woman who was operated on for what was thought to be suppurative peritonitis following rupture of the appendix. Her illness began suddenly with a chill and severe abdominal pain which in the course of a few hours became localized in the region of the appendix. The temperature was high, ranging above 103° F. from the first. The abdomen soon became greatly distended, with marked rigidity of the abdominal muscles.

Operation.—The abdomen was opened through an incision along the outer border of the right rectus muscle on the third day after the onset of the disease. The peritoneal cavity contained a large quantity of turbid fluid, the walls of the appendix and cecum were greatly thickened, but no rupture occurred. The entire peritoneum was thickly studded with tubercles and dense adhesions, binding together the intestinal coils. The mesenteric glands were enlarged, some reaching the size of an English walnut. The appendix was removed, the cavity irrigated with salt solution and drained by tubular and gauze drainage.

The patient made a very slow recovery, leaving her bed at the end of three months. As soon as she was able to travel she was sent to Colorado. She remained there for two years and completely regained her health. At the time she left her bed she weighed about 85 pounds. When she returned to this city after an absence of two years she had gained 55 pounds.

As a result of the operation she had a ventral hernia for which she was operated on in the summer of 1899, three years after the first operation. The abdominal cavity was again opened and careful inspection showed that scarcely a sign of the former extensive tuberculous disease existed; all the tubercles had disappeared, the peritoneum was everywhere normal in appearance. Intestinal coils were nowhere adherent. The mesenteric glands had mostly resumed a normal appearance. There were a few calcareous deposits, surrounded by a wall of white fibrous tissue, seen here and there in the mesentery. Several of these deposits with surrounding fibrous tissue were excised and submitted to microscopic examination. No tubercle bacilli were found.

Since that time the patient has resided in this city and has been examined a number of times. There are no signs of tuberculous disease in any part of the body.

The interesting features of this case are:

1. The acute character of the disease, simulating closely acute appendicitis and the beginning of suppurative peritonitis at the time of operation.

2. Extensive abdominal tuberculosis, a part of which must have existed previous to the onset of the symptoms, although the patient was apparently in perfect health.

3. The complete recovery from the disease, as evidenced by return of health and disappearance of all tuberculous lesions of the peritoneum.

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CHRONIC BILATERAL PAROTIDITIS AMONG THE INSANE, WITH A DETAILED ACCOUNT OF FIVE CASES.

BY

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The literature of the parotid gland, so far as it concerns chronic parotiditis as a clinical entity, is exceedingly scant. Osler¹ refers to the affection in the following terms: "Chronic parotitis, a condition in which the glands are enlarged, rarely painful, may follow inflammation of the throat, or mumps. Salivation may be present. It may be due to lead or mercury. It occurs also in chronic Bright's disease and syphilis." The same distinguished author² reports a case of "chronic symmetrical enlargement of the salivary and lacrimal glands" in a negro girl, aged 11, who died later of pulmonary tuberculosis, and refers to the fact that Mikulicz³ described a similar condition in 1892 as a form of chronic disease previously unrecognized and, further, that Kümmerl⁴ reported a number of such cases and added three from the literature. Five of these patients presented chronic enlargement of the lacrimal, lingual and submaxillary and parotid glands. One involved all the salivary glands, particularly the right parotid, and another involved the parotids and submaxillaries, both cases following influenza. Still another was in a man of 47, who presented swelling of both parotids of several years' duration. This latter case, so far as I have been able to learn, is the first which appears in the literature of chronic bilateral parotitis pure and simple. To this I purpose to add five similar instances which were found among 800 insane patients in the Philadelphia Hospital—an incidence of .6%.

Delafeld and Prudden, in that chapter of their work on "Pathological Anatomy and Histology" which deals with the pathology of the parotid gland, dismiss the subject of chronic parotitis with the statement that "chronic inflammation, leading to the formation of dense interstitial tissue, sometimes occurs in the salivary glands. This may occur by itself or follow an acute inflammation." The pathologic histology of the following cases is doubtless allied to that of the chronic interstitial mammitis which Allot⁵ describes in connection with pulmonary tuberculosis, and of which I hope to publish a case in the near future. This view is strengthened by the fact that the postmortem examination of the lacrimal glands in the case described by Dr. Osler revealed the substitution of fibrous tissue.

CASE I.—G. P., a German butcher, aged 41. Past history unknown.

General Appearance.—The patient is a weakened, gnome-like individual, 5 feet 1½ inches in height, weighing 102 pounds. He is frail and distorted in stature, of muddy complexion, and his facial expression is almost frog-like, the eyes protruding and either cheek being reinforced by a large ovoid tumor.

Head.—Taken as a whole the head approaches the shape of a square. The occiput is flattened and the hinder part of the vertex dips slightly inward and arises anteriorly only to turn abruptly at the upper forehead and recede rapidly downward and forward toward the frontal eminences which are noticeably large. The mastoid process of the temporal bone and the osseous surfaces in the immediate vicinity are very prominent. The ears are decidedly larger than normal and stand out unduly. The lobules are flattened and are joined on both sides by a thin bridge of tissue to the tremendously enlarged parotids. Starting slightly above the tragus on both sides and extending below the lobule and well into the neck anteriorly and into the region of the glenoid cavity behind, is an oval or egg-shaped mass. This mass is peculiarly soft and elastic to the touch and freely movable over a large area. Taken between the thumb and forefinger and rolled it imparts very much the same sensation as that which is received when the female mammary gland is similarly treated, except that the lobulations do not feel so large. The masses are symmetric in every respect, each being about three inches long, an inch in depth at its thickest part and $1\frac{1}{2}$ inches from behind forward, the overlying skin is soft and downy, entirely bereft of hair and uniformly and deeply suffused with brownish-red pigmentation. In front and above each mass the malar arises boldly, so that a deep furrow is created which runs downward and inward from a point immediately beneath the junction of the ear and scalp and is lost in the region below the angle of the mouth. This effect is plainly shown in the accompanying photograph. The chin is somewhat pointed and sparsely dotted with stubby hairs. The mouth is loose and broad. The lower lip is negroid in type. There is nothing peculiar about the nose except a



Case I.—Taken for this article by Dr. G. E. Pfahler.

marked septal deviation toward the left and an hypertrophic rhinitis. The eyeballs bulge considerably. There is no visible enlargement of the lacrimal glands and no ptosis. The right pupil is larger than the left and oval in outline, its long axis being directed from without downward and inward. The reaction to light, to accommodation and to cutaneous irritation is normal. The hard palate is broad and distinctly dome-shaped. The teeth are imperfectly formed, irregularly distributed and veneered with tartar. There are no signs of salivation nor of xerostoma. The tongue is broad, flabby, moist and clean.

Neck.—The neck is rather short and thin. The sternocleidomastoids are brought into strong relief. The clavicles are prominent. The *ponum adami* is well defined. The submaxillary, thyroid and lingual glands are not visibly enlarged.

Chest.—The chest is frightfully distorted. The right shoulder is elevated far above the level of its fellow. The anterior chest on the right side is flattened. On the left side, commencing at a point below the inferior angle of the scapula and external to the midscapular line, is a deep valley, irregularly S-shaped, which extends upward and inward and is lost below the axilla. The right scapular region bulges considerably, and there is a marked curvature of the spine in this direction. Expansion is only fair. Breathing is mostly abdominal. Deep inspiration is accompanied by a fibrillary tremor involving the superficial muscular structures of the left epigastrium and lower precordium. The nipples are small and normally placed. At the left apex the percussion note is impaired, particularly during respiratory percussion. The note at the right apex is hyper-resonant and approaches tympany in the neighborhood of the right axilla. The breath sounds are universally rough, particularly in the right axilla. No rales are heard. The apex beat is neither visible nor palpable, auscultation reveals no murmurs, the heart's action is slow, and the muscular element seems good.

Abdomen.—The belly is scaphoid, the skin loose and rough.

The liver is displaced downward, is easily palpable, and percussion reveals dulness three fingers' breadth below the costal arch in the mammillary line. The spleen is not palpable. Percussion under the costal arch below the region of the spleen does not disclose any change of note during the act of respiration, the note remaining constantly tympanitic during both inspiration and expiration. The genitalia are normal, no scars being visible.

Limbs.—The lower limbs present no abnormality. The gait is loose and shuffling. Knee-jerks are normal. No Babinski, no ankle clonus. Station is good. No edema.

Urine.—pale amber, S. G. 1.012, acid, flocculent sediment, no sugar, no albumin.

Sputum.—No tubercle bacilli found.

CASE II.—T. S., aged 67, mulatto, hostler, American.

Family History.—Negative.

Personal History.—(Abstracted from hospital records.) Left-sided facial paralysis in 1878. In June, 1894, patient is said to have suffered "an attack of hemiplegia," after which he displayed evidences of mental deterioration. Drank and smoked to excess. Habits irregular and erratic. Probable specific infection.

General Appearance.—The patient is an elderly mulatto of athletic proportions. A well-marked ptosis of the left lid, together with the position of the head, which is inclined toward the left shoulder, lends a peculiar inquiring expression to the face.

Head.—The head is well formed, with the exception of the forehead, which retreats rather too rapidly. The vessels of the temporal region are tortuous and hard. The ears, compared with the size of the head, are small and stand out prominently. The lobules are flattened, and communicate with a mass in either parotid region through the medium of a thin span of skin. The right ear exhibits a small tubercle on the upper helix. As the patient lies in bed, a decided prominence is observed on the right side in the region of the parotid gland. A similarly formed, but smaller and less conspicuous enlargement is seen at a corresponding point on the opposite side. The mass on the right is irregularly ovoid in shape, soft and elastic, freely movable, painless to manipulation, and its consistency is unaffected by movements of mastication. The skin over the mass is unattached. The enlargement commences a little below the roof of the zygoma anteriorly and extends downward in the direction of and into the neck for a distance of about $1\frac{1}{2}$ inches below the angle of the mandible. Behind it extends above the lobule of the ear and into the region of the glenoid cavity. As the patient occupies the recumbent posture this mass tends to fall backward upon itself and to assume more prominent proportions. On the left side the mass, while smaller in size, corresponds to its fellow, except that it appears to be more conspicuous when the patient is in the standing posture when, indeed, with the head erect, both masses are nearly symmetric. The tongue is broad at the base and tapers finely at its free extremity. It is fissured, tremulous, thinly coated, and protrudes with marked deviation to the right. The palate is highly placed and narrow. The cornea is surrounded by a distinct ring of fatty degeneration, and the conjunctiva displays isolated patches of the same character. The pupils are tightly contracted, equal in size and regular in outline. They respond but sluggishly to the stimulation of light and to the influence of accommodation. There is distinct ptosis of the left lid. There is no nystagmus, and the movements of the eyeball are apparently unrestricted. The lacrimal gland is not enlarged.

Neck.—No enlargement of the submaxillary, lingual or thyroid glands is visible. The carotids throb unduly.

Chest.—The chest is full and splendidly formed. Expansion is normal. The mammary glands are normally placed but decidedly enlarged. They are freely movable and firm in consistency, the lobulations are palpable and each nipple is surrounded by an area of dark brown pigmentation the size of a half dollar. Manipulation is not productive of pain. The apex beat is diffuse, the aortic second sound is sharply accentuated, but no murmurs are heard. The lungs are apparently healthy.

Abdomen.—No abnormality detected. Spleen not palpable.

Extremities.—The gait is ataxic. Knee-jerks totally absent. Station only fair. Pulse rather irregular, 90 to the minute and incompressible. The artery is extensively beaded by atheromatous deposits. The legs display a number of symmetrically distributed scars, most probably specific.

Speech.—Slow, interrupted, stumbling.

Urine.—Dirty amber, S. G. 1.030, acid, flocculent sediment, no sugar, no albumin, no casts, amorphous urates, pus cells and epithelia, cylinders and bacteria.

CASE III.—L. D., aged 58, white, cigarmaker, Cuban.

Family History.—Negative.

Personal History.—(From hospital records.) Patient has had gonorrhoea, gastrodynia, influenza, rheumatic arthritis, quinsy, and malaria. There is also a history of smallpox (probably syphilis). Was salivated on one occasion. The patient was a soldier in Cuba, and was frequently wounded about the head. He was addicted to the excessive use of alcohol and tobacco, masturbated until the twenty-fourth year and indulged freely in venereal excesses.

General Appearance.—The patient is an elderly male, whose face, scalp and neck are strikingly swarthy. There is an extensive almost universal dilation of the superficial veins,

more especially those of the abdomen, which form a veritable network. The skin is lax and rough, and the subcutaneous tissues wasted. The surface is extremely hairy. The hands and eyelids are involved in choreiform movements.

Head.—The head is well developed. There is no noticeable deformity of the ears with the exception of flattening of the lobules and partial obliteration of the antitragus on both sides. In front of, behind and below the ear on either side is a mass, oval in shape as the patient lies in bed, and conforming somewhat to the general outline of a square as the patient assumes the upright posture. Each mass is about 2½ inches from above downward and an inch anteroposteriorly. It is thickest at its center, which is below the tragus, and fades gently away into the tissues of the neck below the angle of the jaw. It arises below the zygoma in front and below the glenoid fossa behind. Both masses are freely movable, painless, rather soft to the touch, and over them the skin is easily and independently movable. The palate is high and narrow, and noticeably deep in the region of the anterior palatine fossa. The tongue is thinly coated and tremulous. There is some pouching in the region of the lingual gland. The patient attempted to bite when an effort was made to explore this region with the finger. In the corresponding region behind the chin, however, no enlargement could be felt.

Neck.—There is no detectable enlargement of the thyroid or submaxillary glands.

Chest.—The clavicles, lower ribs, and xiphoid cartilage are prominent, the latter turning abruptly and pointing directly outward. At the apices expansion is delinquent and abbreviated, the percussion note is impaired to the extent of dullness and auscultation reveals bronchial breathing, but no rales. The apex beat of the heart is displaced downward and to the left, the aortic second sound is accentuated, but no murmurs are audible.

Abdomen.—The abdominal walls are thickly beset by dilated veins. Liver dullness extends three fingers' breadth below the costal arch. The spleen is not palpable. Respiratory percussion below the costal arch in the splenic area discloses no change of note.

Extremities.—The gait is awkward. Knee-jerks somewhat exaggerated, no Babinski, no clonus. The legs are dotted over by a number of scars, probably a legacy from syphilis. No edema. The radials are atheromatous.

Urine.—Amber, 1,020, acid, no sediment. Trace of albumin with heat and the nitromagnesium test. No sugar. Numerous hyaline casts, a few granular casts and some studded with urates, epithelial and white blood cells, and moss-like clumps of urates.

CASE IV.—L. S., aged 60, negro, American. Family and personal history unobtainable.

General Appearance.—An adult negro, well nourished, fairly well developed and of muscular proportions.

Head.—The head is small in proportion to the body. The nucha is thick and full and the forehead is decidedly sloping, the combined effect being to produce a pointed occiput. The upper scalp is bald. The ears are very small, highly placed and lie close to the scalp. The helix is almost entirely obliterated and the triangular fossa exists in the form of a deep, gently curving depression which slopes downward and inward to be lost as it approaches the most prominent part of the antihelix. The lower lobe is ill-shaped, flattened and is continuous with a bulging mass which occupies the parotid region on both sides. It is most noticeable in the recumbent posture. It is three inches measuring downward, about an inch measuring anteroposteriorly, and an inch in depth at its thickest part. It extends from above the tragus well below the angle of the lower jaw and behind the lobule of the ear. It is soft and pliable, painless, movable, and its consistency is not altered by movements of mastication. The overlying skin is unattached. The tongue is coated and tooth-marked, moist and tremulous. The palate is high and narrow.

Neck.—The neck is thick and short. No glandular enlargements are present.

Chest.—The apex beat is displaced downward and outward and is forcible. No murmurs audible. The second aortic is accentuated.

Abdomen.—The belly walls are greatly distended, tense and but slightly yielding. Percussion gives a tympanitic note distributed over practically the entire abdominal surface, the pitch changing at places, but the note retaining withal its tympanitic quality. This condition has been present for years, and has never seemed to cause the patient any particular inconvenience. His bowels move with a fair degree of regularity, and not much flatus is passed in the interim. Liver dullness is replaced by tympany. The spleen is not palpable. There is no apparent impediment to the action of the heart or lungs. The most active medicinal treatment does not seem to have the slightest influence in relieving the distention. The underlying source of this marked and persistent distention is probably the so-called "idiopathic dilation of the colon," of which some remarkable examples have been recorded.

Extremities.—The lower limbs are thickly scarred, probably the remains of a specific eruption. There are other scars scattered over the body which are doubtless of like origin. There is fairly extensive edematous infiltration of the pretibial structures and of the tissues of the penis. No scars appear on the latter organ.

Urine.—First examination: Amber, 1,015, acid, no sediment, no sugar, no albumin, no casts, numerous leukocytes, epithelial cells and one so-called "kidney cell," cylindroids. Second examination: Amber, acid, 1,012, no sediment, no sugar, no albumin by heat, nitric acid and nitromagnesium solution; pus cells, epithelia and cylindroids. Note: The hospital records for 1888 refer to a trace of albumin in the urine, without casts.

CASE V.—J. F., aged 45, white, grocer, German.

Past History.—Unobtainable.

General Appearance.—The patient is of excellent stature. The facial expression is that of stupidity and listlessness, the eyes dull and sleepy, the mouth broad and heavy. The face as a whole is square.

Head.—The head is only fairly formed. The forehead is retreating, the occiput flattened and the malar bones protruding. The ears are prominent and, with the exception of a large antitragus, are normally shaped. The arteries of the temporal region are tortuous. Below and in front of the right ear, and to a lesser extent behind the lobule, is a large egg-shaped swelling which arises just opposite the tragus, at which point the skin is deeply creased and wrinkled and attached to the lobule. This tumor attains its point of greatest thickness just above the angle of the jaw, whence it slopes gently downward and is lost below the ramus. The skin over the mass is unattached, deeply pigmented a brownish-red and hairless. The tumor itself is movable, painless, and elastic to the touch. Precisely the same condition obtains on the opposite side save that here the mass is not so large. The lips are negroid, especially the lower, which is bulky. The palate is broad and flat, anemic and more deeply corrugated in the region of the anterior fossa than normally.

Neck.—No glandular enlargements visible.

Chest.—The superficial veins of the upper chest are dilated, as indeed are those of the abdominal walls and extremities. The lungs are apparently healthy. The heart sounds are distant and muffled, but no murmurs can be heard. The pulse is hard and incompressible, the vessel atheromatous.

Abdomen.—No further abnormality detected. The spleen is not palpable and the hernial orifices are not occupied.

Extremities.—There is no edema.

Note: The hospital records under date of January 1, 1900, 2½ years before the above history was taken, read: "J. F. is just recovering from a severe laryngitis, which appeared to follow a pleurisy of about 2 weeks' duration. This began with a friction rub anteriorly. A small effusion formed, then disappeared, and a 'brassy' cough with pain in the throat began. A gray ulcer was seen on the left wall of the larynx."

Urine.—Amber, S. G. 1,020, acid, no sugar, no albumin, no casts.

In Case I of my series I am led to believe that the condition is one which may be regarded as a stigma of degeneration. In support of this view the following facts may be offered: The patient is an imbecile who, in addition to defective mentality, presents a number of physical infirmities commonly referred to as stigmata of degeneration, namely, malformation of the skull, large and illformed ears, broad and dome-shaped palate, pointed chin, negroid lower lip, pronounced deviation of the nasal septum, irregular, uneven and misshapen pupils, imperfect teeth, rotary lateral curvature of the spine and thoracic deformities. There is no obtainable history of syphilis and no signs of its existence. The analysis of the urine and the condition of the circulatory apparatus negative nephritis as a possible cause. Again, the delicately symmetric distribution of the parotid lesions, the fact that they are known to have existed for 10 years without altering in size, the peculiar pigment formation and the total absence of hair from the skin which covers them, confirm rather than refute this view.

In Case II syphilis first demands consideration as the most probable etiologic factor. In addition the accentuated aortic second sound, the atheroma of the peripheral arteries, the age of the patient, the history of alcoholism and of syphilis are more than vaguely suggestive of the existence of some kidney lesion unrevealed by the analysis of the urine.

In Case III there is a history of influenza, quinsy, alcoholism, salivation (most likely from mercury), and a suspicious history of syphilis with almost positive signs of a former specific eruption. Moreover, there are distinct signs of an apical tuberculosis and of a severe nephritis.

In Case IV, despite the absence of albumin, even in delicate trace, and of casts, it would seem superfluous to seek further for an explanation of the edematous condition of the lower extremities and of the penis. The

age of the patient, the probable existence of syphilis, the low specific gravity of the urine, the signs of cardiac hypertrophy without ruptured compensation as exemplified in the downward and outward displacement of the apex beat and its forcible impulse, the accentuated aortic second sound and the atheromatous condition of the peripheral arteries, appear to be sufficient to warrant at least a tentative diagnosis of interstitial nephritis and thus to explain the presence of the edema.

In Case V there is a history of an ulcerative laryngitis which may have been responsible for the parotid lesion.

Each of these cases has several points in common with the others. All the patients are above 30 years and present mental cases; all exhibit more or less acceptable stigmata of degeneration; three are almost unquestionably syphilitic; and, with the exception of Case I, nephritis has either been proved to exist or there are strong reasons for suspecting its existence. Few patients in the Philadelphia Hospital above 40 years of age go to autopsy and present normal kidneys.

Kyle⁶ refers to a number of cases⁷ reported by himself, of enlargement of the thyroid gland due, he believes, to the precipitation of certain substances which irritate this gland and stimulate its blood supply. He states, further, that he is convinced that a study of the saliva would reveal any alteration in the chemistry of the body, since "the secreting glands receive from the blood the supply from which they elaborate certain chemic compounds" so that "if an analysis be made of the composition of such secretion it would give a good index to the general condition of the individual. . . ." Such an explanation seems most fitting in the cases here reported. It is quite probable that certain cases of syphilis, nephritis and other morbid conditions are attended by the elaboration of irritant substances which bear a selective affinity for the structures of the parotid glands and that these substances exist in the saliva, in which one skilled in the details of organic analysis might be able to detect them. For a similar reason it seems probable that the prolonged use of such drugs as potassium bromid, iodine and iodoform, arsenic, antipyrin, mercury and salicylic acid might affect the parotids in the same way, since these drugs are eliminated in the secretions from these glands.

There is but one condition of which I have knowledge with which chronic bilateral parotitis could be confused, and that is symmetric hypertrophy of the masseter muscles, of which I have seen two cases. In the relaxed state the sensation imparted to the palpating finger is very similar, but immediately the patient exercises these muscles in the act of mastication the difference is apparent.

In conclusion, I wish to express my thanks to Dr. G. E. Pfahler, formerly assistant chief resident physician in the Philadelphia Hospital, for furnishing the photograph which accompanies this article.

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Typhoid Traced to Milk Supply.—It is asserted that a contaminated milk supply is responsible for the numerous cases of typhoid which have lately appeared in Paterson, N. J. It was found that in 80% of the cases milk was supplied by one dealer. Investigation showed the presence of germs in this milk and from this finding the source of the contagion was traced to a family in the vicinity, several members of which were afflicted with typhoid fever and which supplied milk to the dealer in question. In order that no delay shall occur in locating the source of contagion should a future outbreak occur the Board of Health has adopted an ordinance requiring each dealer to notify the board from whom he receives his milk.

TEA AND COFFEE INTOXICATION.¹

BY

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of Fulda, Minn.

My reason for calling your attention to this subject is its importance to our patients and its apparent neglect by the medical profession. Few persons are found who do not use one or the other of these beverages every day, and the quantities consumed by this nation alone in one year in the aggregate are enormous. Both tea and coffee contain relatively large proportions of active ingredients, and we may be surprised that we do not meet even more cases of poisoning. Textbooks on the practice of medicine and on nervous diseases are silent on this question and its literature in our medical journals is scanty. The subject has not been as exhaustively studied as its importance demands and our attention is called to it so seldom that we are not impressed with its seriousness. Knowing so little about it we do not weigh its gravity, and in my opinion we are not properly on our guard to recognize the symptoms and to guard our patients against them. I feel certain that cases of poisonous action by tea and coffee are relatively frequent and that they are often overlooked. That the moderate use of these substances is probably highly beneficial is not to be denied, but we must also realize that excessive use leads to harm.

The active principles in tea and coffee are thein, caffeine and tannin. Tea contains from 3% to 5% of the former and from 5% to 10% of the latter, according to kind and quality.

In roasted coffee we find caffeine, from 1% to 2%, caffeine-tannic acid and several empyreumatic and volatile substances developed during the roasting process, some of which are collectively known as caffeine. The peculiar flavor in both tea and coffee depends on volatile oils which are present in minute quantities. The caffeine, thein and the tannic acid are the substances which do good or harm as the case may be. Chemically, caffeine and thein are said to be identical, it being stated that most of the caffeine in the market is manufactured from cheap tea, yet physiologists are not in entire accord, some claiming them to be identical in physiologic action, others denying this statement.

The physiologic action of caffeine and thein, stated briefly, is as follows:

1. They cause wakefulness, greater capacity for mental labor, and increased activity of thought by stimulation of the brain cells. Increase of the reflexes through stimulation of the spinal cord.

2. The heart's action is strengthened, being first slowed and then becoming more rapid and irregular. This effect is likened to that of digitalis but is more evanescent and also more rapid. It is generally conceded that this effect is due to stimulation of the medulla and not to direct action on the heart.

3. Diuresis occurs by direct stimulation of the secretory epithelium of the kidney, the solid as well as the liquid constituents of the urine being increased.

4. Thein is said, by some authorities, to have the following action in addition to the above: It causes a fall in body temperature while caffeine causes a rise; its action is more marked on the sensory system and caffeine on the motor system; it is a powerful local anesthetic and analgesic, while caffeine has no such effect.

5. The tannic acid exerts its wellknown astringent properties on the alimentary canal and undoubtedly has an injurious effect on gastric and intestinal digestion through the formation of insoluble compounds.

From this briefly outlined physiologic action of the principal active constituents of tea and coffee we can expect the following reactions when used to excess:

1. Constant overstimulation of the brain leads to exhaustion, the attendant train of evils being insomnia,

¹Read before the Southwestern Minnesota Medical Society at a meeting held at Fulda, Minn., July 24, 1902.

vertigo, headache, neuralgia, flashes of light, mental dulness with exhaustion of mind, disinclination to work, and melancholia with apprehension of evil.

2. Increased and irregular heart action, ringing in the ears, muscular tremors, hyperesthesia and paresthesia, general weakness and disinclination to physical exertion.

3. Various forms of gastric and intestinal indigestion, with loss of appetite, formation of gas, tenderness of the stomach, with neuralgic pains in the abdomen.

4. Diarrhea when using coffee, and constipation with alternating attacks of diarrhea when using tea.

5. Loss of bodily weight.

Patients showing a mild degree of intoxication frequently present themselves for treatment, and the following symptoms are noted: Lassitude, mental and physical, sleepless or restless nights, headache or neuralgia, loss of appetite with fermentative dyspepsia, constipation in tea drinkers and some disturbance of the heart. Indeed, irregular heart beat is so nearly constant and peculiar in these cases that I regard it as almost pathognomonic of this condition and call your attention especially to it. When found, and alcohol and tobacco as a cause have been eliminated, you should suspect excessive use of either tea or coffee.

Two cases of such inebriation have been under my care within a year, the histories of which are interesting:

Last September I was called to see Mrs. G., an American, aged about 50. She gave the following history: She has been an invalid for many years, having been troubled with chronic constipation and biliousness, for which she has been under medical care a number of times. For several years the constipation has alternated with diarrhea, which latter condition has been constant for about eight months and on account of which I was called to see her. For several months she has been confined to her bed the greater part of the time on account of general debility. She is subject to insomnia, severe headaches and abdominal pains, is inclined to be melancholic and is resigned to her invalidism with the exception of the loose bowels. She is markedly emaciated, the skin is moist and has a peculiar yellowish and muddy appearance, a color I had once before seen in a case of chronic tea poisoning with obstinate constipation. Her temperature was slightly below normal, the heart's action weak and irregular. The abdomen was tender in the epigastrium and right costal margin, and tympanitic. Her lips were tremulous. I learned that she drank tea before breakfast, several cups with the meal, several more before dinner and so on through the day; like all toppers she drank it strong, early, late, and often. The treatment in this case consisted in forbidding her indulgence, in thoroughly flushing out the bowels, and the administration of Dover's powder, belladonna, and washed sulfur. She will not give tea up entirely and consequently she still remains an invalid, although she is now much more comfortable, in fact is as well as she cares to be.

The second case is that of W. H. K., Irish by birth and a farmer by occupation. He is 52 years of age, is a man of good habits, using alcohol and tobacco in moderation. He had pneumonia and pleurisy 14 years ago and has had attacks of bronchitis in the winter several times since. For the last four or five years he has had good health. His health began to fail early last January, when he lost all desire for food and became emaciated and too weak to leave the house. He had moderate diarrhea with undefinable pains in the stomach and bowels. There was great restlessness, inability to sleep and marked mental depression, and expecting to die he arranged his affairs accordingly. I saw him for the first time on February 19, when he presented the following picture: The face was pale and melancholic, tongue thickly furred. The lungs showed some bronchitis. The heart was normal in size but the beat was very uneven in time and tension. There was no evidence of arteriosclerosis. The reflexes are normal. Gait is steady but the hands and lips twitch. The urine was normal. The stomach was dilated, and the entire abdomen was dilated and tender on pressure. The pain was subjective, since palpation gave no pain when his attention was drawn to something else. I was unable to find organic disease and put him on general treatment. During the following two weeks he called on me several times, once with his minister, because the attacks of extreme restlessness with heart palpitation made him fear impending death. Early in March I again carefully examined him after one of his bad spells and told him I could find no organic disease and saw no reason why he should die. I explained to him that his peculiar symptoms were a puzzle to me and that I could account for them only on the theory of excessive use of either alcohol or tobacco. He then stated that he perhaps used coffee to excess. He drank about a quart after dressing in the morning, three or four cups with each meal and another generous draught before retiring at night. During his three months' illness he had been living on the drug and this explained the etiology of the case and the reason why he steadily grew worse

in spite of good nursing and otherwise careful treatment. The coffee was stopped at once and a roasted cereal preparation was substituted. I gave him bromids in moderate doses with nux vomica, and for the diarrhea a powder containing Dover's 0.13 gram (2 grs.), pulv. kino 0.06 gram (1 gr.), washed sulfur 0.45 gram (7 grs.), four of these powders being taken during 24 hours. I also insisted on a generous mixed diet, assuring him it would cause no additional abdominal distress. In a few days he was able to sleep, the diarrhea lessened and the nervousness gradually passed away. The melancholia also left him and he made a good, although slow, recovery and by June he was in his usual condition of health.

This case taught me a useful lesson. I thought I knew my patient so well that it was unnecessary to question him closely as to diet during my first examination, and only my remark of the similarity of his symptoms to those caused by the use of alcohol and tobacco to excess led to the discovery of the cause of his illness.

These two cases present the symptoms most often noted, but many other manifestations have been described, such as epilepsy, intense vertigo simulating Ménière's disease and being mistaken for it, muscular pains and cramps, and even blindness has been caused by coffee. It is stated that total blindness is common among the Moors, especially in those over 50 years of age. In that country coffee is used to excess to a much greater extent than with us, for it takes the place of alcohol. Tea toppers as a rule belong to the fair sex, and the nervous manifestations seen as a result of its use are as protean as seen in hysteria.

Dr James Wood made an exhaustive study of the symptoms in 25 cases of tea intoxication, with the following result:

Simple headache	80%
Facial or capital neuralgia	92%
Vertigo	86%
Mental confusion	48%
Restlessness	48%
Hallucinations	16%
Nightmare and dreams	20%
Dependancy	44%
Anxiety	52%
Excitement	28%
Insomnia	56%
Palpitation of the heart	76%
Nausea	60%
Gastric and intestinal indigestion	56%
Bowels, constipation	48%
" alternating with diarrhea	28%
" diarrhea	8%
Sinking sensations in the pit of the stomach.	52%
Anorexia	52%
Muscular tremors	61%
Pains other than in head.	44%
Dyspnea	24%

These cases were observed during the summer time the percentage of serious symptoms being greater than usual as people drink more in hot weather.

In the treatment of these patients the essential point is to stop the habit; without this, relief is not to be expected. This is often difficult to accomplish, especially with women, as they are notoriously harder to control than men. Medicinal treatment is symptomatic and good recoveries may be expected if the habit is given up. I find no evidence that this form of inebriation leads to organic disease like alcohol, although the insane asylum reports of Ireland give excessive tea drinking a prominent place in the causation of lunacy in that country.

The susceptibility to this form of inebriation varies according to age, sex, occupation, susceptibility, temperament and climate. When used to excess the detrimental action is quite constant and some of the well defined symptoms outlined may confidently be expected.

From this brief study we should bear this condition in mind that we may give our patients the best advice and properly safeguard the public health.

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SPECIAL ARTICLES

THE NATURAL STRUGGLE OF MANKIND AGAINST CONTAGIOUS DISEASE.

BY

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According to modern theories, tuberculosis is commonly said to be simply a contagious disease. This applies to a majority of the cases; the exact proportion, however, is not stated. If we compare what I propose to call the "*contagious energy*" of contagious diseases, most of the other typical forms—for instance measles—certainly far surpass tuberculosis, but this difference only relates to time—duration. Measles will certainly infect earlier and, in a given period oftener, than tuberculosis, but essentially the manner of propagation is the same—germs passing immediately from the diseased to the healthy individual, from man to man. This view has raised the hope that the ravages of tuberculosis may be gradually abated if as many patients as possible are detained in special infirmaries and at the same time all ejected germs destroyed, whenever that can be done; in short, if the chances of infection are lessened.

Bacteriology, in originating this theory, has certainly placed the clinical aspect of tuberculosis in an entirely new light. We are all familiar with the bacteriologic description of the tuberculous patient, scattering about him myriads of deadly germs, and daily and hourly threatening all around him with the terrible virus. If such visions are met in scientific papers, confirmed to all appearance by irrefutable experiments, small wonder that the fear of bacilli suggests to popular imagination even more exaggerated terrors. The very idea of contagion seems to partake of a contagious nature. It creeps into medical theory, favored perhaps by tempting hopes of a future easy and certain prevention of the disease and slowly, but surely, leads to overestimating the risk of infection. It seems surprising nowadays how little notice was taken of this risk before bacilli had been discovered. Surely the disease was well enough known to clinicians. They also seemed at the time to have judged pretty correctly the contagious energy of most other diseases, when they did not, indeed, err on the other side, by mistaking for contagious forms those which we now know to be not such. A certain degree of contagiousity was suspected at all times. Popular opinion in particular seems to have entertained some such ideas, but certainly nobody would have admitted that such stringent preventive measures as those mentioned could possibly be useful, far less necessary. The old and the new opinions on the subject seem, in fact, irconcilable. Perhaps so sudden a change in the views of many medical men may be explained by the circumstance that the quality which I have termed "*contagious energy*" has hitherto, to my knowledge, never been precisely defined. We read and are taught that, according to common experience, clinicians consider a certain disease more contagious and another less so, but such judgments are based only on personal impression, instead of calculation, to which the question would seem perfectly well adapted.

The spreading of an epidemic is, indeed, not unlike the propagation of organic species, at least in numerical respect. Like the latter, the former may be reduced to certain rules, and therefore calculated. If a species consists of an equal number of individuals at the beginning and end of a given period, we must conclude that within that period increase and loss have been equal. Take, for instance, the census of a population. If it is the same on the first and last day of a year, it follows that within that year equal numbers of births and deaths have taken place. We can apply the same principle to any disease. Whenever a disease has not changed in frequency, the number of fresh cases must equal the loss of old ones—recovery and death, of course, both counting as loss. With the help of a little statistic research this self-evident proposition enables us to measure with sufficient accuracy the relative contagious energy which any genuine contagious disease may display.

Now, where true values of frequency are needed statistic evidence certainly is often misleading. But we only require a statement of unchanged frequency within a limited period, and for that we safely rely on statistics. Any omission may be supposed to affect all numbers equally; we are therefore justified in comparing them, as the error is practically eliminated. Statistics, however, show that some contagious diseases locally and periodically change in frequency. At intervals they rise to enormous epidemics, and again dwindle away to the lowest rates. From this we infer only that the measure of contagious energy which we are seeking may vary within certain limits. We must, in some cases, be content with an average figure that may be applicable only to a certain time and place. But most of our clinical knowledge is subject to similar restrictions. Speaking of variable contagious energy we do not wish to be understood in a literal sense. What really changes is probably, in most instances, not the nature of the virus, but of the medium acted upon. The term, of course, is a mere abstraction, intended to denote the absolute change in the frequency of infection, however caused.

Now we propose to measure contagious energy by the average number of healthy individuals infected by one single case and within one daily period, and this number we will call the "*daily rate.*" To simplify calculation let us first consider a fictitious disease of a perfectly regular character. We give it one day's duration, letting it begin one day after infection, and assume that under these conditions the frequency does not change. Let us suppose further that all men have equal predisposition for infection, which occurs from man to man only and once only in every individual. Evidently the daily rate is in this case unity. One average sick infects but one healthy individual. After one day all the sick of the preceding day are gone and an equal number of healthy appear on the sick list. The total figure of sick is every day the same. This daily rate, equal to one, we consider as a unity of contagious energy which we can apply as a measure to real diseases. This example is also well suited to show how swiftly frequency must rise or fall whenever the supposed balance is disturbed. Leave the duration of one day unchanged, but double the contagious energy (making the daily rate equal to 2) and the frequency will daily double, rising by powers of 2, as in the wellknown oriental tale of the chessboard: 1.2.4.8.16.32... Starting from one single case such a disease would have infected the whole population of the earth (estimated at about two thousand millions) after 30 periods, or within a month. If we now leave the daily rate unchanged but increase the duration to two days, the number of cases will rise almost as quickly as before. Within two days each sick will now infect two healthy. The daily infections then follow another kind of progression, complicated by the circumstance that part of the sick of each day will remain sick and consequently count a second time on the following day. The series has the peculiarity that every member is the sum of the two last preceding members. Starting from one case it runs: 1.2.3.5.8.13..... By means of the theory of catenary fractions any required member can be approximately calculated. I find that after the forty-fourth day this contagion would again have traveled over all human kind. On reversing the propositions the infections must fall at the same rate. Starting from one thousand millions of sick (the number of fresh infections on the thirtieth and last day) but reducing the "*daily rate*" to $\frac{1}{2}$, the number of cases falls, as it has risen, and after the thirtieth day it would arrive at 0, the disease would end. To reverse the conditions of the second series is not quite so simple. On account of the aforesaid complication the fall cannot be identical with the rise. But doubtless, on establishing suitable propositions, it may be caused to fall from its highest value to less than unity within the same lapse of time. Let us now suppose that neither increase nor decrease takes place, the number of sick remains constant. A very simple reflection will show what condition must be fulfilled in this case. Every sick within the space of his own contagious period must on an average infect but one healthy individual. It is because this new infected case takes the place of the departed one that the total number remains stationary. This state of things, generally speaking, is always arrived at if we divide the "*daily rate*" by the same figure by which the contagious period is

multiplied, or inversely. Or, stated otherwise: daily rate and period are, under this condition, reciprocal values. A somewhat important conclusion therefore follows from these apparently self-evident propositions. Of all contagious diseases maintaining an equal frequency during the period of observation we may state that their contagious period and their daily rate, *i. e.*, their contagious energy, are inversely proportional. That epidemics can spread and decline very rapidly is of course a well-known fact. If we have explained it theoretically at some length it was only to show that the equilibrium is in a state of great lability. The two factors are, as it were, balanced on very sensitive scales and the proportion is therefore highly exact whenever frequency really is approximately constant.

Consequently it is no mere casual coincidence that among known contagions the more active ones are throughout of shorter duration, and we may safely infer that the more chronic diseases possess in proportion less contagious energy the longer their contagious period extends. We must except, however, all epidemics rapidly changing in frequency, and, therefore, in contagious energy. They will, during such changes, recede further from this rule.

As a practical test let us take measles. I fear it is not accurately known what average number of days a case of measles must be called contagious. But the number might be approximately ascertained without much difficulty by close study of a smaller epidemic in a medium-sized town. Such research not coming within my reach, I will suppose at random that a period of 10 days would be found, which is about equal to the time of incubation. We would then affix to measles the daily rate: 0,1, that is to say: One case produces a second case within 10 days or 10 existing cases will cause one fresh infection per diem. At first, while the epidemic is spreading rapidly, the daily rate will of course be somewhat higher and toward the end a little lower, only in the middle period of the epidemic, when its frequency is approximately constant, the normal value of 0,1 is correct. The daily rates corresponding to the rise and fall, however, need not diverge very markedly from the normal value. The smallest numbers of cases that open and close the epidemic are of course almost accidental. They cannot give correct daily rates. The true rates probably vary within very narrow limits. That is best seen by comparison with our calculation if we substitute a period of 10 days for the one-day period. For, if the daily rate were doubled, we thus find that one single case must have produced two thousand millions after 300 days or in about 10 months. If it were lowered by one-half an equally rapid fall must take place. Evidently such variations are not borne out by ordinary experience. We know that the highest daily rate of measles, as of other contagions, occurs whenever they happen to travel into uninfected regions, as was observed by Panum in the well-known epidemic on the Faroe. These islands had been spared by the disease for 65 years when one case landed. Within about 7 months 6,000 persons or somewhat more than $\frac{1}{2}$ of the whole population sickened, although the distribution of a scanty population over several islands was unfavorable to a quick spread of the disease. This growth from 1 case to 6,000 within 21 periods corresponds to a daily rate of not quite 0,15, or almost $1\frac{1}{2}$ of the usual value (if it is permitted to apply our hypothetical period of 10 days). As, however, this figure is only an average for the whole extent of the epidemic, we should estimate the beginning a little higher, probably about twice as much. One average sick at the outset of this epidemic might therefore be supposed to have infected from two to almost three healthy persons within 10 days. Daily rates of similar height are certainly uncommon. But epidemic influenza or medieval plague may sometimes have attained or even surpassed these rates, both diseases that also revisit the same regions at long intervals and then spread very rapidly.

We will now try to apply the theory to tuberculosis. I am not sure whether tuberculosis is just now increasing or declining. But certainly the change, if any, is progressing so slowly that for the space of a year or even 10 years the daily rate may be considered fairly constant. Next we ought to ascertain the length of the contagious period. In the opinion of contagionists a tuberculous person is infectious from his first discharge of virulent bacilli to his last, whether the disease ends in recovery or in

death. Specialists on tuberculosis doubtless could state accurately the true average length of this period. Having no such exact data at my disposal I shall again be content with a free estimate. The period certainly is many times longer than in measles. I would suppose it to be more than one year and less than two; let us call it 500 days. For on one hand, we must consider the acute cases that sweep away the patient in a few months, on the other the probably larger number of chronic sufferers that linger for several years. I lay no stress upon the exact figure, but only on the fact that the length of time is approximately of this order. Supposing it to be 500 days, the daily rate must be 0,002. An average case will last 500 days until it ends by recovery or death and leaves one fresh case behind. Or, if one healthy person is to sicken every day, 500 cases must be present. Measles would be 50 times more contagious than pulmonary tuberculosis. Such a risk of infection appears insignificant if one recalls the vision of the tuberculous patient as described above. For the greater portion of humanity in ordinary traffic it may be called practically non-existent. Even if one inclined to shorten the contagious period to 400 or 300 days the contrast would still be striking. To be seriously endangered by the virus a healthy man would have to live at least several months in close proximity to a patient and concentrate, as it were, all the contagious energy upon himself. Infection would seem more probable only for husband and wife, children and other housemates, and especially for nurses of invalids. The old popular belief that only those living in close contact with, and principally in the married state with a patient, need fear contagion would seem a very near guess at the truth. All things considered, tuberculosis certainly would appear far less contagious than it is now generally believed to be. Moreover, it must be kept in mind that this theory, being purely deductive, does not by any means demonstrate tuberculosis to be at all contagious, but only affirms that if it be so the daily rate cannot exceed the stated figure, assuming all cases to arise from contagion. If therefore anybody believes that a larger fraction of tuberculous cases is not caused by inhaling or swallowing scattered germs he ought logically to lower the daily rate by the same fraction. And the noncontagionist, if disposed to deny contagion altogether, may do so, so far as our demonstration is concerned.

Judging from the foregoing description of the tuberculous patient and the relentless laws of geometric progression, untold numbers of tuberculous persons ought to be found everywhere, or rather they must many decades or even centuries ago have overrun all human kind. Where are all these sick? Here we must own that a very obvious objection arises. In evaluating the energy of contagion we have considered as infected only those that in turn become contagious themselves. The supposed high energy of contagion may therefore be true, all mankind may be really infected, if the majority of infected cases never appear in statistics and do not influence the daily rate because they remain in good health. They may at least be thought healthy and counted as such, though perhaps their lungs contain a few calcified tubercles. This argument I believe to be unanswerable. Infected in this sense, a very large proportion of the people in civilized countries may possibly be. Postmortem examinations in hospitals, though the apex of every lung is not investigated by microtomic methods, certainly bear record, as everybody knows, to an enormous percentage of these cases.

But this objection, whether right or wrong, cannot refute our conclusion that tuberculosis in its clinical aspect possesses very little or no energy of contagion. If the real malady is not dependent on contagion but on other circumstances, if the virus is present in the bodies of most men, while the remainder are not liable to take it, such contagion practically has ceased to be real contagion, and evidently nothing is gained by exterminating it by all possible means in the outer world. Let us now put to the test the common idea of destroying a contagious disease by isolation and disinfection. It will be seen why the prognosis must be unfavorable, and more especially so in chronic forms with low energy of contagion. For measles, the virus of which we cannot get hold of, complete isolation would be necessary. But to effect this we need only shut up each patient for ten days in order to prevent on an average one

fresh infection. Evidently this measure strictly applied in a large region would seem to lead quickly to a considerable fall in the frequency of measles. Still, calling to mind the Faroe islands, we doubt if it would succeed in really destroying the disease. As to tuberculosis, it is hoped that a combined process of isolation and disinfection will lower the chances of infection. Granting this work to be done so thoroughly that perfect protection were attained, these prophylactic measures would have to proceed for every single case throughout a period of 500 days, with the result of preventing only one infection. If we picture the amount of work required to exclude measles from a large country, and then allowing, of course, for differences, multiply this work by 50, it will be seen that this method of conquering tuberculosis may be called a slow one. But be it ever so slow, can this method be considered effective? Let us assume the modern protective measures to have already attained the final result. All germs in all homes and places of public resort are thoroughly destroyed by disinfection. At the same time all patients suffering from virulent discharge have been imprisoned in perfect sanatoriums where they cannot infect any healthy person, and where they are kept until recovery or death ensues. Would tuberculosis now be annihilated? The strictest contagionist, I believe, would doubt it. Innumerable bearers of latent tubercles would still remain to sicken from fresh attacks after pneumonia and other diseases or in consequence of privation and overexertion. The prophylactic work mentioned above must therefore be prolonged, repeated again and again for about a lifetime, unless these fresh cases are quickly to reestablish the old generally infected state. But what if even this had at length been attained, the entire country, all Europe perhaps, had been thus artificially cleared of the virus? Then indeed a generation wholly free of tubercles must be reared. And then maybe after the lapse of two lifetimes—say after 65 years—Europe might offer a condition with regard to tuberculosis analogous to the Faroe islands when the first case of measles landed. All predisposed children, however frail and delicate, must have grown up without risk of germs, then an unequalled field for a gigantic growth of an epidemic, or rather pandemic of tuberculosis would be prepared. How is infection to be warded off? Or is the contest by the same artificial means to be prolonged forever?

Now I wish to state clearly that I do not by any means intend to represent this fight as hopeless. I do not believe that tuberculosis will exterminate mankind, or that any other known disease will. In its time tuberculosis will pass away and man will suffer and die by new diseases. What I affirm is that we must fight the battle with other weapons and other allies if we are to defeat the enemy. Nature herself, our most powerful ally, has long ago entered the lists in our behalf. If it is true that latent tuberculosis is widely spread in our population and that stronger constitutions are insensible to, or in a certain degree seasoned against, a small number of tubercles, then nature has already, unaided by science, partly overcome the foe.

We have hitherto tried to show that daily rate and length of contagious period actually do influence each other. But if this be a fact, one may also inquire the cause of this relation. Why do contagious diseases follow this rule? Why are the more active ones of shorter duration and the longer diseases less infectious? We now ought to find that this disposition represents a useful or even necessary attribute of diseases, enabling them to live and thrive. But a similar rule of far wider reach exists which regulates the conditions of life over the whole organic world. Shortlived species must breed rapidly so as not to die out. Longlived species may multiply more slowly and will in the end thrive better thereby, because otherwise their means of existence would soon run short. The want of food, reacting either upon longevity or upon fertility, is probably the cause which tends universally to establish the most favorable relation between the two factors. Following up the analogy, it is evident that a contagious disease of short duration could not hold its own if the daily rate were too low, and on the other hand, mankind could not possibly long resist a chronic disease with high contagious energy. All genuine contagions that spread by direct infection may only therefore be ranged under the same law, if it be permitted to consider the species which bears

the disease as their means of existence or their "culture medium."

We must throw aside for a moment all our traditional dualistic and "anthropocentric" prejudices, and view the natural problem of "abnormity" and sickness clearly and critically from a higher vantage ground. Disease is then not a thing opposed to the laws of nature, nor is it merely a deadly conflict between parasite and host, it is in truth a kind of imperfect symbiosis. The microbes harmful to man are not intent upon his destruction, but on their own life and growth. The parasites of true contagion are even wholly dependent on their host. They destroy their own race if they exterminate the species with whose existence they have linked their own. Exceptionally and locally this does occur. In antiquity and in the middle ages whole villages and districts have sometimes been almost depopulated. We find the same even today in animals, for instance the disease of crayfish, which a few years ago all but destroyed our continental *astacus fluviatilis* in rivers and lakes. But these cases are exceptional and may be considered as miscarried attempts at symbiosis. Generally a more lasting relation is formed which tends toward a kind of equilibrium. When a disease enters a fresh territory for the first time with abnormally high daily rate, it gains an immense expansion and sweeps away all the more highly disposed (susceptible) individuals. On returning next time, if the interval was not too long, it will meet a somewhat deteriorated medium. Those naturally quite indisposed (nonsusceptible), whom the disease spares altogether, form the main stock, and next in order follow those that have recovered from the first attack. They also must have been originally less disposed. In the third place, there will be a certain number of individuals born after the first attack. These, of course, will suffer in the same proportion as the first time. Now two different suppositions arise which we will grant originally to be equally probable: the survivors of the first epidemic may have been rendered more predisposed to the disease, or less so.

In the first case, however, the returning epidemic will certainly reap a greater harvest than in the second. It will return earlier and therefore oftener within a given time and at each attack find a sufficiently disposed medium, so that the daily rate will remain high. Even the naturally nonsusceptible undisposed will at length suffer by the constantly repeated attacks and the species may die out altogether. Or by the sharp and rapid selection a perfectly immune residue may at last be left to represent the species. The epidemic then finding nothing more to attack must die out. It has destroyed itself. But whether parasite or host be victorious, at any rate in this case the battle will be decided quickly and must end with an early disappearance of the parasite.

The other case is more favorable to the disease. If the survivors of the first epidemic are less disposed on the return of the disease its harvest will certainly be smaller and the disease will also return later. Having deteriorated the medium it will be unable to hold its own until a new and disposed generation in sufficient number has sprung up. That means a respite for the host and thus a more lasting symbiosis of the two species can be evolved. There will be room in the world for both—for a certain time at least. The disease will lose in frequency, it will lower its own daily rate, until both species have adapted themselves to each other and the daily rate has fallen to that constant or moderately variable limit which secures the relatively best standard of existence to both species. This daily rate evidently is represented by the rule formulated above, which only meant the mathematic expression of a balanced or uniformly prolongable state. As an example let us imagine the Faroe islands larger and more thickly populated. Then the great epidemic of measles would not have ended. It would have found sufficient ground in the rising generation and would have smoldered on, as it were, creeping from place to place. A small epidemic would have remained behind with a normally low daily rate attacking mostly young children; in short, an epidemic such as is known in all large cities.

We have shown an apparent advantage to favor those contagions that happen to possess the faculty of leaving each time a protection against fresh infection behind them. They only can prolong existence and remain attached to the host-species

which suits them. It may be noted that this may serve as a kind of explanation how what is called "acquired immunity" must be developed by natural selection. The quality of forming protective substances, antitoxins, is useful to the parasites. They must be provided with it so as not to perish speedily by their own conquests. However to contagions of long duration and low energy this quality is useless. It may even be harmful in certain cases because the culture-medium of a thin population might easily be too far rarefied by immunization. It is again therefore no casual coincidence that the short and highly infectious contagions most markedly possess the immunifying quality. Also, it appears that tuberculosis in this respect does not answer to the description of a highly infectious disease. For it seems rather to cause a slight predisposition and the tuberculus that ought to produce immunity have been unsuccessful.

If a certain stability was said to take place in those cases which we described as lasting symbiosis, we did not mean to affirm that in truth the battle between host and parasite had come to an end. The fight only assumes a far slower pace, but it will go on, as in the other cases, by the means of selection and consecutive adaptation. So long as the bearer of parasites is sick, so long as he suffers the least disadvantage in the struggle of existence or forms a *locus minoris resistentie*, so long the war will be waged, at last I suppose in a quite latent manner, until finally the host-species has completely shaken off the parasite or until the latter, finding none but unattackable individuals, has been modified to indifference and perfect harmlessness. Thus clinical pictures may run through the stages of rise, of normal existence, and of decline.

We may then surely hope to shake off tuberculosis in the future, because an automatic process in nature aims at this end. We now ask what we ourselves can do to advance this process practically and hasten the result so far as possible. Disinfection and isolation seem only to lengthen the fight, as we have seen above. When they are successful they probably only prepare new vantage ground for the enemy. Of course I do not intend to protest against this medical work which is dictated by humanity. Tuberculosis sanatoriums minister to the welfare of sick individuals, and that gives them the right to exist, even if it should be proved that in so doing they depress the standard of public health. But on the other hand it should not be thought that whatever benefits the individual must also serve the ends of the species. On the contrary, these two purposes may be placed, and are probably most frequently placed, in opposite directions. But even if both were situated in the same quarter, it would be wrong to lose sight of the further end completely while striving to attain the nearer. Let us not be deceived: Tuberculosis sanatoriums with regard to the hygiene of healthy humanity are no better than a remedy given *ut aliiquid factum esse videatur* (for the sake of appearances). Public health could doubtless be most quickly and thoroughly improved if we could discard all thoughts of humanity and work on the plan of the ancient Spartans or certain modern savages, who simply put to death all invalids. Such forcible methods are forbidden to civilized man, but their effect is sure enough, as we may observe in domestic animals and cultivated plants, any propensity to disease in these we are able to eliminate quickly—evident proof how mistaken it is to identify the welfare of the species with that of the individual. From a high point of view in social science we ought rather to be thankful that nature so often frustrates our medical efforts. For if in future we succeeded in really prolonging the life of a great percentage of tuberculous patients for many years more than today, the public standard of health would be depressed in the same proportion, and even in a growing proportion if we take into account the strong tendency of these patients to premature puberty and fertility. The struggle against the disease would undoubtedly be lengthened. We do no harm to the epidemic itself by curing as many patients as possible, though just now that may seem an expedient enforced by necessity for want of something better. What we need is a more general measure, one that will not increase but lower the number of predisposed individuals.

The true struggle against tuberculosis must take in hand the healthy, and in the first line the children. They should

be strengthened from birth and educated toward natural immunity. The history of medicine records one glorious example of an epidemic that has been warded off from entire nations only by prophylactic measures used by the healthy. We mean, of course, vaccination against variola. The vaccinated European living amid smallpox epidemics in foreign lands needs no isolation, no disinfection. No fewer germs enter his body than before Jenner's day, but the intruding germs are unable to develop. Will the study of bacteria in the future provide us with a remedy that will artificially prevent the outbreak of tuberculosis? That this is possible, must without doubt be conceded, notwithstanding all our deductions and rules. But if these are valid, they certainly justify us in declaring it to be highly improbable, and we must guard against counting too much upon it. Nevertheless in science often enough the unexpected has come true.

But even if this hope should be realized tardily, or not at all, if we enter the lists only with the weapons hitherto known, even if we had simply to leave the issue to nature, we need not despair of ultimate victory. Observing how the broad masses of our countrymen sin against every rule of health, in what a wretched state most children are brought up, it must be confessed that with the simplest measures of hygiene infinitely more might be achieved to strengthen our position of defense and to snatch countless victims from the disease. This is not the place to enlarge on the details of the problem. But if we build houses where tuberculosis may perhaps be cured, we should not shrink from pulling down houses where tuberculosis most certainly is bred. The entire rising generation ought to be trained from birth upward to the use of fresh air, bathing, sunshine, and breathing-gymnastics. These things could, with a minimum of expense, be utilized everywhere and for everybody. For the prophylactic treatment of the species they might still work wonders. The public opinion and, we grieve to say, even the medical opinion, is still greatly wanting in the proper comprehension for this subject, which has little relation to the true medical art. Widespread time-honored prejudices, deeprooted sins and abuses will have to be removed. Such progress can only be achieved slowly and by severe struggles.

But there lies the road along which never-failing nature herself leads us. Every individual dwelling must be converted into a sanatorium; that is the problem. Then tuberculosis will retreat faster and vanish sooner than if we placed a hospital at it beside every house.

NOTE.—After this essay was completed I found that part of the views it contains, but not the leading idea, had been anticipated. Adolf Gottstein, in several papers and in a little monograph, entitled "Allgemeine Epidemiologie," arrives at very similar conclusions. His work, which bears on the whole subject of epidemics, is based on ample statistic evidence. By a curious coincidence I have in some places chosen almost identical expressions, though I had never read his publications. To any reader of German interested in the subject I would particularly recommend the book. I may add, that if I had known it before, a considerable part of the essay might have been left unwritten.—C. du B-R.

Additions to Rutland Sanatorium Recommended.—The Massachusetts State Board of Charity in its report submitted consequent to an investigation concerning the need of an additional sanatorium for the treatment of tuberculosis in that State, recommends that before any definite action is taken toward establishing a new sanatorium the Rutland institution be completed and perfected by the addition of a probationary department, to consist of four simple brick cottages two stories in height accommodating not more than 35 patients each, these to be erected either on the grounds of the institution or within the town limits of Rutland. A moderate charge may be made for the board and treatment of such patients. The existing law, however, makes adequate provision for those who are unable to pay for their support. It is also recommended that in addition to the two examining physicians of the institution other physicians be appointed by the governor and council in all cities and towns of 15,000 inhabitants or over. These physicians shall be authorized to make preliminary examinations of all applicants and to furnish a report thereon to the chief examiners for their consideration and action. The several counties of the State, or two or more counties in combination, should be required by law to provide for the institutional care of all advanced cases of tuberculosis occurring in patients residing within their respective limits. However, any city or town establishing a sanatorium for the treatment of tuberculosis among its own citizens shall be exempted from the operation of such a law and from contributing to the establishment and maintenance of such a county institution.

THE WORLD'S LATEST LITERATURE

Boston Medical and Surgical Journal.

January 22, 1903. [Vol. CXLVIII, No. 4.]

1. Vaginal Celiotomy: Its Scope and Limitations. J. RIDDLE GOFFE.
2. A Case of Acute Pancreatitis, and Necrosis of Fat Tissue; Laparotomy; Drainage; Death Nine Days After Operation; Autopsy. GEORGE H. MONKS and DAVID D. SCANNELL.
3. Cerebral Syphilis. ALBERT E. BROWNRIGG.

1.—Vaginal Celiotomy.—There are two vaginal incisions through which we may reach the pelvic cavity, one posterior to the Douglas pouch and the other anterior to the cervix, separating the bladder from the uterus. The anterior incision possesses all the requisites of an exploratory incision, being free from danger, giving facilities for gaining the desired information, and opportunity for completing such surgical procedure as may be indicated. For incision and drainage of pelvic abscesses, the anterior method is rarely used, the opening being made posterior to the cervix or in the lateral sulci of the vagina. The indication for this is large pelvic abscesses in patients acutely ill, and in those prostrated by long-continued suppuration. Goffe emphasizes the necessity of having an incision sufficiently large to afford ample drainage, and the importance of avoiding any cutting of the uterosacral ligaments so essential in retaining the uterus in position. He believes that any cancer of the uterus that cannot give a fair prospect of cure by vaginal hysterectomy would better be left alone. He also believes in the principle that the uterus is supported exclusively by its ligaments, and that the ligaments alone are the proper tissues to utilize in restoring and maintaining a displaced uterus in its normal position; that these ligaments, either round or uterosacral, should be operated upon by vaginal incision, and that at the same time all ordinary complications, such as diseased appendages, etc., can be satisfactorily treated through the same incision. This is his experience. He has had 150 cases of displacement of the uterus, and no operation has given such universal satisfaction as shortening the round ligaments through vaginal incision. Goffe also advocates vaginal incision for removal of tumors and, wherever possible, prefers myomectomy to hysterectomy. The latest application of anterior vaginal incision is the relief of cystocele. The reason that operation for cystocele has so often been a failure, is the fact that the principle invoked is that of support from below rather than suspension from above. Goffe describes a procedure in which the bladder is attached high up on the broad ligament and anterior surface of the uterus with very satisfactory results. He asserts that the vaginal method lends itself to every form of conservative work; it requires patience, experience, and skill, and while the general surgeon will scarcely be expected to perfect himself in the technic of this line of work, there is every reason why the gynecologist should. [w.k.]

2.—Acute Pancreatitis with Fat Necrosis.—Monks and Scannell report the case. A woman of 40 had suffered two attacks similar to the present one, three and five years ago. The most marked symptoms were nausea, vomiting, constipation, epigastric and right hypochondriac pain, distended abdomen, temperature slightly elevated, pulse rapid and weak, and threatened collapse. These symptoms persisted for about four weeks, with varying intensity, but on the whole there was an improvement. A sudden exacerbation, together with the presence of a tender mass in the region of the left kidney, induced lumbar laparotomy. From the wound a dark-green necrotic fluid mass escaped; there was no perirenal fat. Examination of the fluid showed it to be necrotic fat. Death resulted and a necropsy showed the pancreas and left suprarenal disintegrated by a process of fatty necrosis. Attention is called to the following: The previous existence of two attacks, presumably due to gallstones, the connection of which with a subsequent pancreatitis is rendered probable by constantly accumulating evidence. The extension of the fat necrosis toward the left adrenal and kidney, emphasizing the value of posterior drainage in such cases. The possible importance of the destruction of the adrenal in producing the fatal issue. The negative results of bacteriologic examination in extensive necrosis of the pancreas and fat tissue. [A.B.C.]

3.—Cerebral Syphilis.—Brownrigg suggests that syphilitic lesions are determined to the brain by worry, shock or irritation from intoxicants in the same way as to other tissues by external injuries and accidents. He classifies these lesions as gummatous periarteritis, gummatous meningitis, obliterative endoarteritis, and the postsyphilitic degenerations, locomotor ataxia and paresis. The diagnosis often is very difficult from the innumerable series of combinations of functional impairment. The chief points that help to suspicion of the disease are headache, vertigo, nausea, vomiting, optic neuritis, cranial nerve palsies or paralysis, apoplectic attacks or more gradual attacks of somnolence or coma with partial hemiplegia, irritability and general mental failure, polyuria and polydipsia, marked remittent character to all symptoms and their changeability. The usual time of onset is about the third year after primary infection. It has occurred as early as the first month. In such cases antisyphilitic treatment is apt to be more successful. If there has been hemiplegia, with much cerebral degeneration, some of the results will ever after remain. If the symptoms are arrested when simply caused by pressure from exudation about a nerve or center nearly complete recovery may be looked for. Mixed treatment should begin in the secondary stages and be continued to the end of the third year. When cerebral symptoms occur very large doses of iodids must be given. [H.M.]

Medical Record.

January 24, 1903. Vol. 63, No. 4.]

1. A Contribution to the Pathogenesis of the Uremic State; the Probability of Its Physico-electric Substratum. HEINRICH STERN.
2. Reasons for Believing that the Only Way in Nature for Yellow Fever to Be Contracted by Man is from the Mosquito. JOHN W. ROSS.
3. Ankylosis of the Crico-arytenoid Articulation, Due to Acute Inflammatory Causes. D. BRYSON DELAVAN.
4. The Relations and Treatment of Follicular Conjunctivitis and Trachoma. ELLICE M. ALGER.

1.—Pathogenesis of the Uremic State.—Stern reviews various theories. Recapitulating the various points dwelt upon, makes it evident that uremia is founded on diminished electrical conductivity of the serum, or at least that this is a potent factor. None of the retained products of metabolism is toxic to any degree. The higher molecular concentration of the serum is due to these. The convulsions originate in the psychomotor centers. The hyperosmotic condition of the blood and liquids in the brain may occasionally stimulate the attack, but there is no analogy between the degree of concentration and the intensity of the process, nor between the degree of freezing point depression and the amount of retained nitrogen. In uremia large amounts of retained albuminous derivatives exhibit potent nonelectrolytic qualities. These interfere with ionization and retard ionic movement, lessening electric conductivity of the watery liquid in which the electrolytes are contained. The ions participate in augmenting osmotic tension and in depressing the freezing point; the excessive osmotic pressure of uremic serum is due to its neutral molecules. Determination of the freezing point discloses high molecular concentration, but not the degree of electric conductivity. Dissociation of electrolyte molecules occurs in the ratio of the dilution of the watery solution. Intravenous injection of water dilutes the serum so that it exhibits greater conductive properties. Conductivity is more readily established in uremia from parenchymatous than from interstitial nephritis, on account of smaller amounts of retained nitrogen. The reduction of the temperature in uremia contributes toward the reduction of conductivity. [H.M.]

2.—See *American Medicine*, Vol. IV, No. 25, p. 961.

3.—Ankylosis of the Crico-arytenoid Articulation, Due to Acute Inflammatory Causes.—Delavan says nothing is more common than to find a case of laryngeal ankylosis mistaken for one of paralysis. This is not strange since in many cases there is little or nothing to enable one to differentiate between fixation of one crico-arytenoid joint and a true paralysis of the muscles controlling its movements. Diagnosis must often rest upon a process of exclusion. The author reports several cases under the following captions: Acute laryngitis, temporary fixation; phlegmonous pharyngitis causing unilateral crico-arytenoid ankylosis; unilateral ankylosis follow-

ing diphtheria; complete ankylosis of right crico-arytenoid articulation following typhoid ulceration of the larynx; bilateral fixation following typhoid fever. An acute inflammatory process of short duration may result in only temporary fixation, but if the process is of longer duration fixation is apt to be permanent. In five of the six reported cases the fixation was unilateral; in the sixth it was bilateral and the continuous wearing of a tracheal cannula was necessary. No known treatment is absolutely curative; respiratory gymnastics and a climate which is unirritating to the upper respiratory tract is advised, together with the quick abortion or control of colds, nasal disturbances, etc. Prophylaxis of course consists in quickly controlling any causative inflammatory process. [A.B.C.]

4.—Follicular Conjunctivitis and Trachoma.—The regulations excluding immigrants and refusing school privileges to children make it very important to distinguish carefully between these two diseases. Most differential descriptions are useless for clinical purposes. The essential feature of trachoma is the hypertrophy of the conjunctiva. Without this there can be no development of scar tissue, and the disease is a trivial one. The occurrence of lymphoid masses, indistinguishable from those of folliculitis, should be considered as an epiphenomenon and not an essential part of the disease. The subjective symptoms of real trachoma are noticeable. Folliculitis gives no subjective symptoms, is in many cases noncommunicable, disappears eventually, with or without treatment, and leaves no trace behind unless mistakenly treated with caustics for trachoma. In both diseases Alger uses ichthyol 1 cc. (mxv), tincture of iodine 4 cc. (f3j), glycerin 30 cc. (f3j) three times weekly, with zinc sulfate solution on alternate days at home. [H.M.]

New York Medical Journal.

January 17, 1903. [Vol. LXXVII, No. 3.]

1. An Address on Chemical Pathology; the Field of Greatest Promise in Pathological Research. G. W. McCASKEY.
2. Anterior Transplantation of the Round Ligaments for Displacements of the Uterus. ALEXANDER HUGH FERGUSON.
3. Intestinal Indigestion and Its Relation to Arterial Sclerosis and Renal Disease. LEONARD WEBER.
4. "The Mechanics of Flat-foot," Causative, Preventive, Curative. EDWARD M. THOMPSON.
5. Topical Bloodletting as a Derivative and Repulsive Remedy in Congested and Inflamed Hemorrhoidal Bloodvessels and Tumors and in Other Affections. WILLIAM BODENHAMER.

1.—Chemical Pathology.—McCaskey outlines the evolution of chemical pathology and calls it the third great era—the chemical era—in the development of the science of pathology. He says that chemical pathology rests upon the foundations of cellular pathology and bacteriology; cell structure and function are none the less important—the pathogenic relations of certain microorganisms none the less certain—because the ultimate problems of disease have been transferred, as he believes they have, to the realm of physiologic chemistry. He starts with the fact that the various morbid processes produced by pathogenic organisms are the result of chemical products formed by them in their life history. He refers to the phenomena of suppuration—that the real pathogenic factor is chemical in its nature; and to the proteid substance, leukocidin, produced from *Staphylococcus pyogenes*, which if heated to 58° C. (136.4° F.) loses its leukocidal power. He then takes up the chemical attributes of the blood serum and states the fundamental principles of Ehrlich's theory, which he believes explains the phenomena of infection and immunity better than any theory which has thus far been presented. [C.A.O.]

2.—Transplantation of the Round Ligaments.—Ferguson describes and gives cuts illustrating his operation of anterior transplantation of the round ligaments for displacements of the uterus. After making a median incision through the abdominal wall, the lower angle of which reaches the suprapubic fold, he dissects the fat and skin from the anterior sheath of the rectus muscle on either side of the abdominal incision, corresponding to its lower third. He then makes a stab wound through the rectus muscle an inch from the median incision and 1½ inches from the pubic bone. Through this wound he grasps the round ligament and a portion of the broad ligament beneath it, near the uterus, with artery forceps. To prevent bowel complications he passes a continuous suture along the

parietal peritoneum from the puncture downward to the side of the bladder, and back posteriorly to the round ligament near the uterus. When the suture is tied, an anteroposterior partition of folded peritoneum is thrown between the iliac and bladder regions on each side. In some cases he sutures the round ligament to the parietal peritoneum for the same purpose. He then drags the proximal end of the round ligament through the rectus muscle and sews it and the subjacent portion of broad ligament to the anterior sheath of the rectus muscle, leaving a stump about half an inch long between the parietal peritoneum and uterus. The other side is dealt with in the same manner. The author claims a wide range of application for this operation, and says there is no interference of physiologic function. [C.A.O.]

3.—Intestinal Indigestion.—Weber reports three cases of chronic intestinal dyspepsia to show their possible relation as an exciting feature to subsequent arterial and renal sclerosis. He also believes that cholera infantum and similar acute and subacute gastrointestinal dyspepsias of children are frequently complicated and even terminated by acute nephritis, and says that if ptomaines and other toxins can do this in acute cases, why should not similar poisons chronically supplied insidiously produce renal changes of a chronic nature and more of the intestinal form of inflammation? From observations he concludes that iodids given in relatively small doses three or four times daily, and continued for many months and even years, have the power to retard, modify, and improve subacute and chronic inflammatory processes concerning the connective tissue of parenchymatous organs like the kidneys, the liver, the lungs, and particularly so the sclerotic disease of the arterial vessels. [C.A.O.]

4.—The Mechanics of Flat-foot.—As causative factors in the production of flat-foot Thompson mentions rheumatism, rachitis, paralysis, general muscular weakness, traumatism, direct or indirect, all of these causes being aggravated by body weight, prolonged standing or walking, and improper positions of the feet while on them. He believes that standing and walking with the feet at an angle of 90°, as is usually taught, increases the tendency to flat feet by throwing the center of gravity inside the apex of the plantar arch, causing mechanically a valgus or abduction and eversion of the foot. Many times a weakened arch may be rescued by directing a proper use of the feet—first by educating our patients to use the heel-and-toe method of walking, with the feet parallel rather than on diverging lines, and when running or jumping to catch the weight on the front of the foot and not on the heels. In very mild cases the deformity can be readily overcome and the pain relieved by means of adhesive plaster straps of sufficient length to reach in a spiral course to the knee. To reduce the deformity grasp the foot firmly and extend it sharply on the tarsus (this increases the space between the internal cuneiform and the astragalus). Then forcibly invert and adduct the foot and flex it again to 90°, maintaining the adducted and inverted position. In aggravated cases we may use a gradual correction by means of properly-applied braces; or a rapid correction under anesthesia with plaster-of-paris. The author believes the latter to be the more satisfactory. He describes an ankle brace which he has used with great success which is constructed with the object of throwing the center of pressure on the foot in such a way as will permit the parts to return to their normal relations in a natural manner. [C.A.O.]

Medical News.

January 24, 1903. [Vol. 82, No. 4.]

1. Cases Illustrating the Therapeutic Uses of the Röntgen Rays. SAMUEL BERESFORD CHILDS.
2. Subphrenic Abscess as a Complication of Appendicitis. HENRY A. CHRISTIAN and LOUIS C. LEHR.
3. A Consideration of the Scientific Application of Mechanical Vibratory Stimulation in the Treatment of Disease. MAURICE F. PILGRIM.
4. Tonsillitis Classified as an Infectious Disease. WALTER SANDS MILLS.

1.—Cases Treated by Röntgen Rays.—Childs, of Denver, reports a series of 14 cases treated by Röntgen rays. Six were of epithelioma; all were cured or still under treatment with such improvement as to warrant the expectation of complete cure. Three were of lupus erythematosus; all were cured. One

was of tuberculous glands of the neck; improved, but still under treatment. One was for secondary carcinoma of the spine and recurring nodules after complete excision of the breast; much relief from pain by the treatment, but the disease resulted fatally. One was of tuberculosis of the apex of each lung; the patient is improved and is still under treatment. One case of chronic eczema completely recovered. One case of Hodgkin's disease appears to be improved, and is still under treatment. [A.B.C.]

2.—Subphrenic Abscess as a Complication of Appendicitis.—Christian and Lehr state that in a collection of autopsies numbering 4,028 the cause of death in 86 was acute appendicitis, and in these 86 cases 7, or 8.13%, showed a purulent process in the subphrenic region. The authors cite the findings of many others who have contributed to this subject. They report 7 cases of subphrenic abscess following or complicating appendicitis. The histories are at some length. Of the 7, 5 were males and 2 females; the youngest was 11 and the oldest 50. The affection was unilateral in six instances, four times on the right and twice on the left, and bilateral in one instance. In four of the cases the process had extended from the subphrenic region into the pleural cavity, though in no case was the diaphragm perforated. Subphrenic abscess secondary to appendicitis may occur in one of four ways: A localized abscess in a general purulent peritonitis; by extension from the appendix to the subphrenic region by an intraperitoneal route, or by the extraperitoneal route; by way of the blood current as part of a general embolic septic process, or as a sequence of liver abscesses which are of embolic origin by way of the portal vein. Originating in either the first or last ways the abscess might equally well appear on either side. [A.B.C.]

3.—Mechanical Vibratory Stimulation.—This is applied for stimulation of the nerve or nerve centers concerned in and controlling the diseased organ, which are found principally in the spinal and sympathetic systems, in order thereby to stimulate and equalize blood currents and to stimulate secretion, excretion and the lymphatics. The tendency of the automatic functions of the body is to maintain equilibrium. Pilgrim has found that mechanical vibratory stimulation powerfully assists in accomplishing this. Results are more prompt and satisfactory than after other methods of treatment in neurasthenia and other nervous disorders, in ocular affections dependent on anemia or hyperemia, in goiter, in scoliosis, pelvic diseases (exclusive of pus sacs), in functional disorders of the digestive organs, pruritus, varicose conditions, indolent ulcers, incipient tuberculosis, subacute rheumatism and neuralgia. [H.M.]

4.—Tonsillitis as an Infectious Disease.—Mills believes this is more detrimental in the school-room than parasitic skin diseases, although not excluded by the departments of health. One attack predisposes to another. There is a definite period of incubation. Instead of being a local disease with severe constitutional symptoms, it seems rather an acute infectious disease with local manifestations. The onset is similar to that of other infections. The patient is prostrated out of all proportion to the local manifestations. Simple catarrhal tonsillitis, follicular tonsillitis, and quinsy are successive stages of the same disease. The patient should be isolated at once. At the onset aconite is indicated. With high fever, bounding pulse and intense congestion, a 1% solution of belladonna is the best remedy. In follicular tonsillitis phytolacca is almost specific in drop doses of a 1% solution every 1 or 2 hours, according to the severity of the case. [H.M.]

Philadelphia Medical Journal.

January 24, 1903. [Vol. XI, No. 4.]

1. Tropical Diseases: Introductory Lecture in a Course on Tropical Diseases, etc. CHARLES F. KIEFFER.
2. An Early Case of Osteitis Deformans. J. C. WILSON.
3. Six Years of Medical Journalism: A Retrospect. JAMES C. JOHNSTON.
4. Spontaneous Rupture of the Heart, with a Report of Seven Cases. ARTHUR S. HAMILTON.
5. Atmospheric Pressure and Epidemic Influenza in Philadelphia. HOWARD S. ANDERS.
6. Legal Tests of Responsibility. RICHARD WEBB, Esq.

1.—Tropical Diseases.—This is an introductory lecture in a course on tropical diseases which is being delivered by Kieffer,

at Jefferson Hospital. Tropical medicine and practice is divided into diseases of the native and of the Anglo-Saxon settler. The native, as a rule, is underbred and underfed, hence when affected by disease the mortality is higher. The etiologic factors that especially obtain in diseases peculiar to the tropics are heat, infections and diseases conveyed by parasitic hosts, of which there is a large representation in medicine. The tropical phases of infection, immunity and acclimatization are discussed. [F.C.H.]

2.—Osteitis Deformans.—Wilson reports an early case of osteitis deformans (first seen by him three months ago), which increases the list of reported cases in this country to 17. The patient was a female of 50, who complained of persistent pain and tenderness in the right thigh. The bone involved was the lower end of the right femur. The case is of interest because it was of rapid development and involved at the time of observation a single bone and was attended with great and persistent pain. The patient now complains of pain at the lower end of the left femur, and is obliged to use a rolling chair. The case is made a matter of record in order that, if the opportunity should occur, its future course may be noted as a contribution to the clinical history of this strange malady. [F.C.H.]

4.—Spontaneous Rupture of the Heart.—Hamilton details the etiology, pathologic anatomy, symptoms, diagnosis, prognosis, and treatment of spontaneous rupture of the heart. He reports seven cases in detail, representing all those known to have died of spontaneous rupture of the heart out of a total of 1,693 deaths occurring among the patients at the hospital for the insane at Independence, Iowa. The diagnoses were all verified by an autopsy. An eighth case is added. [F.C.H.]

5.—Atmospheric Pressure and Epidemic Influenza in Philadelphia.—Anders concludes as follows: As in the case of the investigation of sunshine percentage the behavior of atmospheric pressure in relation to epidemic influenza is characteristic in the marked lack of equability; in the absolute daily (sometimes almost hourly) extremes and not in the monthly or yearly averages or means. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

EDITORIAL COMMENT

The association of chronic obliterative pericarditis with ascites has recently attracted some attention. Distinguished from the more usual cases of chronic obliterative pericarditis, which either run their course entirely devoid of symptoms, or sooner or later manifest themselves by the ordinary symptoms of disturbed or impeded circulation, there occurs a class of cases characterized clinically by marked ascites with little or no edema of the legs. In these cases the diagnosis of cirrhosis of the liver is usually made, but the necropsy discloses chronic obliterative pericarditis and certain morbid changes in other tissues and organs—notably, pleuritis, peritonitis, perihepatitis, red atrophy of the liver, cirrhosis of the liver, etc.—whence the designation "pericarditic pseudocirrhosis of the liver" suggested by Pick,¹ who first directed marked attention to the subject. Although the subject had attracted some attention in Germany, the only cases reported in this country, until within a year, are those reported by Osler² and by Cabot.³ During the past year cases have been reported by Herrick and by Becker, and a detailed study of the subject has been undertaken by Nicholls⁴ and by Kelly.⁵ The number of cases reported is less than 45, including several doubtful cases, but that the condition is probably much more common than might appear at first sight, is suggested by the fact (among others) that two of the cases—those reported by Ewart⁶

¹ Zeitschrift für klinische Medizin, 1896, xxix, p. 385.

² Archives of Pediatrics, 1896, xlii, p. 3.

³ Boston Medical and Surgical Journal, 1898, cxxxviii, p. 463.

⁴ Studies from the Royal Victoria Hospital, Montreal, 1902, 1, No. 3.

⁵ American Journal of the Medical Sciences, Jan., 1903, cxv, p. 116.

⁶ British Medical Journal, 1899, 1, p. 908.

and by Kelly—were operated upon for the cure of a supposed cirrhosis of the liver. The causation of the disproportionate ascites has occasioned much discussion, being attributed on the one hand to changes in the liver, the result of long standing congestion, and on the other, to a chronic peritonitis or perihepatitis. With adducing the reasons for the one or the other opinion, it is at least suggestive that most of those who recently have studied the question attribute the ascites to the alterations in the peritoneum; thus, inasmuch as there is associated disease of the precordium and peritoneum, frequently also the pleura, the symptom-complex is a manifestation of multiple inflammation of the serous membranes, a multiple serositis.

The clinical recognition of the condition commands especial interest from a practical point of view. As pointed out by Kelly this may be possible in certain cases by directing special attention to the history of a previous attack of acute pericarditis; to the early occurrence and subsequent disappearance of edema of the legs; to the marked ascites with little or no edema of the legs; to the enlarged liver early in the course of the disease (in some cases the liver appears not to have been enlarged), and to the small and distorted but otherwise normal liver in the later stages of the disease; to the absence or very late occurrence of marked enlargement of the spleen; to the tendency to the occurrence of repeated attacks of pain, tenderness, rigidity and, possibly, palpable and audible frictions in the right hypochondriac region—attributable to attacks of perihepatitis; to the rapid occurrence of the ascites after tapping (Rumpf's¹ patient was tapped 301 times); and to the physical signs of adherent pericardium—without which, it may be said, the disease is incapable of diagnosis. From cirrhosis of the liver, which it most resembles, this obliterative pericarditis with ascites may be distinguished by the symptoms and physical signs of adherent pericardium; by the absence of the etiologic factors of cirrhosis of the liver; by the slow, insidious, protracted and intermittent course of the disease; by the long periods of standstill during which the ascites may remain stationary and the patient in good condition; by the entire absence or transient presence of slight jaundice; by the absence in most cases of portal congestion and gastrointestinal disturbances—hemorrhages, diarrhea, hemorrhoids, enlargement of the spleen, marked dilation of the superficial veins of the abdominal wall, etc.; in some cases, by the association of an enlarged, smooth and firm liver, with marked ascites; and by the fact that in many cases the patient survives a large number of tappings. The symptom-complex is of extreme interest and will well repay careful study, which doubtless will lead to the correct clinical interpretation of symptoms now perhaps too hastily put down to cirrhosis of the liver.

REVIEW OF LITERATURE

The Importance of Hyalin Casts in the Diagnosis of Renal Diseases.—Defendorf² reviews the literature on this subject and gives statistics to show how frequently casts are found in apparently healthy persons. He concludes that hyalin casts, particularly in individuals past middle life, are of no clinical significance. However, it was found that nephritis is much more prevalent at this stage of life than is commonly supposed. This is especially true of the insane; in one institution as many as 57% of the inmates suffered from chronic interstitial nephritis. The origin of casts is still in doubt. Hyalin casts may occur as the result of chronic passive congestion of the kidney. If this condition can be eliminated one must seek the cause of hyalin casts in one of the four forms of chronic nephritis, which are chronic parenchymatous nephritis, chronic interstitial nephritis, chronic diffuse nephritis, and senile interstitial nephritis. In the first form of this disease hyalin

casts are rarely found alone but are accompanied by finely granular, waxy, and sometimes fatty casts; albumin is usually present, while the total quantity of urine and of solids is reduced. Hyalin casts, when alone, are most characteristic of the first stage of chronic interstitial nephritis; with them is seen an increase in the quantity of urine and a decrease of the specific gravity and the amount of solids. In the diffuse form of chronic interstitial nephritis hyalin casts are rarely seen alone, but are associated with considerable amounts of albumin. Finally, hyalin casts with or without the faintest trace of albumin may be the only distinctive symptom of senile interstitial nephritis. [W.E.R.]

Notes on Aneurysms.—Satterthwaite¹ reports 11 cases of aneurysm, seen postmortem, giving clinical data and conclusions. He believes that syphilis is the most frequent cause of aneurysm, though it is difficult to prove this from statistics. His experience shows that in thoracic and abdominal aneurysms the diagnosis is made in only one-fourth of the cases. One conclusion is that the larger aneurysms of these types have thus far baffled the best efforts of modern surgeons and that medical treatment has at least insured a longer lease of life and offers greater chance of cure if treatment be undertaken early. In the treatment the first consideration is rest, the second restriction in food and drink, the third cardiac sedatives. [A.G.E.]

Adiposis Dolorosa.—Dercum and McCarthy² report a case of adiposis dolorosa with necropsy and the results of a chemic study of the fat by Edsall. Among the interesting findings were an adenocarcinoma of the pituitary body and the presence of new-formed hemolymph glands in the subcutaneous fat. The thyroid presented few or no changes (in contradistinction to four cases previously reported by Dercum and by Burr). It is said that just what the role of the thyroid gland in this disease is is problematic, though the changes so far detected being atrophic, suggest that they may be related to the excessive production of fat. On the other hand, the marked changes in the pituitary body are suggestive, especially in view of the interrelationship that exists between the thyroid and the pituitary bodies. The pituitary body is thus brought into relation, though perhaps indirectly, with a fat-producing or fat-destroying function—a relation which, up to this time, has not been considered. The fact that the thyroid gland has been found diseased in every one of the five cases coming to necropsy cannot but be of significance. Thus far 28 cases have been reported. [A.O.J.K.]

Mouth as an Index of Health.—A suggestive article on this subject is contributed by Magee,³ a dentist, who believes that physicians might profit materially by more often consulting the dental specialist. Fifty years ago the dentist was little better than a tooth carpenter. Today his education, in our best schools, fits him to give advice. There are still a few physicians who believe that the dentist's sole mission is to extract teeth and make artificial substitutes. Primarily these are his duties, but he has been obliged to meet the demands of necessity and urgency by giving attention to various lesions in the oral cavity. These lesions are often discovered by the dentist when overlooked by the physician. The significance of caries and changed oral secretions is detailed. [A.G.E.]

Difficulties and Errors in the Diagnosis of Appendicitis.—Cumston⁴ discusses the different abnormal situations of the appendix, the classical symptoms of appendicitis, and reports a number of cases in which the diagnosis was difficult. Reference is made to the suggestiveness of left-sided pain which is believed to be due to a transposition of the cecum and appendix or to a long appendix reaching to the left iliac fossa. There are a few words relative to operative technic. [A.O.J.K.]

The Results of Dr. Garnault's Experiments.—Garnault⁵ gives the report of the Pasteur Institute on the nodule removed from his arm November 12, by Tuffier, this nodule having developed at the place where a fragment of the tuberculosis liver of a cow was inserted under the skin July 13. Three guineapigs were inoculated with a part of the nodule, and by

¹ The Postgraduate, December, 1902.

² American Journal of the Medical Sciences, cxxiv, 994, 1902.

³ Maritime Medical News, December, 1902.

⁴ American Journal of the Medical Sciences, cxxiv, 243, 1902.

⁵ Gazette Medicale de Paris, December 20, 1902.

¹ Deutsches Archiv für klinische Medizin, 1895, xv, 272.

² Yale Med. Journ., December, 1902.

the day of the report (December 15) had developed marked lesions of tuberculosis. Microscopic examination of the remainder of the nodule showed it to contain typical tubercles. The report concludes by stating the following facts: A fragment of a tuberculous nodule from a cow, inoculated into a human being, has produced a tuberculous lesion limited to the point of inoculation. In this lesion the tubercle bacilli have remained living and virulent for guineapigs for a period of four months after their transplantation. Garnault believes these results are sufficient to contraindicate Koch's statement, and will make no more inoculations. The epitrochlear and axillary lymph nodes were not involved, but as the wound is not yet healed, general infection is still considered to be a possibility. Garnault believes that his athletic constitution and the fact that he ate 400 gm. of raw meat daily, may have been factors in preventing general infection. Legislative measures to protect persons against bovine tubercle bacilli in meat, milk and milk products are considered justifiable. [A.G.E.]

Bothriocephalus latus and the Causation of Primary and Secondary Pernicious Anemia.—Willson,¹ referring to the rarity of infection with *Bothriocephalus latus* in this country, reviews the literature and reports a personal observation occurring in a Russian Jewess, aged 46 years. The case was of interest on account of the presence of two bothriocephali and the enormous lengths of the worms (a total of 82 feet, 3 inches) and over 12,000 segments. The characteristics of the worm are described in detail. There follows a valuable discussion of the nature of primary and secondary pernicious anemia and of the relationship of *Bothriocephalus* to the anemia. [A.O.J.K.]

Elimination in Chronic Nephritis.—Claude² claims that elimination in chronic interstitial nephritis is increased and only diminished in the last stages of the disease, or in consequence of an accidental complication. This is explained by the fact that development of the interstitial tissue determines an increase in the blood-pressure and cardiac hypertrophy, whereby an increased flow of blood to the glomerules is occasioned and also increased functional activity. When later the kidney structure is destroyed by the contracting tissue then the elimination is lowered and uremic symptoms appear. [J.H.W.R.]

A Point in the Prophylaxis of Malaria.—It is claimed by Le Roy des Barres³ that malarial fever should be considered a contagious disease, especially in its acute form, and that malarial patients should, to a certain extent, be isolated. His reason is that mosquitos may carry the plasmodia directly from the patient to others who may be in the same room with him; for example, to an attendant who may sleep in the same room. Isolation should be practised, especially when there is an aggregation of persons, as occurs in the wards of a hospital. [B.K.]

An Unusual Case of Fecal Accumulation.—Salin⁴ reports an interesting case occurring in a female, nullipara, 41 years old. As a child she suffered often colicky pains and from the age of 23 she had been constantly troubled with constipation, which only could be relieved by enemas, often six or seven of those in succession being necessary to obtain result. If she tried to take a laxative she would be violently sick with pains along the left side and vomiting, which would last for several days, her bowels, however, not moving. Curiously enough she suffered in this way only in the winter, in the summer the evacuations being most often voluntary. December, 1901, she noticed in the lower abdomen immediately above and behind the symphysis a tumor the size of a hen's egg, hard, immovable, and not tender, which soon disappeared. A few months later she felt another tumor of about double the size of the first one in the median line about midway between the umbilicus and the symphysis; it was hard, somewhat movable from side to side and growing quite rapidly in size. On examination at the hospital the lower part of the abdomen was found to be entirely filled by a tumor reaching from the symphysis up to three fingers' breadth above the navel, hard, slightly elastic, and somewhat movable, apparently adherent

to the abdominal wall. Uterus and ovaries palpable and plainly not connected with the tumor. The diagnosis of malignant growth of the abdominal wall was made and operation advised. The constipation and intestinal symptoms were ascribed to some adhesion between the tumor and the intestines. Upon opening the abdomen the true and surprising condition of affairs became apparent, the tumor not being situated in the abdominal wall but found perfectly free in the peritoneal cavity, and on closer examination located in the sigmoid flexure. The hardness was less marked, the tumor now distinctly pitting on pressure. It was plainly a case of fecal accumulation of an unusual degree. But no cause of the obstruction could be found. The intestinal walls, especially below the tumor, were thickened and numerous glands, ranging in size from a pea to a hazelnut, were seen in the mesentery. Fearing the presence of a malignant growth in the intestine the gut was resected and end-to-end anastomosis accomplished by means of the Murphy button. The mucous membrane was perfectly normal. No sign of malignant neoplasm. The entire gut was only hypertrophied and considerably distended. The tumor was free in the gut and consisted of a compact, homogeneous fecal mass weighing 2½ kilograms (5½ pounds). Patient made a rapid recovery. Button passed on the fourteenth day. Movements of the bowels have since been spontaneous. [A.E.E.]

Recovery from Suppurative Meningitis Due to the Colon Bacillus.—The case reported by Nobécourt and Du Pasquier¹ was that of an infant of seven months which, following acute gastrointestinal infection with diarrhea and slight fever, exhibited signs of meningitis. Lumbar puncture revealed an increase in the cerebrospinal fluid. All the symptoms then abated, but in a day or two both gastrointestinal and meningeal manifestations became more pronounced. Lumbar puncture then confirmed the diagnosis of suppurative meningitis due to the colon bacillus. Though the symptoms were severe the infant recovered. Lumbar puncture is thought to have possibly been of value. [A.G.E.]

Acute Lymphatic Leukemia Without Enlargement of the Lymph Glands.—Dorothy Reed² gives the results of a careful study of a case of acute lymphatic leukemia without enlargement of the lymph glands, and discusses the nature of the disease. She believes that while we cannot state positively that the lymphocyte of the blood comes from the bone-marrow we have no proof that the lymphocyte comes from the lymph gland alone, and that her case as well as others in the literature go to prove that acute lymphatic leukemia, whether lymphoid or myelocytic, is due to changes in the bone-marrow, the other hematopoietic organs being involved, if at all, secondarily. Thus we have no right to apply the term myelogenous to one form of leukemia alone; on the contrary, she suggests that there are three forms of leukemia, all due to myelogenous changes. These should be known as the myelocytic, lymphoid, and mixed-cell, if we wish to make the blood picture the basis for clinical divisions. Any of these three forms may be acute or chronic; the myelocytic is usually chronic, the lymphoid usually acute. The nature of the disease, the etiology, and the primary focus in the body are believed to be still undiscovered. Leukemia as we know it is simply the manifestation of some poison which affects especially the bone-marrow, the blood-forming organ in the adult, and ultimately proves fatal. [A.O.J.K.]

Transmissibility of Bovine Tuberculosis to Man.—After reviewing briefly the recent discussions and papers concerning the intercommunicability of bovine and human tuberculosis, Köhler³ concludes that neither their similarity, dissimilarity, nor transmissibility from one to the other has either been proved or disproved; more time must elapse and more work must be done before definite statements regarding any of these points can be made. It is much more important to guard against infection from man to man than from cattle to man, however, and it must be our endeavor to prevent such infection in the future as in the past. This is best done by improving the hygiene of the dwellings, factories, and other places where tuberculous people are likely to be. If possible they should be isolated in sanatoria. It is of especial importance

¹ American Journal of the Medical Sciences, cxxiv, 262, 1902.

² La Semaine Médicale, December 3, 1902, p. 400.

³ Gazette Hebdomadaire de Médecine et de Chirurgie, December 25, 1902.

⁴ Hygela, Stockholm, October, 1902.

¹ Gazette hebdomadaire de Médecine et de Chirurgie, December 7, 1902.

² American Journal of the Medical Sciences, 1902, cxxiv, 653.

³ Deutsche medizinische Wochenschrift, November 6, 1902.

that the populace be educated regarding the infectious character of the sputum, as through its means the largest number of cases are probably produced. If milk is sufficiently boiled, and meat of animals presenting extensive tuberculous lesions not offered for sale, there will be but little danger from infection by cattle. [E.L.]

Treatment of Chronic Nephritis.—Porter¹ discusses at some length the surgical and rational or dietetic treatment of Bright's disease. He goes into the histology and physiology of the kidneys, and accepting Metschnikoff's classification, calls the connective-tissue cells "macrophagi"; the epithelia and leukocytes "microphagi." When the work of the kidneys is excessive, the microphagi perform their function properly and without pathologic change, but if the nutritive supply is poor and the work is too great, then the macrophagi gain the ascendancy and there follows structural and functional change. The epithelial structure, or the intertubular tissue may suffer. When the retrograde change is confined to the former, a parenchymatous lesion results, the latter an interstitial lesion. The factors increasing the work of the kidneys and lowering nutrition are (1) the ingestion of more proteids than the system needs; (2) the presence of putrefactive fermentation in the alimentary canal, resulting in the production of toxic proteid elements; (3) the direct or indirect influence of microorganisms causing toxic products. The treatment of Bright's disease must be considered under two headings, that of prevention and that which deals with the disease after it has developed. Porter does not see how surgical interference can in any way remove any of the factors entering into the etiology of this condition. He recommends a well regulated, mixed diet, composed largely of the animal class; hygienic and therapeutic measures designed more to maintaining a perfect digestion and metabolism, and to lowering the work of the kidneys, rather than treatment direct at the pathologic lesion itself. In other words, the treatment should consist of measures to remove the etiologic factors operating to produce Bright's disease, rather than those directed to the treatment of the kidney itself. In this way often a complete physiologic cure can be established though histologically Bright's disease is incurable. [J.H.W.R.]

Osteitis Deformans and Hyperostosis Cranii.—Prince² reports three cases, with especial reference to the clinical features and pathology of the condition. Having reviewed previous communications, he states that we have no sure ground for differentiating hyperostosis cranii from osteitis deformans, and that both are probably trophic disorders. Various clinical and pathologic facts seem to indicate that they are at least allied disorders, and perhaps only different manifestations of one and the same disease. The osteoarthritic changes so commonly found in osteitis deformans are probably manifestations of the disease, and not complications. The results of autopsies thus far made do not at all exclude the nervous system as the seat of the trophic derangement, but the changes that have been found in the spinal cord and peripheral nerves and analogy with other known lesions like those of tabes and syringomyelia suggest a neuropathic origin similar to that of the myopathies. In future cases the nervous system should be exhaustively examined. [A.O.J.K.]

Dysentery Due to Double Infection with Uncinaria Duodenalis and the Ameba Coli.—This interesting case is reported by Ward.³ The patient was an American physician, aged 32, who contracted the disease in the Philippines. Both infections are believed to have been present from the first. Improvement followed treatment, and by March, 1901, when he arrived in the United States, patient considered himself well, the attack having begun in May, 1900. In December, 1901, the disease recurred, and the patient entered the Albany hospital. Ameba coli and uncinaria ova were found in the stools. Oleoresin of male fern and quinin enemata effected an apparent cure. [A.G.E.]

The Diagnosis of Tetany in Early Childhood.—Thiemich's claim that galvanic overexcitability is the most constant symptom present in tetany and in itself is sufficient to diagnose cases of latent tetany during early childhood is

opposed by Ganghofner.¹ Thiemich, basing his statements upon the examination of 28 cases of tetany and of 43 normal children, says that if KOC is present, the current being below 5 milliamperes, a diagnosis of tetany may be made; if a current greater than this is needed the child may be said to be normal. The current need only be applied to one nerve. Ganghofner insists that mechanical irritability is also of great value, and to prove this reports the examinations made upon 50 children afflicted with tetany, employing Thiemich's method in all points; the right median nerve was the nerve examined; 49 of these showed an increase in mechanical irritability, and but 41 obeyed the mandate of Thiemich; but even in these cases the diagnosis was easily made. Therefore as valuable as Thiemich's findings are it must not be said that they only are of value. It is especially at the onset and toward the end of the disease that the symptoms of mechanical and electrical irritability do not always run parallel; sometimes one, and sometimes the other, will be the more prominent; the latter is also present in other nerve diseases, as in hysteria. Some of the nerves are more irritable than others, and it is wrong to depend upon examination of one nerve only. Many of these cases presented laryngospasms and eclamptic convulsions. [E.L.]

The Aims of Postgraduate Instruction in Medicine.—In his address Collins² deals mainly with the problem regarding physicians who come for postgraduate instruction after being in practice for some years. For those who desire a general "brushing up," he would suggest the acquiring of methods of examination, laboratory and clinical, the latter including familiarization with instruments of precision used in diagnosis. Time spent in seeing operations, in hearing teachers talk of disease, and in copying prescriptions, while not entirely wasted, may be spent much more profitably. Laboratory methods of the greatest importance to this class are: examination of the urine; staining of tubercle bacillus; examining cultures of diphtheria bacillus; and examination of the blood. An hour a day for three months will accomplish this. Finally, one of the most important things one learns from a postgraduate medical course is the necessity of going back. The physician who attempts to go on in the routine duties of his work for a longer period than five years is unjust to himself and unfair to his patient. [A.G.E.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

EDITORIAL COMMENT

The subcutaneous injection of paraffin first introduced into surgery by Gersuny, of Vienna, seems to have found many useful applications, judging from the numerous recent publications on the subject. Gersuny originally suggested the use of the injections in filling out facial defects, such as saddle-nose, sunken cheeks left after operation, depressed scars, etc. In a recent paper³ he also suggests the use of injections beneath Thiersch skin grafts in which the color is different from that of the surrounding skin, also in the pits left after bad attacks of smallpox. He has also used the injections in the region of an artificial anus to prevent incontinence of feces, and has injected it about the neck of hernia sacs to produce cure without operation. The desirability of adopting this method as a routine treatment in cases of hernia is very questionable; in large hernias the treatment would certainly not be successful, and it seems unlikely that it would be permanently so in many smaller hernias. On the other hand, it has proved of decided value in filling up defects, as suggested above. In situations in which it is disadvantageous to use hard paraffin, Gersuny has found a mixture of one part vaselin with four parts of olive oil very satisfactory. This mixture can be sterilized by boiling and is half fluid at ordinary room temperature, so that the injection is

¹ Transactions of the Lehigh Valley Medical Association, 1902.

² American Journal of the Medical Sciences, cxxiv, 796, 1902.

³ Albany Medical Annals, January, 1903.

¹ Zeitschrift für Heilkunde, 1902, Vol. xxiii, p. 244.

² The Postgraduate, December, 1902.

³ Zentralblatt für Chirurgie, 1903, Vol. xxx, p. 1.

somewhat more readily carried out than when hard paraffin is used. In injecting into tissues rich in bloodvessels a number of small injections is advised in place of one large injection. It has been found that after injection the vaselin is not only encapsulated with connective tissue, but bands of tissue ramify through it after a short time and hold the mass permanently in place. The danger of embolus from injecting into bloodvessels has been suggested. This can be avoided by introducing a needle and aspirating to determine that it is not in a vein before the barrel of the syringe is drawn full of the fluid for injection. Some who have used the method have reported suppuration with partial discharge of masses of paraffin injected, but it seems probable that if proper antiseptic precautions be taken this will be avoidable. If surgeons would keep the paraffin injection method in mind no doubt many useful applications would be found for this very simple procedure, and in many cases it would be easy to adopt this treatment instead of plastic operations, such as excision of scars, operation for saddle-nose, etc.

REVIEW OF LITERATURE

Infective Arthritis.—Marsh¹ pays tribute to Lister and says idiopathic arthritis, like idiopathic peritonitis, never occurs. Analogy between the synovial membrane of joints and the peritoneum is drawn and the tendency of each, particularly the former, to become involved in the various acute infectious diseases is noted. Thus we have pneumococcal arthritis, gonorrhoeal arthritis, arthritis following typhoid fever, scarlet fever, influenza, erysipelas, glanders, etc. The first group of cases embrace those with transient synovitis with limited effusion. Here treatment by rest, splint, and fomentations gives a good prognosis. A second group comprise those with marked swelling, effusion of fluid into the joint, which may later become turbid and even purulent. Here evacuation of the fluid with free irrigation is demanded. A third group have involvement of the periarticular structures, brawny swelling, skin reddened and shiny, suggesting a near approach to suppuration. This is typified in gonococcal infection. Here the disease runs a long and tedious course as a rule and prognosis should be guarded. A fourth group includes those in which the arthritis from the first is acute and destructive. Suppuration is early, destructive, and violent. This is typified in pneumococcal arthritis. Even under radical treatment the prognosis is unfavorable, for the suppurative arthritis is but one of the manifestations of a general septicemia. [A.B.C.]

Gonorrhoeal Arthritis.—Baquez² reports two cases of gonorrhoeal arthritis affecting sisters at the same time. Aspiration of the joint failed to demonstrate the presence of bacteria, but the condition went on to a suppurative arthritis, for which arthrotomy was performed, and cultures taken from fungoid outgrowths on the synovial membranes gave abundant colonies of the gonococcus. The infection was localized to a single joint in both cases. What joint was affected is not stated, but ankylosis resulted. [M.B.T.]

Influence of Lister Upon Military Surgery.—Ogston³ says von Langenbeck was one of the first to take advantage of the teachings of Lister and to advise the discontinuance of amputation of the leg for gunshot wound through the knee or any similar wound. At first this was opposed, but it soon prevailed. Esmarch, carrying out the septic principle, introduced the first dressing packet for soldiers in the field. The abolition of probing in abdominal wounds was due to Lister. This practice ceased long before the advent of the small caliber and relatively aseptic projectiles. Most of the advances and improvements upon the methods of Lister have been made in military practice by surgeons on the Continent. [A.B.C.]

Statistics of Operations for Appendicitis.—Richardson⁴ states that out of 1,002 abdominal operations at the Massachusetts General Hospital during 1901, those upon the appendix comprised 337. Second in frequency was hernia, 214 cases. Of

the operations for appendicitis 144 were for the acute variety without general peritonitis with 5 deaths, a mortality of 4.18%. Acute appendicitis with general peritonitis numbered 41 operations with 25 deaths, 60.9%. In 152 chronic cases there were no deaths. Richardson's private cases give practically the same results. He believes that operation is indicated in most if not all severe cases when first seen, unless the symptoms are unquestionably improving or the patient is hopelessly moribund. He also believes that increased experience is improving the results of intervention, even in bad cases. [A.G.E.]

Lister and Pasteur.—Hart¹ says Pasteur's work did not merely save life; in manufactures it was of great value; in average years in France the value of the cocoons produced reached 100,000,000 francs, while in 1863 and 1864 it fell to 24,000,000 francs, a yearly loss of 76,000,000 francs, or, roughly, \$15,000,000. Pasteur was unable to apply his researches to surgical treatment. Here Lister came in and by his knowledge in bacteriology, physiology and surgery, crowned Pasteur's work with a success which the world of science does not yet appreciate. [A.B.C.]

The Treatment of Esophageal Carcinoma with Carcinoin Adamkiewicz.—Pulawski² has treated a patient having carcinoma of the esophagus during a period of almost a year with Adamkiewicz's carcinoin, and makes the statement that in this case no positive favorable action was seen; in fact, it did not even produce a temporary improvement in her condition. [E.L.]

Operation for Obscure Abdominal Pain.—Prichard³ reports the case of a woman of 53 who for nearly four months suffered from symptoms of acute cholelithiasis and obstructive jaundice, together with certain nervous symptoms and a variable temperature, running at times to 104° F. A long course of internal treatment failing to relieve the symptoms, laparotomy was done with the expectation of finding biliary stones. None was found, but for eight days following the operation the temperature remained normal, when it again rose. Certain pigmented blotches on the body suggested disease of the suprarenals. Strychnia and arsenic gave quick relief. A second case is reported. A woman of 57 had lived an idle, luxurious life, and for a number of years had suffered from fugitive pains in the abdomen. Lately they were more localized in the pyloric region, and much aggravated by walking, riding or any jolting exercise. After many consultations with various physicians and surgeons, Sir William Bennett consented to perform a laparotomy, believing with the author that adhesions and a weighty dragging stomach caused the pain. Some adhesions were found, removed, and considerable relief followed. [A.B.C.]

Treatment of Cancer of the Breast.—Lucas-Championniere⁴ reports a mortality of 4 in 166 cases of amputation of the breast, these deaths being attributable directly to the operation. He believes that recurrence follows in every case of mammary carcinoma, and finds that local recurrence is exceptional. Recurrence in the subclavian glands is more frequent than in the axillary. Three cases of recurrence in the breast of the opposite side have been noted, these occurring 8 months, 2½ years and 10 years after operation. The writer does not sanction the removal of the greater pectoral muscle in breast amputation. From an anatomical standpoint this is not necessary, as the mammary lymphatics do not involve the muscle, and its removal may interfere with movements of the arm. After amputation he treats the wound with hydrogen peroxid, this substance perhaps destroying cancerous elements that remain. As after-treatment, magnesia and arsenic are employed. [A.G.E.]

Aseptic Treatment of Wounds.—Bloch,¹ of Copenhagen, studied under Lister 25 years ago, and was active in introducing the aseptic surgery in Denmark. One lecture each year is devoted to Lister and the results of his great work. He states that not long after the introduction of Lister's method the assertion emanated from Germany that antiseptics was unnecessary, since a sepsis would meet all the requirements. Though Bloch was the first to treat a whole series of major operations

¹ British Medical Journal, December 13, 1902.

² La Semaine Médicale, 1902. Vol. xxii, p. 393.

³ The Old Dominion Journal, January, 1903.

¹ British Medical Journal, December 13, 1902.

² Deutsche medicinische Wochenschrift, November 6, 1902.

³ British Medical Journal, December 27, 1902.

⁴ La Médecine Moderne, December 31, 1902.

by the aseptic method, securing splendid results, he warns his classes that while it is almost ideal, it is impracticable in hospital practice with many assistants. He therefore urges anti-septic combined with aseptic treatment of wounds. In dressing wounds he takes a piece of sterile (aseptic) gauze and has an assistant pour upon it a 3% solution of carbolic acid (antiseptic) solution. This is then placed upon the wound and covered by sterile cotton wool, which is "hydrophob," or nonabsorbent, the primary gauze pad being "hydrophil" or capable of absorbing the wound discharges. [A.B.C.]

Removal of the Superior Row of Carpal Bones in Acute Septic Disease of the Wrist-joint.—MacLennan¹ reports a case of severe spreading cellulitis of the hand for which the carpal bones were removed. This drains all the joint cavities, and as the cartilage is gone from the bones their drainage requires only free escape of the exudations. Pyemia is prone to follow septic bone lesions, hence treatment must be radical. The removal relieves the distressing pain following ulceration of the cartilage. It prevents bony ankylosis, the resulting union being fibrous, and when requisite attention is given, considerable movement may be looked for. In order to reduce deformity to a minimum, the hand is put up in an extended position, and later the splint is worn only at night, while passive and active movements are performed during the day. [H.M.]

Treatment of the Fractured Patella.—V. Mikulicz-Radecki² pays tribute to Lister, and asserts that the eminent surgeon was the first to suture the fractured patella. This was published in 1877, and six years later Lister reported seven additional cases; thus the operation was fully established in surgical procedure. Mikulicz questions when to operate and when not to operate for fracture of the patella. No hard and fast rule can be laid down. "Blow" fractures, *i. e.*, those from external violence, he usually treats by medicomechanical means; whereas "tear" fractures, caused by over-action of the quadriceps and a combination of blow and tear fractures, such as when a person falls, striking the knee, usually he treats by suturing. In blow fractures the parapatellar ligaments are unorn, while in tear and combination fractures they are torn. A series of cases operated upon is reported. In 14 cases which were investigated after treatment, 12 appeared to have bony union of the patella, but on examination by the Röntgen rays only 8 were bony while 4 had a ligamentous union. Of 15 cases treated by apparatus without suturing, 9 were afterward investigated, and in 8 the result was good. Five of these cases which appeared to have bony union were submitted to the Röntgen rays and 3 were found ligamentous, the other 2 being bony. [A.B.C.]

The Microscope as an Aid at Operations.—Edebohls³ mentions the comparatively slight recognition by surgeons of the value of an intelligent use of the microscope during surgical operations, this being especially true of England and France. He states that there is no good reason why the microscope, in competent hands, should not be used during operations at private houses, and urges the further use of this method. Several examples are given to prove the value of the study of frozen sections during operations. This is true of material obtained of uterine cureting, of obscure abdominal growths, and breast tumors. In at least three operations upon the kidneys such examination was necessary to differentiate between chronic interstitial nephritis and acute miliary tuberculosis. In one instance it decided between tuberculosis and miliary abscesses of the kidney. [A.G.E.]

Roux's Operation for the Radical Cure of Femoral Hernia.—Renton⁴ has employed this method in 10 cases, seven of which have been previously reported. He is pleased with the method, and describes it as follows: Make an incision over the crural canal, isolate the sac, put a catgut ligature round its neck. A metal staple is passed obliquely through Poupart's ligament over the crural canal, taking care to avoid the femoral vein, and then it is gently hammered into the pubis. Stitch the skin incision. Care must be taken not to put the staple in too

tightly, which would injure Poupart's ligament, still it must be sufficiently secured to prevent any recurrence of the hernia. The staple remains permanently *in situ*; it causes no irritation, and does not injure the bone. The operation can be easily and quickly performed by any one who follows the above steps. Roux has operated on over 60 cases, the retention of the staple giving rise to no trouble, and there has been no recurrence of hernia. [A.B.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Vaginal Cesarean Section.—Kallmorgen¹ reports a case of an eight months' twin pregnancy complicated with carcinoma of the portio delivered by vaginal cesarean section. Both children were delivered alive, but one died in 9 hours and the other in 14 days. The mother left the hospital apparently well in 26 days. The size of the growth made impracticable any delivery through distension of the cervix, and vaginal cesarean section was chosen because the operation is brief and the loss of blood relatively small. In such an operation it is advisable not to ligate the uterine artery until after emptying the uterus so as not to endanger the life of the fetus. [w.k.]

Origin of Teratoma of Germinal Gland.—Pick² thinks that in the investigation of the question whether the teratoma of the germinal gland originates in accumulated blastomere or in the fertilized polar cells, Marchand, and more recently Bonnet, has brought out in favor of the former theory the fact that these dermoid tumors contain not a trace of amnion or chorion. Pick reports in detail the case of a teratoma which he removed and subjected to microscopic examination; he gives the results of this examination, reviews the arguments of a number of investigators, and reaches the conclusion that the origin of these neoplasms is still unsolved. He states that the chorioepitheliomatous or vesicular molar products can enter in as constituent parts of a teratoma without any connection with pregnancy, in all parts of the organism, either male or female; and that between these peculiar neoplasms and the ordinary chorioepithelioma and vesicular mole of women there exists this chief distinction; the latter stands to its carrier in the relation of descendant, the former in that of consanguinity. [w.k.]

Vaginal Cesarean Section.—Weber¹ describes fully a case of carcinoma of the portio complicating pregnancy in which delivery was by vaginal cesarean section, the mother recovering and the child living one month after delivery. This method was given the preference as opening only the lower segment of the pelvis, producing far less shock and less danger of peritonitis than the classic method. Weber concludes that in those cases in which portio carcinoma is diagnosed at the end of pregnancy, and it is in the early stages so that it can be radically removed, and the pelvis is not narrow and the soft parts are yielding and distensible, vaginal cesarean section, according to Dührssen, seems to be the normal and proper operation. [w.k.]

Lateral Incision Through the Pubic Bone.—Leonardo Gigli¹ asserts that symphysiotomy from the surgical standpoint is not a correct operation. The difficulty in securing perfect asepsis in the joint, the still greater difficulty of keeping the parts in perfect juxtaposition during the healing process, and the many unfavorable results following the operation led the writer to seek some better way; and he considers that the lateral incision through the pubic bone by means of a wire saw invented for the purpose as a decided advance. He describes the instrument and the technic of the operation and gives a list of operations by different surgeons all with favorable results. Comparing these with the uncertain and often unfavorable results of symphysiotomy as reported by many operators he does not hesitate to recommend the lateral cutting of the pubic bone as preferable. The technic is simple, the hemorrhage is easily controlled, and the adjacent organs practically avoided and untouched. [w.k.]

¹ Glasgow Medical Journal, October, 1902.

² British Medical Journal, December 13, 1902.

³ The Postgraduate, January, 1903.

⁴ British Medical Journal, December 27, 1902.

¹ Centralblatt für Gynäkologie, November 29, 1902.

² Berliner klinische Wochenschrift, December 22, 1902.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPELMAN

REVIEW OF LITERATURE

The Nature of and Treatment of Heart Disease at the Menopause.—Ch. Fiessinger¹ distinguishes three types of cardiac disease at the menopause: 1. Cardiac diseases aggravated by the menopause; these may be treated so far successfully that the disorder which is the direct result of the menopause may be relieved, leaving the organ in the same damaged condition in which it was previously; they are sometimes fatal when the heart is already feeble and has not the force to resist the additional strain as the result of the menopause. 2. Cardiac diseases solely the result of the menopause, without previous disease of the heart, and without lesions of the other organs; in these the cure is complete; however, at the end of a number of years, symptoms of arteriosclerosis may be manifested. 3. Cardiac diseases of the menopause in which the heart is healthy, but which are accompanied by a lesion of another organ. The third form is rare, only one case being reported. The pathology of these conditions consists principally in an increase in arterial pressure, which may result from several causes. The prognosis is usually favorable. The treatment consists in confining the patient to a milk and vegetable diet and the administration of ovarine, theobromin, digitalis, and the iodids in small doses, with resort to caffeine and to venesection in urgent cases. [L.F.A.]

Clinical and Experimental Investigation on the Action of Thiocol and Sirolin.—Drago and Coco² obtained excellent results in simple and tuberculous bronchitis by the use of thiocol and sirolin. The tubercle bacilli decreased in number and their affinity to staining became less and less. After cessation of treatment guineapigs were inoculated with the sputum. The animals gave no tuberculin reaction and developed none of the other symptoms of tuberculosis. The dose of thiocol was 1-5 grains and of sirolin 2 to 6 teaspoonfuls a day. [W.E.R.]

Treatment of Syphilis by Intramuscular Injections of Hermophenyl.—Nicolle³ reports excellent results from the intramuscular injection of hermophenyl—sodium mercurio-phenol-disulfonate—in the treatment of syphilis. He injects 2 cc. (30 minims) of the following solution into the upper part of the thigh twice a week:

Hermophenyl 0.1 gram (1½ grains)
Distilled water9 cc. (2½ drams)

This should be sterilized in an autoclave.

Nicolle employed hermophenyl in this manner in 94 cases, and had only very slight accidents from its use; these he attributes to faulty technic. It does not cause persistent induration of the parts, abscesses, cicatrices, nor symptoms of mercurial poisoning. [L.F.A.]

The Action of the X-ray.—According to Snow⁴ the x-ray produces the following effects upon living tissue: Impairment of nutrition, marked by alopecia and atrophy of the skin; irritation; inflammatory action, shown by a tanning dermatitis or deep necrosis, with sluggish reaction; a germicidal effect, at least as regards certain organisms. He believes the earliest effect of the x-ray is to stimulate the normal action of the tissue cells, which in some cases will supplant abnormal elements without evidences of disintegration; and that longer exposures destroy the vitality of abnormal tissue without affecting the normal structures. It is to this destruction of tissue of low vitality that the x-ray owes its efficiency in various malignant growths. He believes also that it causes contraction of the arterioles, in this way controlling pain and hemorrhage. Lupus and epithelioma and similar superficial neoplasms are invariably cured by the use of the x-ray. More deeply situated growths may also be favorably influenced, but it frequently taxes the skill and patience of the operator to produce complete cure; and when tumors underneath the skin or enclosed cavities of the body break down, as they often do under the use of the x-ray, they may produce an autoinfection which, in debilitated

patients, may prove fatal. Snow further recommends very urgently the use of the x-ray not only in inoperable cases, but also in conjunction with operation in every case in which the latter is suitable. In many cases which might be inoperable without the x-ray, permanent cure may take place by means of the conjunction of operation and radiation. Patients do not become more tolerant of the rays after prolonged treatment, and after a tumor has been removed from one part, a similar growth may occur at a distant point. [H.C.W.]

Local Application for Corns.—Brocq¹ recommends:

Salicylic acid 1 gram (15 grains)
Extract of cannabis indica 0.5 gram (7½ grains)
Alcohol, 90% 1 cc. (16 minims)
Ether, 62% 2.3 cc. (37 minims)
Flexible collodion 5 cc. (80 minims)

To be applied every evening for eight days. On the eighth day a prolonged foot-bath should be taken, then with a scraper the mass of collodion, with the greater part if not all of the corn, may be removed. This treatment may be repeated if necessary. (This is but a slight modification of the wellknown process of Traill Green, which has become the basis of so many proprietary corn cures.) [L.F.A.]

Parenchymatous Nephritis Due to Syphilis.—The article by Wagner² is an analytic review of 12 cases, gathered from the literature, of acute parenchymatous nephritis following syphilitic infection, in which all possible etiologic factors other than the specific infection could be satisfactorily excluded, to which are added three cases from the Leipzig clinic. The diagnosis is difficult because of the many other possible etiologic factors; in 12 of these cases the symptoms appeared at the same time as the secondary syphilitic symptoms. Symptoms and course are those of ordinary nephritis. As regards prognosis, these cases are usually remarkable for their severity. The main interest of this article centers in Wagner's discussion of the therapy. Of 14 cases, 4 received no mercurial treatment, 3 died, 1 recovered. In 10 cases mercury was used, in some cases repeatedly, and in but one did any toxic effect of the mercury upon the kidneys appear; of these 10 cases, 2 died, the others recovered. Wagner concludes that specific treatment is therefore justifiable. [J.E.S.]

Incompatibility of Calomel with Cocain Hydrochlorate.—Marcel Jean¹ states that the addition of a solution of cocain hydrochlorate to calomel gives rise to a grayish, slate-colored discoloration, due to the liberation of metallic mercury. In those instances in which it is desired to form an ointment of cocain hydrochlorate, calomel or white precipitate, he advises first mixing the calomel with the fatty substance and then adding the cocain; by this means the calomel is coated with the fatty substance, and is protected from the action of the cocain. [L.F.A.]

FORMULAS, ORIGINAL AND SELECTED.

For Hemoptysis.—

Hydrastinin hydrochlorate } of each . . . 1 gm. (2 grs.)
Cotarnin hydrochlorate }

Mix. Make 12 pills.

Dose: One pill every second to fourth hour. [S.S.C.]

In Neurasthenia and General Debility.—

Sodium glycerophosphate } of each 4 gms. (1 dr.)
Calcium glycerophosphate }
Strychnin phosphate02 gm. (¼ gr.)
Fluid extract of guarana, or }
Fluid extract of coca, or } . . . 15 cc. (½ fl. oz.)
Fluid extract of kola }
Citric acid, a sufficient quantity.

Aromatic elixir 90 cc. (3 fl. oz.)

Water sufficient to make 120 cc. (4 fl. oz.)

Dose: 4 to 12 cc. (1 to 3 fluidrams) in water, three or four times daily after food. [S.S.C.]

For weak heart, intermittent or irregular, with precordial pain, irrespective of presence or absence of valvular lesion:

Adonidin005 gram (1/20 gr.)
Extract of cactus008 gram (1/8 gr.)

Mix. Dose: One such pill thrice daily. If the condition is due to abuse of tobacco, add to each pill:

Picrotoxin002 to .003 gram (1/20 to 1/20 gr.)

[S.S.C.]

¹ Journal des Praticiens, Vol. xvi, No. 51, 1902, p. 802.

² Klin. Therap. Wochenschrift, Nos. 31 and 32, 1902.

³ Bulletin Général de Thérapeutique, Vol. cxliv, No. 20, 1902, p. 795.

⁴ Journal of Advanced Therapeutics, Vol. xx, p. 701, November, 1902.

¹ Journal des Praticiens, Vol. xvi, No. 52, 1902, p. 824.

² Münchener medicinische Wochenschrift, Nos. 50 and 51, 1903, pp. 2073 and 2150.

ORTHOPEDIC SURGERY

H. AUGUSTUS WILSON

EDITORIAL COMMENT

"A New Principle of Curing Club-foot in Severe Cases in Children a Few Years Old" is offered by Ogston.¹ He refers to those cases which have either not been treated in the first two years of life or in whom the treatment has not been satisfactory. Exception may well be taken to one or two of Ogston's statements. "Those who have had much experience of cases of this kind will admit that, though a great deal can be done by selecting the proper operations, yet none of our plans of treatment are thoroughly satisfactory; all require great and prolonged care and observation of the patient, and after operations are frequent." The unfortunate reliance upon operations and so-called plans of treatment is the undoubted cause for the expressed dissatisfaction. Operations for club-foot are never curative but are, when required, simply an aid to the cure, by removing the obstacles to normal muscular coordination. A club-foot cannot be said to be cured in which the voluntary control is impaired, even though the foot may be placed in a correct or over corrected position; and herein lies the serious error of considering an operation for correction as curative. "Plans of treatment" are not applicable to ever varying conditions and no two cases of club-foot ever present exactly the same phenomena of position, resistant tissues, malplaced tarsal bones, stage of ossification, constitutional health or ability for recuperation. To accomplish a complete recovery in cases of club-foot there must be an understanding of the mechanical functions to be recovered; this is apparently wanting in those who postpone the application of rational treatment, or who simply cut tendons and allow the case to relapse by neglect, or who consider braces to be curative. The diversity of views as to the existence of bone malformation at birth will in part account for the existing differences of opinions as to the propriety of resorting to operative procedures in early life. Druitt, Erichsen, and Ashhurst are among those who oppose the existence of original bone deformity, while Adams, Morton, and others incline to the view that the astragalus is malformed at birth, and Phelps says that the deformity of the soft parts is out of all proportion to the deformity of a bone. The changes in the bones often described are in a large measure due to postponement of appropriate treatment. This may be accounted for in either of two ways: First, that observed in uncorrected cases in which the process of ossification progresses and the partially dislocated tarsal bones become permanently deformed to suit the abnormal position of the foot; and, secondly, in those cases of more or less marked severity where, to stretch shortened tendons, there has been recourse to great mechanical force. In these cases the bones, whether deformed or not, yield to the pressure exerted and thereby become deformed, and ossify in their altered shape. In most instances both of these occurrences could and should have been avoided by the early recourse to operative procedures. It is not a question of saving time but of perfect correction. Ogston's statement that "If the whole or a considerable part of a tarsal bone be resected for club-foot, that bone, or portion of bone is lost; it is not restored," is not in accord with the experience of the writer and others who have seen cases many years after complete excision of the astragalus. If a new and modified form of astragalus does not develop in the place formerly occupied by the excised malformed astragalus, it is certain that something closely resembling it is produced which often facilitates establishment of function of the ankle-joint which is comparable with normal action. It may well be accepted that there are and always will be cases for one reason or another that have reached the usual period of school life, to which Ogston refers, with deformed feet, in whom he

considers his method is applicable. That this should be so is condemnation of the previous methods or want of attention. Ogston's new principle consists in removing by a Volkman sharp spoon the bony kernel or unossified cartilage so that the bone will be restored in correct contour from the ossification from the shell of cartilage which remains. Several bones can thus be dealt with through one external wound. While the operation which is described at length is a decidedly new principle of procedure for club-foot, similar to the Sedillot operation for caries, sufficient time has not yet elapsed to show its permanent results in function, which after all is the essential feature. It is to be regretted that Ogston's paper should leave the impression that the operation he advocated should be considered curative in that no indications are given for after-treatment to establish function or prevent relapses. The great hopefulness that caused the Phelps' operation upon the soft parts to be extensively adopted indicated the desire for improved methods. The relapses caused by the contracture or failure to grow proportionally; of the large cicatrix of the Phelps' incision caused a revulsion until one after another abandoned the procedure in the light of subsequent events. Both the Phelps' and the newer Ogston's operations are in marked contrast to the non-cutting methods advocated by Lorenz and must direct attention to the necessity for early correction with the least possible cicatrix, to the avoidance of undue restraint and to the early development of muscles which alone can induce normal functions.

Tendon Transplantation.—This subject has been enriched by two contributions of decided merit and of great historic value. Elting¹ says the credit for this brilliant idea has usually been accorded to Nicoladoni but in reality belongs to Duplay, who in 1876 employed the procedure in a case of traumatic loss of function of the arm. Waterman² says that "probably the first man who ever grafted a tendon for any cause was Missa. The case was reported in the *Gazette Salulaire*, 1770, No. 21. Velpeau in his encyclopedic work preserved Missa's case from oblivion, and while he does not appear to have done the operation quotes Champion as having done so." In the discussion before the Paris Surgical Society in 1874 Polaillon, apparently unaware of the cases of Missa and Champion, awarded the credit of priority to Denonvilliers and announced that he had grafted a tendon in 1873. The work on surgery written by Denonvilliers, Bernard and others does not mention tendon grafting. In 1874 Tillaux reported a case before the Paris Surgical Society. In 1875 both Duplay and Tillaux reported cases before the Paris Surgical Society. Waterman observes: "It appears reasonable to suppose that tendon transplantation has been done in the past more generally than is believed to have been the case." In April, 1881, Nicoladoni appears to have first transplanted healthy tendons to correct paralytic talipes calcaneus in the methods previously used by others for other purposes. It is interesting to note that some five cases were operated upon by the so-called Nicoladoni method by Von Hacker, Maydl and others attached to Albert's clinic invariably for pes calcaneus, but the ultimate results appear to have been disappointing, and Waterman says that as early as 1886 the operation was definitely abandoned by the German and Austrian surgeons. Milliken and Parrish, of New York, announced as did Nicoladoni that they had introduced a new and original principle into surgery; Parrish first performed the operation in May, 1892. Since 1892 many operators have had recourse to the transplantation method; among the most conspicuous are Drobnik, Winkelman, and Goldthwait. The last named started in 1894 with the impression that the method was original;

¹ Tendon Transplantation in the Treatment of Paralytic Deformities, *Albany Medical Annals*, April, 1902, p. 187.

² Tendon Transplantation; its History, Indications and Technic. *Med. News*, July 12, 1902.

¹ British Medical Journal, June 21, 1902. (See abstract).

but careful research, for which he is noted, revealed the case of Nicoladoni but not those of Missa and Denonvilliers. It is interesting to observe the conclusions reached by Elting and Waterman, after their laborious study of the literature. Elting advocates tendon transplantation as the most satisfactory method of treatment yet suggested in the treatment of many deformities due to muscular paralysis or weakness. Waterman expresses the opinion "that we must seldom expect to secure by transfer of function alone complete equilibrium between antagonistic muscles. We must content ourselves with a gradual strengthening of those portions of muscles which are compelled to perform new duties." When it is considered that the class of cases usually considered suitable for this procedure are more or less hopelessly paralytic, it will be understood that entire restoration of function is out of the question and that apparently insignificant improvement is often a gain of paramount importance to the patient. Both papers point out the impropriety of continuing to designate the procedure Nicoladoni's operation even when it is applied to one of its uses, *i. e.*, pes calcaneus.

REVIEW OF LITERATURE

Internal Derangement of the Knee-joint.—Frank E. Peckham¹ says that internal derangement of the knee-joint is caused by a displacement of the semilunar cartilages, which may be very slight, with an immediate return to its normal position, or it may have all grades of severity up to complete dislocation, with a firm locking of the joint in consequence. Symptoms: Effusion may or may not be present. The joint is weak, giving way at intervals, possibly causing the patient to fall, followed a little later by actual locking of the joint. The knee is slightly flexed, painful, tender to pressure on inner side of patella, and it is often impossible to completely extend the leg. Increased lateral mobility of joint and ligamentum patella often elongated. With the knee slightly flexed, there is possible a slight twisting motion, and it is thus that the accident happens, consequently any apparatus which would prevent complete extension would surely prevent a recurrence. One other important thing the apparatus does is to prevent any separation of the inner condyles. These three things are actually accomplished by a Shaffer apparatus which the writer uses in such cases with uniformly successful results. Ten illustrative cases are cited. [It is with pleasure that an abstract furnished by the author is here given in the manner originally suggested by Dr. George M. Gould. It cannot be questioned that the author is the one best able to provide an abstract of his paper that will give the essential features as he wishes them to appear. Attention is again called to this subject with the hope that authors will furnish abstracts of their papers, not to exceed 150 to 200 words, and thereby secure accuracy that will be appreciated by the readers.]

Congenital scoliosis is the subject of a valuable paper by A. Broca and Albert Mouchet,² giving a condensed review of 35 cases. Of these, 29 were reported by Hirschberger,³ 1 by Codivilla,⁴ 1 by A. C. Fleury,⁵ 1 by Bonnaire, and 3 by Broca and Mouchet. Radiographs of the last three are in the Musée Dupuytren. In each of these three cases there was a supernumerary half vertebra situated between the first and second lumbar vertebra. Codivilla's case had a supplementary half vertebra between the second and third lumbar vertebrae. This instructive contribution adds to the pathologic knowledge of scoliosis, and will be read with interest by those who may be inclined to rely upon any of the so-called plans of treatment, and will indicate the necessity for the individual study of each case in order to appropriately meet its requirements.

Results After Treatment of Pott's Disease.—Taylor⁶ reports 39 cases treated in private practice by the use of Taylor's

apparatus, where the cases were observed and the deformity recorded for 10 or more years. Tracings of the spinal contour at the time of treatment and at the last examination are appended in each. The findings show that (1) the application of spinal support was nearly always promptly followed by the relief of pain and other acute symptoms, and by improvement in general health; (2) the patient was cured in 33 cases, the cure in a considerable number being practically perfect as regards health, figure and function; (3) 13 cases showed arrest or decrease in deformity; (4) regarding the final amount of deformity, the location of the disease was more important than any other factor, the cervical region being most favorable, lumbar next, and dorsal the least; (5) it was necessary in most cases to continue spinal support long after pathologic cure, owing to the tendency to increase of deformity from static conditions; (6) ankylosis is therefore later, rarer, and less extensive than usually assumed. [A.G.E.]

Postmortem Findings After the Lorenz Method.—Bradford and Soutter¹ quote Chatala and Veau in their report of the postmortem findings in the hip-joint of a child of 4 years, treated by the Lorenz method and dead of diphtheria one month after reduction. The pectineus was torn almost completely asunder; the capsule, which was unusually thick in front and thin behind, did not present an hour-glass contraction. The cotyloid cavity was well shaped, with well marked borders; the round ligament was present, and the femoral head small. The neck was marked by a cartilaginous prolongation on the posterior surface, not on the anterior. Manipulation with the specimen showed the upper part of the acetabular border which separated the two cavities, the true and the false, to be the chief obstacle, by its prominence, to reduction by direct traction. To effect reduction it is necessary to flex the femur on the pelvis and make slight external rotation, thus the head is brought down in the posterior part of the acetabulum where the border is less prominent; the thigh should be then abducted and the head will slip into the acetabulum. Fixed in external rotation with extension the head is held closer to the acetabulum by the tension of the capsule than in internal rotation, which relaxes the anterior part of the capsule. [A.B.C.]

Operative Substitution for the Paralyzed Quadriceps Femoris.—Magmes² reports the very favorable results of transplanting the sartorius and biceps femoris in three cases of quadriceps paralysis in consequence of acute anterior poliomyelitis. In no case was the sartorius paralyzed, and in each case the leg was capable of flexion and extension after the operation. The procedure followed by Schanz is the following: He exposes the quadriceps tendon immediately above the patella by an incision 15 cm. (5 inches) long, and cuts a slit through its center. A second incision is made posteriorly and through it the sartorius and biceps are separated from their insertion, and loosened for about one-third of their length. They are brought forward through openings made between muscles and fascia, and passed through the slit made in the quadriceps tendon, pulled tight, and so tucked up as to form a sling. He uses silver to fasten the tendons, and closes the wound without drainage. The limb and pelvis are put into a plaster dressing in the line of extension. After 10 days the skin sutures are removed; after three weeks a short plaster cast is applied, and this is taken off after six weeks, when active and passive movements are employed to produce usefulness of the limb. [E.L.]

After-treatment of Erosion of the Knee-joint.—Collier³ states that much of the disfavor for the operation of erosion for tuberculous knee-joint is due to bad results from want of care in the after-treatment, the joint becoming fixed in flexion. The patella should be kept freely mobile from the first. The inclination to flexion, always present, is much greater so soon as the patient begins to walk. To prevent this, place the limb in full extension so soon as the skin sutures are removed and fix in plaster, leaving a window through which the patella may be moved from side to side several times a day to prevent it becoming adherent to the femur. At the end of four to six months the cast should be removed, and if there is voluntary

¹ Therapeutic Gazette, July 12, 1902.

² Gazette heb. de Med. et Chir., June 8, 1902.

³ Beitr. zur Lehre der angeborenen Skoliose Zeltschr. f. orth. Chir., Band vii, Heft 1, p. 29

⁴ Archivio di ortopedic fascic., 11, p. 65, 1901.

⁵ Thèse doct. Paris, L. Boyer, éditeur, 1901.

⁶ The Postgraduate, January, 1903

¹ Boston Medical and Surgical Journal, Vol. cxlviii, No. 3, p. 61.

² Münchener medizinische Wochenschrift, October 14, 1902.

³ British Medical Journal, September 6, 1902.

power of extension the patient may be allowed to walk without support. If power of extension is not present, apparatus should be worn for at least two years. [A.G.E.]

Acquired High Position of the Scapula.—This deformity, first described and attributed to rickets by Kölliker¹ in 1898, differs from that known as Sprengel's deformity, which is congenital and apparently more frequent. A case of the acquired variety is described by Bender (*Münchener med. Woch.*, March 4, 1902) in a girl of 12 years. There were evident signs of rickets, and the radiographic picture showed a rickitic deformity of the scapula, characterized by increased curvature of the bone and a hook-like formation of the inner upper angle, enlargement of the coracoid process, and anterior displacement of the articular surface. The treatment consists in securing mobilization of the scapula by passive and active orthopedic exercises; and, later, in the use of an apparatus that draws the scapula downward and inward, in order to maintain the improvement. It may be necessary to add resection of the coracoid process and upper angle, with division of the shortened muscles. [D.R.]

School Children Examined for Spinal Curvatures.—Bradford and Soutter² report the findings of physicians who examined the school children of Lausanne, France, where 2,314 children were examined, and anteroposterior curvatures were found in 5.8%, boys being slightly more frequently affected. Curvature affected 2.7% in the lower class, and 4% in the upper class. Of these, 9% only showed evidence of rickets. In half the cases the curvature was combined with scoliosis. In scoliosis, a difference in the length of the limbs was not an important predisposing cause; of 571 scoliotics, only 6.8% had shortened limbs. The influence of flat-foot is slight in the development of scoliosis, for this defect existed on one side in 23.9% of the boys (1,290 cases), but in only 8.4% of the scoliotics. Of the 2,314 children, 24.6% were scoliotic. Boys were affected nearly as frequently as girls; boys 23%, girls 26.7%. Left scoliosis increased with less frequency than right as the children grew. Lumbar scoliosis was much more common in girls, while dorsal scoliosis is nearly as common among boys. Scoliosis, according to Eulenburg's figures, increases in frequency rapidly in the age of school life, 8.9% being between the age of 2 and 6; 88.6% from 6 to 14, the age of entrance into scoliosis being 6. [A.B.C.]

Painful Foot.—Schanz³ discusses the symptoms and treatment of flat-foot, giving numerous valuable points toward its diagnosis and treatment. It is rarely congenital, but usually arises when there is a disproportion between the weight resting on and the supporting ability of the arch of the foot. Rickets, fractures, sprains, obesity, occupations necessitating standing, etc., are the causes. Its symptoms are pain existing at any and all parts of the foot, associated with or without change in its structural build. No one painful point is typical for the condition, but pain may appear anywhere. Weariness on the slightest exertion, peculiar stiffness of foot while walking, waddling gait, are the other prominent symptoms. Such patients often wear old and warm shoes, their feet perspire, are swollen and edematous, there is much tenderness especially on passive supination. The treatment for flat-footedness consists in the wearing of soles, which increase the arching of the foot, and have to be made for each individual case. Firm bandages, rubber stockings, adhesive plaster, well-fitting shoes, are also of service. [E.L.]

Treatment of Congenital Torticollis.—E. Noble Smith⁴ gives practical points in the treatment of uncomplicated congenital torticollis which may be summarized as follows: (1) Division of the contracted sternomastoid muscle is usually required; (2) a retention apparatus is not usually necessary in uncomplicated cases, either before or after operation; (3) in operating, the open wound is desirable in the majority of cases, certainly when the clavicular attachment of the muscle has to be divided; (4) a vertical incision between the two attachments is useful because (a) it is less likely to leave a noticeable scar than is a transverse cut, and (b) through this one opening both

the sternal and clavicular portions of the muscle can be divided; (5) the incision should be about 1½ inches in length from the level of the clavicle upward. The patient should be kept in bed in one position for from 7 to 10 days after the operation; (6) subsequent treatment depends on the condition of the patient previous to operation. In children of 6, structural changes will not be severe and little difficulty will be experienced in keeping the head straight. If there is a tendency to resume the former position massage and special exercises will correct it. In older patients, especially adults, the tendency will be stronger but the same treatment generally suffices. Cases with severe lateral curvature will need special treatment, but these are not considered within the scope of the paper. Notes on four cases with illustrations are appended. [A.G.E.]

The Treatment of Club-foot in Children.—Ogston¹ asserts that ossification of the tarsal bones does not occur until comparatively late. He has therefore devised a plan of operation as follows: After the usual disinfection an Esmarch's tourniquet is applied to the leg and tenotomy of the tendo-Achilles is performed. An incision through the skin is made in a gentle curve beginning in front of the external malleolus and extending forward with its convexity toward the sole, until it terminates over the calcaneo-cuboid joint on its dorsal aspect. When its edges are retracted the outline of the astragalus is visible. The soft parts covering it and the cartilaginous shell surrounding its osseous center are then divided by a shorter incision in the same line as the cutaneous one, the knife being made to sever everything down to the bony kernel. A Volkmann's spoon, slightly curved forward at its neck, is passed into the wound of the cartilages and the whole bony center, save the upper part constituting the pulley between the two malleoli, is cautiously scraped out. The feeling conveyed through the spoon at once tells when the cartilage is reached. The foot is now placed in the attitude of rectification, and usually the improvement is very great. If the correction be not sufficient, as will be the case in very severe deformity, it is necessary to apply the same treatment to the cuboid and calcis, which stand in the way. The skin incision is glided over the cuboid till its outline can be seen and felt, and it also is incised and its bony center completely scraped out, sparing all its cartilaginous shell. The anterior end of the calcis is similarly treated and then the rectification is satisfactory. [A.B.C.]

Hallux Valgus.—The curative treatment of hallux valgus lies in orthopedic and operative measures. The first consists in the application of a tampon of felt between the first two toes; a diachylon bandage is bound from the base forward on the toe, at its anterior extremity it is turned and carried along the internal border of the foot and fastened at the back; a cord from the anterior extremity of the binder is fastened on the inner side of the shoe. A plaster apparatus is applied after straightening. If surgical intervention is necessary, the best method is resection of the neck of the metatarsal bone, cuneiform osteotomy. An incision is made on the dorsal surface of the first metatarsal bone about half an inch inside of the corresponding tendon; the periosteum is loosened so as to expose a bony angle at the external summit, which may then be removed by a chisel. [L.F.A.]

Surgical Treatment of Spastic Infantile Paralysis.—Jones² states that nothing can be expected from medicine in the treatment of this condition. He has operated upon more than 100 patients, and says that a large proportion of children suffering from severe spastic paralysis may be transformed into useful members of the community and enabled to walk with comparatively little deformity. The cases not amenable to surgical treatment are the idiot, the microcephalic, and the violently irritable type of diplegia. Technic is discussed by Jones, who has operated on patients aged from 12 months to 20 years. Treatment of these patients should resolve itself into a system, such system including operative, mechanical, and educational stages. The surgeon must have the case under control for at least 12 months. The new Liverpool Country Hospital for Chronic Diseases of Children is to have a ward where paralytic patients can be kept as long as it is necessary. [A.G.E.]

¹ Arch. f. klin. Chir., Bd. lvi, 1898.

² Boston Medical and Surgical Journal, Vol. cxlviii, No. 3, p. 64.

³ Deutsche medizinische Wochenschrift, October 16, 1902.

⁴ Lancet, June 28, 1902.

¹ British Medical Journal, June 21, 1902.

² Journal des Praticiens, Vol. xvi, No. 5, 1902, p. 75.

³ British Medical Journal, September 6, 1902.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended January 24, 1903:

SMALLPOX—UNITED STATES.

		Dec.	Jan.	Cases	Deaths
California:	San Francisco	28	11	10	
Colorado:	Denver	3-10		7	
Dist. of Columbia:	Washington	10-17		2	
Illinois:	Chicago	10-17		14	
Indiana:	Evansville	10-17		3	1
	Two imported on river steamer.				
	South Bend	10-17		5	
Kansas:	Wichita	10-17		1	
Kentucky:	Lexington	10-17		1	
	Louisville	14		1	
Louisiana:	New Orleans	10-17		1	
Maine:	Biddeford	10-17		15	
	Lewiston	10-17		7	
Massachusetts:	Boston	10-17		15	3
	Cambridge	10-17		1	
	Chelsea	10-17		1	
	Melrose	10-17		1	
	Grand Rapids	10-17		6	
Michigan:	St. Louis	4-18		31	
Missouri:	Omaha			10	
Nebraska:	Nashua	10-17		4	
New Hampshire:	Camden	10-17		3	
New Jersey:	Newark	10-17		3	1
	Plainfield	10-17		2	
	Buffalo	10-17		5	
New York:	New York	10-17		2	1
Ohio:	Cincinnati	2-16		22	
	Cleveland	10-17		16	
	Dayton	10-17		4	
	Hamilton	10-17		1	
Pennsylvania:	Altoona	10-17		1	
	Erie	10-17		4	1
	Johnstown	10-17		8	
	McKeesport	10-17		3	
	Philadelphia	10-17		35	2
	Pittsburg	10-17		19	3
South Carolina:	Charleston	3-17		9	
Tennessee:	Memphis	10-17		4	
Texas:	San Antonio	Dec. 1-31		3	
Utah:	Salt Lake City	Jan. 3-17		45	1
Virginia:	Danville	Jan. 10-17		9	1
Wisconsin:	Green Bay	Jan. 11-18		1	
	Milwaukee	Jan. 10-17		13	

SMALLPOX—FOREIGN.

Austria:	Prague	Dec. 20-27		5	
Barbados:		Dec. 19-Jan. 2		9	1
Belgium:	Antwerp	Dec. 20-27		4	1
	Brussels	Dec. 20-27		4	2
Brazil:	Bahia	Dec. 13-27		4	
Canada:	Amherstburg	Jan. 10-17		2	
Canary Islands:	Las Palmas	Dec. 3-13		2	
Great Britain:	Birmingham	Dec. 27-Jan. 3		2	
	Leeds	Dec. 27-Jan. 3		7	
	Liverpool	Dec. 27-Jan. 3		48	3
	London	Dec. 27-Jan. 3		14	
	Manchester	Dec. 27-Jan. 3		5	
India:	Bombay	Dec. 9-23			10
	Madras	Nov. 27-Dec. 12			2
Italy:	Palermo	Dec. 20-27		13	1
Mexico:	City of Mexico	Jan. 4-14		4	2
Russia:	Moscow	Dec. 13-20		2	2
	Odesa	Dec. 20-27		5	2
	St. Petersburg	Dec. 20-27		21	2
Straits Settlements:	Singapore	Nov. 8-Dec. 6			12

YELLOW FEVER.

Colombia:	Panama	Dec. 29-Jan. 12		9	3
Ecuador:	Guayaquil	Dec. 20-Jan. 3			22
Mexico:	Tampico	Jan. 3-10			6
	Vera Cruz	Jan. 3-17			8

CHOLERA—INSULAR.

Philippines:	Manila	Nov. 16-Dec. 6	154	126
	"	Total to Dec. 9	4,533	3,402
	Provinces	Nov. 16-Dec. 6	1,358	852
	"	Total to Dec. 9		
		approximate	117,246	74,505

CHOLERA—FOREIGN.

Egypt:	Alexandria	Dec. 12-26	21	16
India:	Bombay	Dec. 9-23		3
	Calcutta	Dec. 6-13		35

PLAGUE—INSULAR.

Hawaii:	Honolulu	Dec. 31		1
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PLAGUE—FOREIGN.

India:	Bombay	Dec. 8-23	243	
	Calcutta	Dec. 6-13		18
	Karachi	Dec. 7-14	17	14

Changes in the Medical Corps of the U. S. Army for the week ended January 24, 1903:

KELLOGG, PRESTON S., contract surgeon, leave granted is extended twelve days.
 HULL, A. R., contract surgeon, is granted leave for twenty-one days, from about February 4.
 MERRICK, JOHN N., contract surgeon, is granted leave for one month to enable him to appear before the Army Medical Examining Board at the Presidio, February 9, for examination for commission as first lieutenant and assistant surgeon.
 SIEVERS, ROBERT E., contract surgeon, Fort Harrison, will proceed to Fort Missoula for duty during the temporary absence of Contract Surgeon John N. Merrick. On completion of this duty, Contract Surgeon Sievers will rejoin his proper station.
 O'NEILL, JOSEPH A., contract surgeon, leave granted December 15 is extended one month, and upon expiration of his leave he will proceed to San Francisco, Cal., and report for transportation to Manila, P. I., for assignment to duty.
 TURNBULL, First Lieutenant WILFRED, assistant surgeon, having reported his arrival at San Francisco, Cal., will report to Fort Myer for duty.
 HARTUNG, HENRY, hospital steward, is relieved from further duty with company of instruction No. 2, hospital corps, Fort McDowell, and will proceed to Fort Columbus to relieve Hospital Steward Herbert Curtis. Steward Curtis will proceed to Fort McDowell and report to the commanding officer, company of instruction No. 2, hospital corps, who will send him to Manila, P. I., for assignment to duty.
 SHEPHERD, JOHN M., contract surgeon, is granted leave for one month, on account of sickness.

Changes in the Medical Corps of the U. S. Navy for the week ended January 24, 1903:

HART, G. H., KAINES, A. W., FOSTER, T. C., BLOCK, W. H., and DYKES, J. R., appointed acting assistant surgeons—January 20.
 ARNOLD, W. F., surgeon, detached from Cavite Naval Station and ordered to Port Isabela, P. I.—January 21.
 OMAN, C. M., assistant surgeon, detached from: Port Isabela and ordered to the Frolic—January 21.
 GRUNWELL, A. G., passed assistant surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Hospital, Washington, D. C.—January 21.
 HUNTINGTON, E. O., passed assistant surgeon, detached from the Navy Yard, New York, and ordered to the Maine—January 21.
 KERR, D. B., passed assistant surgeon, detached from recruiting duty and ordered to the Wabash—January 21.
 HOLCOMB, R. C., passed assistant surgeon, commissioned passed assistant surgeon—January 21.
 DELANCY, C. H., assistant surgeon, detached from recruiting duty and ordered to Naval Hospital, Norfolk, Va.—January 21.
 BOGAN, F. M., assistant surgeon, detached from Naval Hospital, Washington, D. C., and ordered to the Navy Yard, Washington—January 21.
 DEBRULER, J. P., appointed assistant surgeon, January 3, 1903—January 21.
 CAMPBELL, R. A., acting assistant surgeon, ordered to duty with recruiting party—January 21.
 KEENE, W. P., acting assistant surgeon, ordered to duty with recruiting party—January 21.
 CHAPMAN, R. B., acting assistant surgeon, ordered to duty with recruiting party—January 21.
 PLUMMER, R. W., passed assistant surgeon, detached from recruiting duty and ordered to the Prairie—January 22.
 FURLONG, F. M., passed assistant surgeon, detached from recruiting duty and ordered to the Navy Yard, New York—January 22.
 MILLER, J. T., acting assistant surgeon, ordered to recruiting duty—January 22.
 JANNEY, W. H., acting assistant surgeon, ordered to the Naval Hospital, Port Royal, S. C.—January 22.
 MOORE, A. M., surgeon, retired, appointed member Board of Examiners, Civil Engineers, Chicago, Ill.—January 24.
 BYRNES, J. C., surgeon, additional duty as member of Board, Examination of Civil Engineers, New York—January 24.
 BLACKWELL, E. M., assistant surgeon, additional duty as a member of Board, Examination for Civil Engineers, New York—January 24.

Changes in the Public Health and Marine-Hospital Service for the week ended January 22, 1903:

BAILHACHE, PRESTON H., surgeon, leave of absence for thirty days from January 6, 1902, amended so that it shall be for twelve days—January 22, 1903.
 AUSTIN, H. W., surgeon, leave of absence for three days, under paragraph 179 of the regulations.
 GUITERAS, G. M., passed assistant surgeon, granted leave of absence for seven days from January 19, 1903, under paragraph 181 of the regulations.
 OAKLEY, J. H., passed assistant surgeon, leave of absence for two days granted by Bureau letter of January 13 revoked—January 20, 1903.
 KORN, W. A., assistant surgeon, to proceed to Delaware Breakwater and assume temporary charge of the station during the absence, on leave, of Passed Assistant Surgeon C. H. Lavinder—January 17, 1903.
 BOGGESS, J. S., assistant surgeon, granted leave of absence for four days from January 21—January 16, 1903.
 SAMS, F. F., acting assistant surgeon, leave of absence for thirty days from January 1, 1903, granted by department letter of January 5, amended to read thirty days from January 5—January 14, 1903

American Medicine

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Statistics of Railway Accidents.—During the year ending June 30, 1901, there were 282 passengers killed and 4,988 passengers injured in United States railway accidents. During the same time there was not a passenger killed by train accidents in all England, Scotland, Wales, or Ireland. Including employes, trespassers, and grade-crossing victims, the total figures of accidents in the United States from railway accidents are for the year ending June 30, 1901, 61,794—killed, 8,455; injured, 53,339. Of employes one out of every 400 was killed, and one out of 26 injured. Of passengers one was killed for every 2,153,469 carried, and one injured for every 121,748 carried. About $2\frac{1}{2}$ collisions, and $1\frac{1}{2}$ derailments occurred per 100 miles of road per year, and the losses, not including damages to freight or on account of personal injuries or deaths, average about 3,800 per 100 miles. How long will the American people endure this reckless and brutal sacrifice of life on the part of railway companies? England shows us that it is unnecessary. Undoubtedly, also, the mere financial expense of it to the railroads is much greater than would be its prevention.

The Causes of Railway Accidents.—The recent appalling collisions and accidents to trains seem at first to point to a rapid increase of carelessness, but it is noteworthy that the terrible figures remain about in proportion to the population each year. From the reports submitted to the Interstate Commerce Commission in 27 of the more serious collisions the principal causes were: Forgetfulness by conductors and enginemen, who run their trains past stations at which, according to written orders in their pockets, they should stop; overlooking one of a number of orders; mistakes in reading hours or names in written orders; misreading watches or miscalculating time; misreading time tables and train registers; carelessness in identifying trains at meeting stations. Besides these errors of the men on the trains there are mistakes by train dispatchers in issuing telegraphic meeting orders and by telegraph operators at stations in receiving, copying, sending, and delivering telegraphic orders which are sent by the dispatcher to the men in charge of trains and are repeated back to the dispatcher. Collisions occur also by reason of complications following deliberate neglect to carry out certain safeguards. In other words, a single mind is likely to

become careless or make any one of the many errors of sense or judgment which result in accidents. In many instances railway employes are required to be on duty, or voluntarily remain for so unusual a number of hours as to suggest that accidents more or less frequently result from that cause. The work of operating trains in which these men are engaged requires a high degree of mental and physical vigor. If their powers are impaired by service exceeding the limits of ordinary endurance there is liable to be a loss of that alertness on which the safety of the traveling public so constantly depends. From the data compiled it appears that in seven serious cases occurring in six months the men at fault had fallen asleep on duty or had been constantly on duty from 15 to 25 hours before the accident.

The Remedy for Railway Accidents.—We have before stated our belief that not only are accidents at sea and on railways caused by temporary working overtime, by overfatigue, illness, carelessness, etc., but that these things are also due to old age. "He was our oldest and most experienced man," is often given as an excuse, when in fact it is precisely the fault. Age and long bearing of responsibility blunts the senses and the mental alertness which really prevents accidents. All pilots, captains, engineers, etc., should be pensioned or transferred to other positions at a certain age, beyond which it is unsafe to trust them with the hazardous responsibilities. It has long been recognized that two pilots must be on duty in the wheelhouses of ferry-boats, etc., and why should not two engineers be on duty on every passenger locomotive? The old style of engine permitted the fireman to act as a second to the engineer. The new machines forbid this. Let a third man be added. Two train dispatchers should be in charge of each principal office, and overtime work should be prohibited by law in trainmen. Automatic couplers and power brakes have been made compulsory by law and have served to lessen somewhat the number of casualties, but there are many other ways that a nation careful instead of reckless of the lives of its people should demand which would stop the hideous maimings and deaths at present unnecessarily permitted.

Dr. Razlag's Method of Treating Leprous Patients.—In Public Health Reports there have

appeared reports of a method of treating leprosy patients advocated by Dr. Adolph Razlag, of Vienna, Austria, but spoken of as an American citizen, whereby the cure and final extinction of leprosy is assured. According to the reports of Surgeon John M. Swan to the U. S. Consul at Canton, China, of January 10 and April 25, 1902, no new or secret drug is used, the reliance being upon rational therapeutics combined with thoroughgoing personal hygiene, and great care as to reinfection. Each case should be studied separately; the treatment is symptomatic, and is required for five or six months. A recent and more extended report prepared by Dr. Razlag and forwarded by U. S. Consul McWade to the Assistant Secretary of State, says that of the four cases treated three have returned to their work apparently cured, the fourth, a desperate case when undertaken, being still under treatment. Dr. Razlag now gives the details concerning 14 new patients under treatment, and who show cures or partial cures most encouraging, although the treatment has lasted only at most less than four months, when a year is usually required to effect cure. In a vivid way Dr. Razlag describes the filthy conditions whereby infection and reinfection are brought about in China. All villages have a percentage of 3, 1, or 0.5 of cases, Canton itself having a total of 20,000 lepers. Heredity accounts for only about one-eighth of the cases. In order to carry out effective treatment, Dr. Razlag (who has borne the expenses of experimentation himself) advises the setting apart of an island whereto all lepers may be removed and thorough control established. The island of Molokai is suggested. Detailed description of the sanitary and hygienic conditions necessary are given in the report. Chief among these are kindness to and freedom of the patients so far as is not inconsistent with isolation; thoroughgoing medical authority and care; and absolute separation of the sexes to stop the inheritance of the disease. The mortality among lepers is not higher than among patients with other tropical diseases, and typhoid, pneumonia, smallpox, cholera, plague, dysentery, pernicious fevers, and anemia are almost unknown among the leprosy. The appointing of a leper commission of 10 is recommended, to have charge of the plans and arrangements. The treatment advised by Dr. Razlag is given in the columns of our therapeutic department.

Child Labor Reform.—There are nine States in which children of 14 are not allowed by law to be employed in factories and mercantile establishments. In New York a lax administration of the law is being proceeded against by a number of associations and many public-spirited citizens. The work of organization is largely in the hands of a devoted social worker, Miss Helen Marot, who has gathered over 1,000 cases of evasion of the law. Governor Odell's sound position taken in his message has had the effect of focusing public attention upon the evil of child labor in the entire State. In New Jersey Governor Murphy also spoke clearly of the same abuse, and advised that the power of removal of factory inspectors should be lodged in the Governor. In Illinois Governor Yates asks for more inspectors, placing the desired number at fifty. Illit-

eracy is increasing in Illinois; in 1890 this State was fifth in the table showing percent able to read and write in children from 10 to 14 years of age, while in 1900 it was the fifteenth. There are about 20,000 children at work in the State, one-third of whom are believed to be under 14, and no educational test is required of children before securing work. There is no law preventing night work. In Pennsylvania the child labor evil is almost unrestricted. There are at least 36,000 children at work in its stores and factories, besides the breaker-boys in the coal regions. Its illiteracy rate is high. The United Mine Workers have formulated a bill for the Pennsylvania Legislature which includes the following provisions:

"Abolition of night labor for all females, and for boys under 16 years of age.

"The raising of the age under which no child can be employed in Pennsylvania factories from 13 to 14 years.

"The reduction of the number of hours in a working day from 12 to 10.

"The raising of the age limit of breaker-boys from 12 years to 14 years, and of boys who work inside the mines from 14 to 16 years."

In North Carolina there are three bills before the Legislature, and in Virginia and South Carolina there are two. In Alabama, where the child labor bill was defeated in the last session, active preparations are being made to force the fight for the children at the next session of the Legislature in June.

American Street Gamins.—Without special attention one would not rightly estimate the numbers of uncared-for street urchins in our cities, nor their moral and sanitary condition. *Charities* devotes an interesting chapter to these youngsters—the thousands of newsboys, bootblacks, peddlers, office boys, messenger boys, telegraph boys, etc. Here are some excerpts about them:

"The House of Refuge holds 800 boys of 16 and under. Most of them have always lived in the streets, and are classed as 'workers,' 'loafers,' or 'thieves,' though many of them belong by turn to all three classes. As the superintendent told me, all the work of the House of Refuge is planned to undo the bad teaching of the street, its false morality, its failure to train for any permanent trade, its irregular periods for work and meals and sleep, its tense, nervous life, sustained and poisoned by double a man's portion of coffee, cigars, and cigarets. I know a large number who average four bowls of coffee each meal. In the streets near Newspaper Row I found over 100 sleeping. Other hundreds sleep in stables, condemned buildings, back rooms of low saloons, etc."

"He made his money and spent it—like a man. He contracted venereal disease before he was 15. In one boy's lodging-house I learned that the majority of the inmates have had a disease of this nature."

"Many messenger boys do all-night work between all-night houses and all-night people."

"His spare time he began spending against the law in certain all-night billiard-rooms, centers for the younger crooks of the Bowery. He became a famous winner with the dice. At 14 he began spending two nights of every week in a hideous place which is rightly called 'the sink' for all the city's prostitution. In one year he contracted the most loathsome of all its diseases. By 16 his face was as terrible as the face of a leper. A few months later he died."

"Some there are who rise to higher places, but those who succeed are the first to leave the street. Their influence is lost upon it. Not so with the failures. The toughs, beggars, and criminals remain to teach those who follow."

Unprotected by law, untaught except by vice, unknown of religion, these orphans of civilization have evil, disease, and death as almost the sole wages for their service.

What constitutes the practice of medicine? is a question of the greatest importance, because all the quacks and antis are seeking to break down any rational or legal definition of the term. In the noble efforts to place the practice of medicine upon a more honorable and scientific basis in Colorado by the Colorado State Board of Medical Examiners, in a draft of a new registration law the board thus clearly and wisely states its answer to the query, "What Constitutes the Practice of Medicine?"

Any person shall be regarded as practising medicine within the meaning of this act who shall attach to his or her name the title "M.D.," or "Surgeon," or "Doctor," in a medical sense, or advertise in any manner or hold himself or herself out to the public in this State as a physician, surgeon, doctor, or as a person who shall diagnosticate or offer to diagnosticate any physical or mental disease of any person, or suggest, recommend, or prescribe any form of treatment for the intended palliation, relief, or cure of the same, with the intention of receiving therefor, either directly or indirectly, any fee, gift, or compensation whatsoever. It is hereby further provided that the doing of any of the things hereinbefore set forth, or the maintenance of an office for the reception, examination or treatment of any one in manner as hereinbefore set forth, or the exposure of signs, circulars, or advertisements, or any other device or information indicating thereby the occupation of the person or persons as that of being engaged in the practice of medicine as hereinbefore defined, shall be considered as *prima facie* evidence in any prosecution brought under this act. Nothing in this act, however, shall be construed to prohibit gratuitous services in case of emergency, nor shall it apply to commissioned surgeons of the United States Army, Navy, or Marine-Hospital Service, while so engaged, nor to regularly licensed physicians in actual consultation from another State or Territory, nor to regulate regularly licensed physicians actually called from other States or Territories to attend specified cases in this State.

The Passing of Hypnotism.—We recently spoke of the evils of popular hypnotism and of the dangers arising from its use by the ignorant. Since then the warning has been emphasized by others, and now German scientists are extending it to the heretofore seriously entertained therapeutic applications. From Berlin comes the report that the commission of experts in mental diseases appointed by the Ministry of Education to investigate the healing value of hypnotism reports that it is essentially worthless. The commission was composed of Professor Mendel and Drs. Gock, Munter, and Aschenborn, who were appointed during the faith healing excitement there a year ago. The report declares hypnotism cannot produce organic changes, nor cure epilepsy nor hysteria, but it can be used helpfully in some instances by removing symptoms through suggestion. In Cleveland, Ohio, a plea was recently made in the defense of a criminal, later convicted of murder in the first degree, that he had been hypnotized and thus incited to the crime. The Court told the jury that this testimony could be "accepted for what it was worth," and a recommendation for mercy by the jury followed, resulting in a sentence of life imprisonment. The folly of this recommendation is evident. If hypnotic influence is

powerful enough to compel the commission of a crime, it is plain that it destroys the accountability of the hypnotized tool. If so there would be no justice in the plea for mercy and lessening the severity of the sentence. But in that case the punishment should be inflicted upon the hypnotizer, who in the Cleveland trial seems to have escaped free.

"Health Day."—We are not of those who cynically laugh at all the experiments in sociology and legislation made by our "American Republics." Some of them may appear absurd to pessimistic old age, but future philosophers will perhaps find the way of life and thinking of the self-satisfied as ridiculous, or even more so, as that of the unsatisfied occidental experimenter. From Salt Lake City (*absit omen!*) comes the report of a bill introduced into the Utah Legislature creating a new legal holiday to be called "Health Day." By its provisions the first Monday in October is created a holiday throughout the State. On this day it is made compulsory for every person in the State to clean and disinfect thoroughly dwelling houses, stores, theaters, public halls of all kinds, and in fact every building of the kind used by the people. The City Councils, Town Boards, and Commissioners are instructed to enforce the law, and there is a penalty of \$50 for failure on the part of any person to clean up and disinfect as provided. Of course the scornful will at once ask, what new kind of cleaning and disinfection is that which occurs but once a year? But, also of course, there is a mouth-closing answer to that in the counter that it is far better to wash up once a year than not even once in any year. It would certainly be of advantage to health and longevity if a rigidly enforced health day were forced upon the slums of New York and Philadelphia as often as once a year.

The College of Physicians of Philadelphia is the oldest medical society in America that is not a State organization. Its long history, extending over a period of 116 years, is intimately connected with the development of the science and art of medicine on the American continent. It has been one of the main factors, if not the main factor, in making Philadelphia the medical center of the United States. Through its Fellows, directly and indirectly, have been fostered the renowned schools of learning, the great publishing houses, and the medical journals that have constituted such a powerful force in perpetuating this preeminence. The wonderful library of the college, exceeded in this country only by the library of the Surgeon-General at Washington, has been the mainspring of the scientific work done in the city. Through its noble traditions the college has given to the profession of this city a dignity and an ethical spirit that could hardly have been evolved through any other force. The chief pride of the institution has always been its magnificent library. The growth of this has been so phenomenal that the building which, when finished in 1863, was expected to be large enough to serve its purpose for many generations, has become entirely too small; and the great problem has been how, with the limited funds at its disposal, the college could make suitable provision for its expanding library.

The gift of \$50,000 which Mr. Carnegie, at the suggestion of Dr. S. Weir Mitchell, has promised the college, on condition that the same amount shall be raised by the college itself, is likely soon to become available; for, through the efforts of a committee, a good proportion of the sum needed has been collected, largely from the laity. It is needless to emphasize the debt that the public owes to the College of Physicians. The position of Philadelphia as a medical center, the high standard of practice existing here, the flourishing condition of the medical schools—all are intimately interwoven with the history of the College of Physicians, and all of these redound to the advantage of Philadelphia's citizens. Two plans are under consideration for dealing with the needs of the institution; one is to enlarge the present structure by adding a story, and the other is to build an ample edifice on a new site. If the college should grow in the next fifty years in the same ratio as it has in the last half century the old building, even if enlarged, will be sure to be too small. In 1886, at the close of the first century of its existence, the College of Physicians of Philadelphia possessed 34,234 volumes, exclusive of duplicates. On November 1, 1902, the library contained, as Mr. C. P. Fisher, the librarian, kindly informs us, 60,860 bound volumes, 12,761 unbound volumes, and 64,227 theses and dissertations and pamphlets. We sincerely trust that the \$50,000 upon which the materialization of Mr. Carnegie's gift depends will soon be wholly raised.

The fight against smallpox by a small city, as illustrated by Altoona, Pa., will prove encouraging to all health officers. And not at all encouraging to anti-vaccinationists, if there are any such who care for facts. In 1902, according to Health Officer Miller, there were in Altoona 79 cases of smallpox, occurring in 30 households and in which 229 persons were exposed. Six patients died, not one of whom had been vaccinated. A capital report published in an Altoona paper describes the facts of each case. These are illustrative:

CASE II.—One case smallpox. Eight members in family. None ever vaccinated. Seven vaccinated after case was diagnosed. Four developed varioloid and three escaped by being vaccinated. CASE XIX.—One case smallpox. Never vaccinated. Four other members in family. One had been vaccinated and three had not been vaccinated. Three vaccinated after three weeks' time and all developed smallpox. The one previously vaccinated escaped. CASE XXIII.—One case smallpox. Not vaccinated. Thirteen other members in family never vaccinated. Some vaccinated after disease developed. Five had varioloid and eight smallpox. An infant born to one of the patients during time of disease and vaccinated at the age of one week escaped. CASE XXVIII.—Two cases smallpox. Neither ever vaccinated. Five other members in family never vaccinated. Immediately vaccinated and one developed varioloid and four escaped.

What is unprofessional or dishonorable conduct? is thus answered by the Colorado State Board of Medical Examiners in its draft of a proposed law to regulate the practice of medicine in the State:

The revocation and refusal of certificates shall be for any of the following causes, to wit: The employment of fraud or deception in applying for license on diploma or in passing the examination provided for in this act; conviction of crime involving moral turpitude; habitual intemperance in the use of

ardent spirits, narcotics or stimulants; unprofessional or dishonorable conduct. The words "unprofessional or dishonorable conduct," as used herein, are hereby declared to mean: First, the procuring or aiding or abetting in procuring a criminal abortion; second, the obtaining of a fee on the assurance that a manifestly incurable disease can be permanently cured; third, betrayal of a professional secret to the detriment of a patient; fourth, causing the publication and circulation of advertisements of any medicine or means whereby the monthly periods of women can be regulated or the menses can be reestablished, if suppressed; fifth, causing the publication and circulation of advertisements of any kind relative to diseases of the sexual organs tending to injure the morals of the public.

Autres Temps, Autres Mœurs.—In old countries the names of institutions are carried on unchanged, and to later generations they are often strange echoes of ages whose thoughts and feelings were as different as if from another world. In our country we do not willingly submit to such persistence of old names, and the tendency is emphasized by a growth of democracy and socialism which claims as a right what was once accorded as a favor. Illustrations of this have lately occurred in New York, where the names of some of the institutions in the Department of Charities have been changed. The *Almshouse* on Blackwell's Island will henceforth be known as the *New York City Home for the Aged and Infirm*, or more concisely, the *City Home for the Aged and Infirm*. The *King's County Almshouse* will have the same name with the addition of the term, *Brooklyn Division*. The *Randall's Island Asylums and Schools and Infants' Hospital* will be called the *New York City Children's Hospitals and Schools*. The *Richmond Poorhouse and Poor Farm* will be called the *New York City Farm Colony*. The *Outdoor Poor Department* is renamed the *Bureau of Dependent Adults*. We suspect that it will not be many years before another change will be made in the last title, and the term *Dependent* omitted.

EDITORIAL ECHOES

Cruelty to Animals.—We stand aghast at the tales of Indian cruelty to animals, but if a bill which has passed the House of Representatives and is now before the Senate should become a law, it would lead to an amount of cruelty to animals that would put us on the same level. Twenty-five years ago the American Humane Association succeeded in securing a law which forbade the keeping of livestock in cars more than twenty-eight consecutive hours without food or drink. No farmer who cared for the health of his animals would allow them to go unfed for so long a period. But even that ordinance has been frequently disregarded, and now the Livestock Association asks that it be made lawful to keep animals in cars without food or water, at all seasons of the year, for forty consecutive hours. The tortures of thirst to which the poor beasts would thereby be subjected in midsummer would be simply fiendish. But that is only one side of the question. All meat eaters would be injured by such a law. Even now meat in our markets is too often unpalatable. It is well known to hunters that venison is hardly fit to eat if the deer has been kept in prolonged agony by the chase, and physiologists explain the chemical changes in the meat brought about under such circumstances. The agony of thirst would, in the same way, affect all the meat of animals transported great distances. And all this to increase the profits of an organization which boasts that it represents a capital of \$600,000,000!—[*N. Y. Evening Post.*]

BOOK REVIEWS

International Clinics.—Volume III. Twelfth Series, 1902. Philadelphia: J. B. Lippincott Company.

Dr. Cattell's farewell volume well maintains the standard that he has set during his useful service as editor of the "International Clinics." We would call special attention to the article on The Urticarias by Professor H. Hallopeau; to Dr. Thayer's discussion of the availability of The Newer Diagnostic Methods for the general practitioner; and Walsh's excellent article on Insect Pests. Borrissof's article on The Function of the Digestive Glands should be carefully studied. It deals with the pancreas, which is assuming new importance in clinical medicine. Other articles are equally interesting, but these have appealed most strongly to the present reviewer.

Nothnagel's Encyclopedia of Practical Medicine: Diseases of the Bronchi, Lungs, and Pleura.—Philadelphia and London: W. B. Saunders & Co., 1902.

Of this book—the fourth volume of Saunders' American edition of "Nothnagel's Encyclopedia of Practical Medicine"—one may truthfully say that excellent as it is in the original it appears distinctly improved in its English dress. Representing as it did at the time of its issuance in the German the sum total of our knowledge of the subjects of which it treats, the distinguished American editor has found little to add, still less to modify, and scarcely anything to controvert. The additions, however, are noteworthy, and materially enhance the value of the book; taking cognizance of the results of recent researches, they include, as stated in the editor's preface: Some new matter on the anatomy and physiology of, and on foreign bodies in, the bronchi; the pathology, bacteriology and treatment of bronchitis; fibrinous bronchitis or bronchiectasis; eosinophilia and the results of Fränkel's researches in asthma; the blood and the urine in pneumonia; the bacteriology of catarrhal pneumonia; the surgical treatment of abscess, gangrene, and other pulmonary affections; the employment of modern methods of research, especially the Röntgen rays for purposes of diagnosis; the bacteriology of pleuritis; recent studies of Morse on the leukocytes in pleuritis; the Litten diaphragm phenomenon, etc. As a whole, the volume is extremely satisfying. In addition to the matter usually found in books of its class it contains much that will be sought in vain elsewhere. Thus Hoffmann gives an excellent discussion of bronchial stone and stone asthma, as well as of other foreign bodies in the bronchi—a subject that the American editor has somewhat embellished. As a matter of fact, the treatment of the entire subject of diseases of the bronchi is much the best of those known to the reviewer. It would have been wise, however, to have incorporated in the index a reference to pulmonary aspergillosis, streptothrix infections, etc. The discussion on pneumonia merits a careful perusal and a wide dissemination. It is especially valuable, *inter alia*, in that it exhibits the somewhat diverging views of two men of wide experience. Dr. Anfrecht, whose statements are based upon a large necropsy experience, distinguishes sharply between croupous and catarrhal pneumonia, between what is commonly termed lobar and lobular pneumonia, believing croupous pneumonia to be a clearly defined disease strictly different from other varieties of lobar pneumonia, and characterized anatomically by an evenly distributed granular appearance of the cut surface of the lung—an appearance absent in other pneumonias in which an entire lobe is involved. He states also that the term lobular pneumonia should be discarded, believing that the disease, to which this term commonly is applied, is a progressive disorder originating in the finer bronchi and bronchioles. Dr. Musser, on the contrary, states that a clearer conception of pneumonia would be had if the lung process were considered to be one of the many manifestations of a pneumococcus infection, and that thus the clinical course, the complications, and the sequels would be clearly understood. It is needless to add that the reasonableness of this view is emphasized by the detection of the pneumococcus in the blood of many patients suffering from pneumonia. Without pointing out many other excellent features of a

notable book, one may say that its plan is encyclopedic, its arrangement practical and scientific, its tone conservative and judicious, and that it exhibits a commendable dearth of ponderous Germanisms that inevitably creep into even the most painstaking rendering into English of German scientific thought.

The Pathology and Differential Diagnosis of Infectious Diseases of Animals.—By VERANUS A. MOORE, B.S., M.D. With an introduction by DANIEL ELMER SALMON, D.V.M. Taylor & Carpenter, Ithaca, N. Y., 1902.

For many years students of medicine have felt the need of a connected work dealing with the important points concerning the etiology and pathology of the infectious diseases of animals. The important contributions to this subject are found usually in the reports and bulletins of the Department of Agriculture, treatises on comparative pathology, and in journals devoted to veterinary medicine (mainly German); sources not readily available. Except as these lesions illustrate or have some important relation to similar conditions in man the student of human pathology never hears of them; and the student of veterinary pathology is dependent on the lectures of his instructor. Dr. Moore has rendered an invaluable service in bringing together in convenient book form a lucid, interesting, and accurate account of the infectious diseases of animals, which will be of assistance to both the student and the teacher of medicine, be he interested in man or the lower forms. After an opening chapter dealing with the general consideration of etiology, infection, etc., the various diseases are taken up under the general headings of (a) diseases caused by vegetable microorganisms (streptococci, bacteria, higher fungi); (b) those due to animal forms (protozoa, higher parasites), and (c) those diseases, presumably infectious, of which the cause is not known. An attempt is made to avoid controversial points. The descriptions, therefore, represent our present accurate knowledge. To each description are appended references to the important literature. The illustrations, in colors and in black and white, are very satisfactory. The book is in convenient form, the paper and type good. It deserves an extensive sale.

The New International Encyclopedia, Vol. V.—New York: Dodd, Mead & Co.

The principal medical articles in Volume V are as follows:

Colic in Animals	Coughing
Collodion	Counterirritants
Colloids	Cramp
Colocynth	Cremation of Dead
Color Blindness	Creosote
Colored Hearing	Cretinism
Colostrum	Criminology
Coma	Crisis
Compressed Air Treatment	Croup
Concussion of Brain	Crystalline Lens
Conjunctivitis	Cutaneous Sensations
Constipation	Deaf Mutes
Contagious Diseases	Deformities
Contract Surgeon	Degeneration
Convulsions	Dilirium
Corn	Dentistry
Cornea	Dependent Children
Copaiba	

The following subjects may be treated under other heads, but cross-references should have been inserted:

Collapse	Collyrium
Comedo	Confinement
Depressants	Copper (medical aspect)

Creosote should have a cross-reference to *creosote*. *Signs of death*, we fear, may not be treated under *Life*, to which there is a cross-reference. We also do not see why *colic in the human being*, which is not mentioned, is not as important as "colic in animals." There is no allusion under *Crystalline Lens* to cataract. The article on *Coma* seems altogether too short for the importance of the subject. Of exceptional value are the articles on *Colored Hearing*, *Compressed Air Treatment*, *Contract Surgeon*, *Cremation of the Dead*, *Criminology*, *Deaf Mutes*. Some of these we feared would be omitted, and their inclusion shows that the authors are not to be caught napping.

Pharmacology and Therapeutics.—By ARTHUR R. CUSHNY, A.M., M.D., Professor of Materia Medica and Therapeutics in the University of Michigan. Lea Brothers & Co., Philadelphia and New York.

From its first appearance Cushny's textbook has been recognized as a valuable addition to pharmacologic literature; and the present edition is an improvement upon its predecessors. The arrangement is logical; the language is clear and precise; the statements are accurate and trustworthy; the whole spirit of the book is sane and scientific. It fills a distinct place in the literature of its subject—fills this place well, and were it blotted out there would be a vacuum easily discernible; nevertheless, it is of much less merit from the viewpoint of clinical therapeutics. It is distinctly a laboratory book, written from the experimentalist's viewpoint, and seeing all things through the experimentalist's spectacles. The problems of disease as the practising physician meets them are, however, very different from the questions capable of laboratory decision by experimentation upon animals of various species, and especially upon healthy animals. Toward the solution of the practical questions of what to do at the bedside this book helps little; this is but to say that it has the defects of its qualities. On the other hand, it gives to the clinical therapist a full and accurate account of matters concerning which he has not had the time or opportunity to obtain original information. He can depend upon the faithfulness and the accuracy with which experiments are recorded, and the sanity of the judgment with which their results are collated and analyzed; yet he cannot practise medicine successfully with no further information than these pages afford him as to the powers of the agents of the *materia medica* in relieving human beings whose physiologic processes have been perturbed. A few examples may be given of the omission of recommendations that from a clinical standpoint are of everyday necessity. The stimulating action of camphor upon the heart in cases of threatening collapse is recognized, but the expedients of dissolving it in oil, or, preferably, in ether, in order to assure absorption when administered subcutaneously, are not mentioned. Doubt is thrown upon the action of musk as a cardiac stimulant—and it is true that the dirt dispensed for musk by many druggists cannot have a beneficial action, and may do harm; but the pure tincture of a good quality of Siberian musk, obtained from a trustworthy source, has so often in the hands of the reviewer produced decided therapeutic effects at the bedside that he would be sorry to be deprived of this valuable cardiac and cerebrospinal stimulant. The use of adrenal preparations in the treatment of exophthalmic goiter is not mentioned; and the value of picrotoxin in the treatment of vasomotor disorders—especially those of the menopause—does not seem even to be suspected. From the article upon oxygen it would be difficult to get any definite direction as to the manner in which this lifesaving agent ought to be used, the circumstances under which it is helpful, or the conditions in which it is useless; and we have failed to find the needful warning against its use in febrile cases of pulmonary tuberculosis, when it can only accelerate death. The use of thiosinamin locally or by injection, is referred to, but concerning its administration by the stomach we find no comment. The article upon the therapeutic uses of iodoform is quite incomplete, and the reference to its internal administration in pulmonary tuberculosis especially unsatisfactory. The clinical results reported by many observers of large experience and good repute—men capable of scientific discrimination in their estimate of results—have established for this drug a value altogether independent of its action or want of action upon the tubercle bacillus. And so we might continue—and the author might reply that these omissions are intentional, and that he has purposely excluded from his book all recommendations for which experimental verification and explanation are wanting. But therapeutics is an art and not a science. Much is necessarily empiric; much that is true in practice is falsely explained, and much that is good in practice lacks explanation. Yet even before Laveran quinin cured malaria, and neither the old Jesuit nor so modern a therapist as Bartholow could tell why. Before Newton bodies tended to approach one another with a force directly proportional to mass and inversely proportional to the square of distance, and as a

consequence thereof apples fell to the earth. Would not he who should have denied the descent of the apple and refused to hold his basket under the tree because the word gravitation had not yet been coined, have been a very incomplete pomiculturist and a one-sided philosopher, even from a laboratory standpoint?

Human Anatomy.—A Complete Systematic Treatise by Various Authors, Including a Special Section on Surgical and Topographical Anatomy. Edited by HENRY MORRIS. Published by P. Blakiston's Son & Co. Price, \$6 net.

Standard and complete works on anatomy cannot differ as to facts, but a wide difference often appears in the presentation of these facts. Description, the number, kind and quality of illustrations, and the arrangement of the subject matter, are subjects demanding special care in compiling a work on anatomy. In all of these the third edition of Morris meets the requirements in the present advanced method of instruction in anatomy. The work has been carefully revised, and with the exception of the chapters on the anatomy of the eye and circulatory system, changes of more or less importance have been made in all the sections. Some illustrations have been changed, others displaced by new ones, and the total number has been increased by more than 50. This work is particularly adapted to the needs of the student and the busy practitioner. The surface markings on the illustrations are particularly good, different colors being used to differentiate different systems of organs. The surface marking on bones, delineating by markings of different colors, the origin and insertion of muscles is of much value to the student. The portion of the work devoted to topographic and surgical anatomy will be of interest to the surgeon. We know of no standard work better suited for teaching the intricate subject of anatomy than Morris.

The Practice of Surgery.—A Treatise on Surgery for the Use of Practitioners and Students. By HENRY R. WHARTON, M.D., and B. FARQUHAR CURTIS, M.D. J. B. Lippincott Company, Philadelphia and London.

The third edition of this work has appeared, comprising a volume of some 1,200 pages, profusely illustrated. It is of course admitted that a single volume cannot discuss all the points in a subject like surgery which within a comparatively few years has grown to phenomenal proportions. Recognizing this the authors have wisely limited their discussion to the essentially practical subjects in the science, suiting the volume alike to the busy practitioner and the student. While all the subjects included in the usual treatises on surgery are ably discussed, we would direct favorable attention to that part devoted to fractures and dislocations. Certain illustrations depicting the position of the bones involved in luxation, particularly at the hip joint, are the best which have come to our notice. It has evidently been the aim of the authors to describe conditions and diseases with sufficient thoroughness to enable the practitioner to recognize the condition and to describe fully such appropriate treatment as the situation demands. In this they have fully succeeded, and we bespeak for this work the popularity which it merits.

Materia Medica and Pharmacology.—By DAVID M. R. CULBRETH, Ph.G., M.D., Professor of Botany, *Materia Medica*, and Pharmacognosy in the Maryland College of Pharmacy, etc. Lea Brothers & Co., Philadelphia and New York, 1903.

The author states that the outlined list of proposed official drugs and preparations already determined by the Committee on Revision of the *Pharmacopeia* has been used as a guide in preparing this edition. In consequence, a number of articles that are to be accepted have been treated prominently, while those that are to be discarded have been treated briefly. The recapitulation tables contain only those drugs which will be recognized officially. In many other respects likewise the volume will be found to reflect the spirit of the new *Pharmacopeia*. The arrangement of the drugs conforms strictly to that followed in the previous editions; thus substances organic and inorganic, which have a common origin, are associated together as nearly as possible; those next related follow in regular order, the basal or parental source being thus paramount. The pharmaceutical rather than the pharmacologic element predomi-

nates in the discussion of topics. The pharmacodynamics and therapeutics of the various drugs are given very briefly, and in general rather than specific terms. The work is thus adapted chiefly to the use of druggists and students of pharmacy, and as such serves an admirable purpose.

Therapeutics of Dry Hot Air.—By CHARLES EDWARD SKINNER, M.D., LL.D., Professor of Thermo-therapy in the New York School of Physical Therapeutics, etc. A. L. Chatterton & Co., New York.

This book is written by an enthusiast. It is full in its description of apparatus and methods, and in this respect is valuable. Its therapeutic recommendations must be taken with several grains of salt of good quality. There is no question, however, that within bounds, and with due individualization, the methods here advocated are useful in many chronic conditions that resist all treatment by drugs, and that such methods deserve wider recognition and employment than they have yet received.

A Manual of Medical Treatment, or Clinical Therapeutics.—By I. BURNEY YEO, M.D., F.R.C.P., Emeritus Professor of Medicine in King's College, London. W. T. Keener & Co., Chicago, 1902.

The revised edition of Yeo's work consists of two volumes containing upward of 1,500 pages. The original plan of approaching therapeutics from the viewpoint of the disease instead of the drug has been adhered to and deserves unqualified praise. Notwithstanding this, treatment has been made the important part as shown by the four pages devoted to the etiology and pathology of dysentery and eleven pages to its treatment, one of the latter being made up of selected formulas. The pathology of the various diseases has been brought well abreast of the times. Additional subjects, such as the treatment of hay-fever, paralysis agitans, cerebral tumors, erysipelas, cerebrospinal fever, rickets, scurvy, and purpura have received consideration in this edition. American writers are freely quoted. Illustrations are few, perhaps too few for a work of this magnitude. The book as a whole is so thoroughly satisfactory that minor points of possible criticism may be overlooked. We believe, however, that a separate index for each volume would have added greatly to the convenience of the reader.

BOOKS RECEIVED.

[Prompt acknowledgment of books received will be made in this column, and from time to time critical reviews will be made of those of interest to our readers.]

A Clinical Study of an Epidemic of Cerebrospinal Meningitis: With special reference to symptomatology and treatment.—By J. RUTTER WILLIAMSON, M. D. Thacker, Spink & Co., Calcutta, 1902.

Pharmacology and Therapeutics: A Text-book of Pharmacology and Therapeutics; or, the Action of Drugs in Health and Disease.—By ARTHUR R. CUSHNY, A.M., M.D., Professor of Materia Medica and Therapeutics, University of Michigan, Department of Medicine and Surgery, Ann Arbor, Mich. Third edition, revised and enlarged. In one handsome octavo volume of 750 pages, with 52 engravings. Cloth, \$3.75 net; leather, \$4.75 net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1903.

Transactions of the American Surgical Association: Vol. xx.—Edited by RICHARD H. HARTE, M.D., Recorder of the Association. Printer, William J. Dornan, Philadelphia, 1902.

The Malarial Fevers of British Malaya.—By HAMILTON WRIGHT, M.D., Director of the Institute for Medical Research, Federated Malay States. P. Blakiston's Son & Co., Philadelphia, 1902. Price, \$1.20 net.

International Clinics: A Quarterly of Illustrated Clinical Lectures and especially prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose, and Throat, and other Topics of Interest to Students and Practitioners by leading Members of the Medical Profession throughout the World.—Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, U. S. A., with the collaboration of JOHN B. MURPHY, M.D., Chicago; ALEXANDER D. BLACKADER, M.D., Montreal; H. C. WOOD, M.D., Philadelphia; T. M. ROTCH, M.D., Boston; E. LANDOLT, M.D., Paris; THOMAS G. MORTON, M.D., Philadelphia; JAMES J. WALSH, M.D., New York; J. W. BALLANTYNE, M.D., Edinburgh, and JOHN HAROLD, M.D., London, with Regular Correspondents in Montreal, London, Paris, Leipzig, and Vienna. J. B. Lippincott Company, Philadelphia and London. Cloth, \$2.00. Volume 4, series 12.

Quiz Compend: Diseases of Children: Especially adapted for the use of medical students.—By MARCUS P. HATFIELD, A.M., M.D., Emeritus Professor of Diseases of Children, N. W. U. Medical School, Physician to Wesley Hospital, Home for Crippled Children, Chicago Orphan Asylum, etc. Third edition, thoroughly revised. Price, 80 cents net. P. Blakiston's Son & Co., Philadelphia, 1903.

An Epitome of Physiology: For Students and Practitioners of Medicine.—By THEODORE C. GUENTHER, M.D., of the Norwegian Hospital, Brooklyn, and AUGUSTUS E. GUENTHER, B.S., formerly Assistant in Physiology in the University of Michigan, Ann Arbor. In one 12mo volume of 250 pages, with 57 engravings. Cloth, \$1.00 net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1903.

AMERICAN NEWS AND NOTES.

GENERAL.

Source of Plague at Mazatlan.—It is asserted that the Department of State has received advices from Mazatlan, Mex., stating that searching investigations by the authorities show that the plague was brought to that city by rats among vegetables shipped direct from Chinatown, San Francisco. The Charity Commission of the city has received \$130,000 to be used in combating the plague, and money is still pouring in from all parts of the country.

New Disease in Furs.—An exchange states that a new disease has arisen from the prevalent use of furs. The malady is supposed to be a germ disease and is not contracted from the expensive furs, but rather from those of the cheap quality, which have been dyed and otherwise treated to imitate the more expensive. Those in the fur shops who are continuously trying on furs are particularly prone to this disease from abrasions which may be upon the face, neck, or arms.

Sanitary Telephone Apparatus.—A citizen of Buffalo, N. Y., has invented the apparatus. It consists of a package of tissue paper suspended on a wire over the transmitter, with a hook to spread a single sheet in front of the opening. Before using the instrument the uppermost sheet is brought forward on the wire and turned downward over the bell until it is suspended on the wire. This prevents the speaker's mouth from coming in contact with the mouthpiece and inhaling disease germs that may have found lodgment on the apparatus. After using the instrument the sanitary sheet is stripped from the hook and replaced by a fresh one for the next speaker.

Mortality and Injuries Due to Train Accidents.—According to a statement recently published by the Interstate Commerce Commission, during the three months ended September 30, 1902, there were 263 persons killed and 2,613 injured in train accidents in the United States. Other kinds of accidents, including those sustained by employes while at work and by passengers in getting on or off the cars, etc., bring the total number of casualties up to 12,007, the killed numbering 845 and the injured 11,162. The total number of collisions and derailments was 2,448, of which 1,444 were collisions and 1,014 derailments. Of these 51 collisions and 92 derailments affected passenger trains.

Carnegie Institution.—In a summary of the Year Book Professor Gilman, ex-president of Johns Hopkins University, states that the methods of administration of the Carnegie Institution thus far developed are general rather than specific. Efforts have been and will be made to secure cooperation with other agencies established for the advancement of knowledge, while care will be exercised to refrain from interference or rivalry with them. For example, if medical research is provided for by other agencies, as it appears to be, the Carnegie Institution will not enter that field. Systematic education will not be undertaken, and sites or buildings for other institutions will not be provided.

Hospital Benefactions.—PHILADELPHIA: The late Jacob M. Engel bequeathed \$1,000 each to the Jewish Hospital Association, the Jewish Foster Home, and the Jewish Maternity Home. TAUNTON, MASS.: The late Mrs. Rebecca C. Ames bequeathed \$5,000 each to the Massachusetts General Hospital and Boston Home for Incurables for the establishment of a free bed in each institution in memory of her husband. She also bequeathed \$50,000 to Harvard College, the income of which is to be expended for the maintenance and support of any of the poor and meritorious students of the college. BALTIMORE, MD.: Under the will of the late Mrs. Margaret M. Smith, of this city, the Church Home and Infirmary will receive \$4,000 for the purpose of endowing a bed for an adult person, to be called the "Charles Fisher Smith bed," and the Home for Incurables will receive \$1,000.

Condition of the Leper Colony in the Hawaiian Islands.—The committee of senators appointed to investigate the condition of lepers in the Hawaiian Islands have completed their labors and submitted their recommendations to Congress. A visit was made to the islands and 176 witnesses were examined. The leper colony was visited and the condition found unsatisfactory. The committee advises that the management of the colony be transferred from territorial control to the Marine-Hospital Service with headquarters at Washington, and that a general leprosario for all lepers of the United States be established in the Hawaiian Islands. There are 538 leprosy patients in the settlement, and the opinion is expressed that there are many hundreds of other cases in the territory. One feature of the committee's report relative to the moral condition in the colony is the following: Under the existing management of the leper settlement indiscriminate, legitimate, and illegitimate cohabitation is permitted. Marriages are suffered to be celebrated between leprosy men and women regardless of their physical condition. Children are born in the settlement of leprosy unions and as a result of concubinage; and, strange as it may appear, the leading officials seem to regard all this not only as permissible, but protest vigorously against a system of segregation that would prevent it.

NEW YORK.

Opposition to Tenement House Law Amendment.—At the recent meeting of the New York State Medical Society a resolution was adopted deploring any weakening of the present tenement house laws, and urgently requesting the Legislature to permit no changes to be made that will in any way decrease the amount of light and air available for people living in such houses, or in any way taking a backward step in regard to their sanitary conditions.

New York Medical College and Hospital for Women.—The new wing which has been added to the hospital is now open for the reception of patients. The building includes an operating-room, 2 laboratories, 14 private rooms, and 3 wards. Further additions will be made as soon as more money can be raised. Through the efforts of the Hospital Guild, the hospital's floating debt of \$21,000 has been paid.

Appropriations for Insane Asylums in New York.—Those interested in the subject are making complaints that the Governor of New York has refused to keep his promise with reference to appropriations for the State insane asylums. It is stated that previous to his election a promise was practically made that the total appropriation should not fall short of \$4,779,000. In fact, this was carried so far that detailed figures for each of the separate institutions were submitted and approved. It now appears that the Legislature, it is said, under the direction of the Governor, will make appropriations upon the same basis as those of last year, which will fall \$279,000 short of the amount promised.

Asylum Superintendents Not Consulted in New York.—Among various bills introduced in the New York Legislature relative to the care of the insane is one which provides that when, in the opinion of the fiscal supervisor of State charities and the State architect the inmates of the institutions for the insane are able to assist in repairing old buildings or in the erection of new ones, they may be set at such work. It is ironically asserted that if the State architect and the State fiscal agent can determine when a lunatic is able to work, it might be well for the Governor to have a law passed under which these officers shall determine when a person is insane. Are the superintendents of institutions for the insane in New York merely figureheads?

Crusade Against Tuberculosis.—According to the statistics of the New York Health Department there is a large increase in the number of cases of tuberculosis in the Borough of Manhattan. This condition of affairs has led to the formation of plans for the amelioration of the condition of the sufferers. One plan under consideration by the Tuberculosis Committee of the Charity Organization Society provided for the erection of such institution as is needed by private subscription. Another plan is to have a municipal sanatorium under the supervision of the Health Department. The New York Medical Society advises that in the effort to check the ravages of the disease every senior student in every grammar and high school should be required to pass an examination in the method of preventing the spread of tuberculosis. Societies for the prevention of tuberculosis should be organized in every community. Public lectures should be given frequently by one who understands the facts and has the ability to impart them. By such educative efforts much might be done to teach the young the sanitary science of everyday living. Compulsory registration by physicians of every case of tuberculosis should be required. Opening of dispensaries for the treatment of the disease and the establishment in every city of a receiving hospital for patients suffering from tuberculosis were also recommended. The State has been urged to hasten the building of the hospital, for which an appropriation of \$100,000 was made two years ago.

Investigations of Bellevue Hospital.—A male probationary nurse, recently discharged from Bellevue Hospital, has made the following sensational charges against the management and other nurses in the institution: "That nurses administer strychnin, digitalis and other powerful drugs to patients supposed to be at the point of death, so as to 'tide them over' until other nurses come on watch, thus avoiding having to 'lay them out;' that morphin is given without authority to patients, so as to keep the ward quiet; that records of pulse temperature and respiration are taken by guesswork instead of by observations; that sleeping on duty is common, and that one patient died of hemorrhage while the nurse slept; that nurses take whiskey and wine from the drug closets to drink themselves and to give to employes, and that they skim milk intended for patients on milk diet." At a meeting of the Board of Trustees of the Bellevue Hospital, held after an investigation had been made, it was declared that the most searching investigation had failed to disclose any evidence as to the truth of the charges made. The new superintendent has announced that hereafter any bruises or injuries a patient may have received before coming to the hospital will be described on the "history slip," so that the responsibility for subsequent injuries may be exactly located. It will be remembered that this is the very system which was promised by the authorities more than two years ago, after an investigation which followed the death of a patient in the insane pavilion.

PHILADELPHIA, PENNSYLVANIA, ETC.

An original method has been devised by a masseur of Philadelphia for acquiring the title "Doctor." Claiming to have graduated from a foreign university he assumed the title Ph.D., apparently hoping and believing that the title "Doctor" thus derived would be construed by physicians perhaps and patients particularly to mean "Doctor of Medicine." When confronted by statements from his assumed "alma mater" that he possessed no such title he abandoned the scheme.

Rigid Sanitary Rules in Chester.—A new Board of Health has been appointed in the city of Chester, Pa., and the mayor has instructed them to use the most vigorous measures to combat disease in the city. It has been alleged that proper care is not taken by physicians and others who visit the Municipal Hospital, hence more stringent measures will be instituted to prevent the spread of infection from this source. Vaccination and quarantine rules are to be rigidly enforced.

Miscellaneous.—DR. HARVEY CUSHING, of Baltimore, will deliver a lecture on "The Blood Pressure Reaction of Acute Cerebral Compression," a sequel to the Mütter lecture, before the W. W. Keen Surgical Society, Thursday, February 12, at 8 o'clock. The profession is cordially invited to attend.—DR. W. W. KEEN, professor of surgery at the Jefferson Medical College, recently received the degree of Doctor of Science from the Northwestern University of Chicago.

Philadelphia Society for Organizing Charity.—From the Twenty-fourth Annual Report (1902) of the Board of Directors of the Eighth and Ninth Wards Association of this Society we take the following excerpt:

There are many causes for the poverty existing in the Eighth and Ninth Wards. Intemperance takes the lead and is followed in its destructive course by desertions, lawsuits, imprisonment, the neglect of children, and in some instances by insanity and suicide. Sickness is a common cause, and brings many a thrifty family to destitution. Still another cause is the helplessness of the defective class. A few of this class are properly cared for in institutions, but many of them are considered ineligible for any of the institutions, and remain in their homes, contributing little or nothing to the support of the family. Idleness, another cause of poverty, when added to laziness, produces a class of people who live upon their wits, upon chance, upon friends—upon anything from which human parasites may extract a living. These people become public nuisances, and will continue to thrive as long as misguided benevolence allows them to live without work. The cooperation of the poor in caring for their poorer neighbors has been a great help to the society. They give of their limited means what they are often not able to give; they care for the sick neighbor as conscientiously as for their own sick, teaching a lesson of true charity.

SOUTHERN STATES.

School Medical Inspectors.—An amendment to the bill providing for 11 medical inspectors of the public schools of the District of Columbia to be appointed by the Board of Education at \$500 a year has been introduced into the Senate. It provides that these inspectors must have had at least five years' practice in medicine in the District of Columbia and must be appointed after competitive examination.

WESTERN STATES.

For Original Research.—It is reported that John D. Rockefeller will provide for the establishment of a large hospital in connection with the University of Chicago. It is rumored that he will give whatever amount will be necessary to carry out the idea of a comprehensive institution for original research into the causes and cures of disease. It is proposed to have an institution on the cottage order, one building being devoted to contagious diseases, a second to surgery, and the third to another medical field. Work in the projected hospital will be entirely apart from that at Rush Medical College. Research will be carried on by postgraduate experts. It is said the University officials refuse to confirm this report.

Michigan State Board of Health.—At a recent meeting it was decided that a committee of the State Board should confer with a similar committee of the State Medical Society, for the purpose of perfecting a bill to be introduced into Legislature, providing for the establishment of a State Sanatorium for the treatment of tuberculosis. In view of the fact that hydrophobia is widely disseminated throughout the State, it was recommended that municipal and township authorities be requested to order the muzzling of all dogs at large, and make and publish regulations to that effect. A short bill defining diseases dangerous to public health, and providing that the State Board of Health or some other competent body be authorized to declare publicly such disease dangerous to the public health under the law, was approved.

Increased Appropriation for Insane Asylums.—The State Board of Charities has prepared a bill which the Legislature of Illinois will be asked to pass, asking for an appropriation of \$5,005,890 for the 15 charitable institutions in the State. Of this amount \$3,647,000 is for "ordinary expenses," and \$1,358,890 is for special purposes. Two years ago the total amount appropriated for the same institutions was \$4,438,024.92. The increased appropriation asked for is based on the fact that

the previous appropriation was insufficient to meet the ordinary expenses of the institutions. The Legislature will be asked to appropriate \$75,000 for the Eye and Ear Infirmary of Chicago. This is for the purchase of additional ground and the construction of additional buildings for inmates suffering with contagious and infectious diseases.

Medical Legislation.—The following excerpt is taken from the message of the Governor of Michigan: The State Board of Registration in Medicine favors amendment to the medical law having in view both the elevation of the standard and the uniformity of the act in connection with medical laws of States which have taken an advanced position, in order that worthy and well qualified physicians and surgeons who have been legally authorized to practise under the laws of other States may be given the right to practise in this State without being forced to submit to a repetition of the examination which they have previously undergone. In order that Michigan may be able to take advantage of the proposed reciprocal relations, it will be necessary to raise the standard of medical requirements of this State to that of the States willing to enter into reciprocity.

Coal Famine and the Public Health.—The following, taken from the bulletin of the Chicago Health Department, is of interest as showing the pernicious influence exerted on the general health of large cities by the scarcity of coal:

Unrevised returns of mortality for the month of January, 1903, show an increase of 10.4% (or 344) in the actual number of deaths from all causes and at all ages, and of 11.4% in proportion to population, as compared with January, 1902, when coal was abundant at one-half the price or even less than that it now commands—when it can be obtained at all. These two facts are cited together because, in the judgment of the health department, the latter is the principal if not the sole cause of the former. A large proportion of the excess deaths is, as was stated in the bulletin of January 10, due to cold and exposure caused by the coal famine and which at that date had affected the health of fully 10%, or nearly 200,000 of the population of the city. The facts are so portentous and the situation so grave, that the commissioner makes them the feature of the present health bulletin. On January 19 the city council passed an ordinance declaring that "an emergency now exists in the city of Chicago which threatens the health and lives of citizens, owing to the scarcity of coal," and appropriated \$25,000 "to be expended by the department of health in meeting such emergency." At the same meeting an order was passed, authorizing and empowering the mayor "to appoint a committee of citizens to cooperate with the department of health in the purchase and distribution of coal," as authorized by said ordinance.

Plague in San Francisco.—According to the Public Health Reports, 93 cases of plague with 89 deaths have occurred in San Francisco between March 6, 1900, and December 11, 1902. In eight cases it was claimed that the patients had come from other parts of the State. The longest lapse that has occurred between cases is 92 days, during which time Chinatown was being cleansed by the State Board of Health; the next longest 72 days, which ended February 22, 1902. So far as is known, there have not been over five cases that are even probably contacts, and as to one or two of these the connection is doubtful as to whether it was contagion from one to the other or from a common source. An autopsy is performed in all cases suspicious of plague, such as acute buboes, pneumonia and acute febrile diseases, and also when the cause of death is not evident, as fracture of the skull, chronic tuberculosis, ascites, etc. In all cases of plague the usual and ordinary bacteriologic tests were made before diagnosis was established. When death occurs the body is buried in lime and the City Health Board has the room in which the person was found sick or dead closed, disinfected with sulfur, and a quarantine placed over it for 5 to 15 days. The Chinese have been urged to report even trivial cases, but thus far it has been impossible to secure their full confidence and cooperation. If they believe the case to be one of plague they rarely report it, because they fear the quarantine and the necropsy.

Colorado Medical Statute.—A joint committee composed of the chairmen of the Legislative Committees from the Colorado State Medical Society, Colorado Homeopathic Society, and the Colorado State Eclectic Medical Association have concluded that amending the defective parts of the present law is the most expedient, the most practical and probably the most attainable legislation. Therefore this joint medical legislative committee has harmoniously agreed upon the necessary amendments, an epitome of which is as follows:

FIRST—The repeal of the "ten year" clause.

SECOND—The adoption of an amendment increasing the fee for registration on diploma to \$10.00, and by examination to \$25.00, and further, providing for the maintenance of the State Board of Medical Examiners from fees received, instead of by appropriation.

THIRD—The adoption of a clear, broad, legal definition of what constitutes the practice of medicine.

FOURTH—The adoption of an amendment empowering the State Board of Medical Examiners to refuse and revoke licenses for immoral, dishonorable or unprofessional conduct.

To enable the committee to carry out such a plan it has been decided to request every member of the medical profession in the State to immediately remit to the secretary-treasurer of this committee, Dr. S. D. Van Meter, of Denver, the sum of \$2.00. It must be expressly understood that none of this money will be used in "lobbying." Absolute failure is preferred rather than recourse to such means to secure legislation which

is principally for the protection of the public, and for the benefit of our profession only in the satisfaction of raising the moral and educational standard of its Colorado members.

FOREIGN NEWS AND NOTES

GENERAL.

Rats and Plague.—After the discovery of the plague bacillus by Kitasato and Yersin, the remarkable susceptibility of rats to the disease became apparent from inoculation experiments. It was also found that the rats ate the bodies of patients dead from plague, thus inoculating themselves. Therefore cases of plague may appear suddenly in human beings, when it is afterward found that rats spread the contagion. Where many dead rats are found, an outbreak of the plague is to be expected. In an article in *La Médecine Moderne* for August 13, 1902, Olschanetsky, of Constantinople, has reviewed this subject with historic details. But epidemics of plague have been observed in which rats played no role. He advises preventing the introduction of rats from ships, especially those with disease aboard. For though an epidemic among rats cannot always be shown to have been the cause of an epidemic among human beings, it probably plays an important etiologic role in the propagation of the plague.—[*Baltimore Sun*.]

GREAT BRITAIN.

King's Tuberculosis Sanatorium.—The names of the successful competitors for the three prizes offered for the best essays on the construction of King Edward's Hospital for Tuberculosis have been announced. The first prize, \$2,500, was awarded to Arthur Latham, of London, with whom was associated as architect Mr. William West, of London; the second, \$1,000, was awarded to F. J. Wethered, of London, with whom were associated as architects Messrs. Law and Allen, of London; and the third, \$500, was awarded to E. C. Moreland, of Croydon, with whom was associated as architect Mr. G. Moreland, of Croydon. An advisory committee, the members of which were all prominent English physicians, was chosen to pass upon the merits of the essays, and specialists from all countries were invited to compete. In all 180 essays were sent in by foreign physicians. The essays which received the prizes are published in the *Lancet*, January 3, 1903.

CONTINENTAL EUROPE.

French and English Mortality.—Prof. Brouardel, of the French Bureau de l'Hygiène, states that the vital statistics of France that are available represent only about 13,000,000 out of a total of 39,000,000 of population and that the deathrate in 1900 was 21.9 per 1,000 and the birthrate 21.4. In England the deathrate for the same period was 18.2 and the birthrate 28.7, that is, France had 144,000 more deaths and 284,000 fewer births than would occur in the same number of English people. With regard to the causes of mortality it was found impossible to obtain particulars for comparison, except from towns comprising only about one-third of the total population, but these supply noteworthy figures. London, with its population of 4,500,000, has nearly twice as many inhabitants as Paris, with its 2,500,000. The general deathrate of Paris in 1900 was 20.6, that of London was 18.8. London had 86,007 deaths, Paris had 51,725 or about 4,500 more than London in proportion to its population. The most conspicuous excess was in pulmonary tuberculosis, from which there were 10,072 deaths in Paris as against 7,748 in London, or 4.01 compared with 1.75 per 1,000. From fever there were 912 deaths in Paris against 765 in London, or proportionately rather more than twice as many, while from diarrhea there was 3,178 deaths in Paris and 3,564 in London, or 1.27 compared with 0.78.

OBITUARIES.

John Morris, of Baltimore, Md., January 29, aged 79. He was a graduate of the Bellevue Medical College, New York City, and was also a licentiate of the Rotunda Hospital, Dublin, Ire., where he served as an interne. He was ex-president of various local associations, among which were the Medical and Chirurgical Faculty of Maryland; Maryland Inebriate Asylum; the State Lunacy Commission; the Maryland State Board of Health, and the Pennsylvania and Maryland Medical Society. In 1875 he was a delegate to the British Medical Association, which met in Edinburgh; to the Industrial Medical Congress, which met in Brussels, and to the French Scientific Congress, which convened at Nantes. He was for 30 years president of the city school board and served as postmaster of Baltimore during President Buchanan's administration. In 1855 he was presented with a gold medal by the citizens of Norfolk, Va., for his volunteer services in combating the yellow fever.

Morill Wyman, said to be the oldest physician in Massachusetts, died in Cambridge, Mass., January 30, aged 90. He was graduated from the Harvard Medical School in 1837. In 1833 he became adjunct professor of the theory and practice of medicine at Harvard College, but relinquished the chair after three years' occupation. He was a

member of the American Academy of Arts and Sciences and of many professional bodies. His writings on medical subjects were of wide range. He was elected an overseer of Harvard in 1875, and was given a degree of Doctor of Laws in 1885.

Henry Addison Mandville, of South Orange, N. J., January 31, aged 44. He was graduated from the College of Physicians and Surgeons, New York City, in 1891. He was a member of the New York Pathological Society, the New York Academy of Medicine, Hospital Graduate Society, Manhattan Surgical Society, and various other organizations. He was attending surgeon to the colored hospital in New York City until recently.

James M. Ridge, of Camden, N. J., January 30, aged 76. He was graduated from the University of Pennsylvania in 1852. He was a member of the Bucks County Medical Society, and of other medical societies and organizations. For a number of years he was connected with the New Jersey State Board of Health.

James H. O'Toole, of Charlestown, Boston, Mass., January 27. He was graduated from the Medical School of Maine, at Bowdoin College, Brunswick, Me., in 1880. He was a member of the Massachusetts Medical Society and of the Boston Medical Society.

Margaret T. Shutt, in Springfield, Ill., January 24. She was graduated from the Cornell University Medical College, New York City, in 1899. She had served on the medical staffs of Bellevue and Kings County Presbyterian hospitals, New York.

Alexander T. Gordon, near Sigmund, Culpeper county, Va., January 14, aged 70. He was graduated from the Medical College of Virginia, Richmond, in 1858. He served as surgeon in the Confederate army during the Civil war.

Irvin L. Benner, of Sellersville, Pa., January 25, aged 32. He was graduated from the University of Pennsylvania in 1893, and was a member of the Pennsylvania State Medical Association.

Samuel A. Work, in Vandalia, Mich., January 6, aged 60. He was graduated from the University of Michigan, Ann Arbor, in 1883, and was a member of the American Medical Association.

Thomas J. Grove, of Petersburg, West Virginia, February 1, aged 74. He was graduated from the University College of Medicine, Richmond, Va., in 1849. He was an army surgeon.

Isaac H. Shields, in Philadelphia, January 13, aged 64. He was graduated from the University of Pennsylvania in 1860. He served as surgeon during the Civil war.

John H. Xelowski, of Oklahoma City, Okla., in Decatur, Ill., January 16. He was graduated from the College of Physicians and Surgeons, Chicago, in 1900.

David C. Bryan, in Hot Springs, Ark., January 14, aged 42. He was graduated from the Central College of Physicians and Surgeons, Indianapolis, in 1887.

Marbury Brewer, of Baltimore, Md., January 24, aged 72. He was graduated from the University of Maryland School of Medicine, Baltimore, in 1850.

Charles B. Adams, of Vanceburg, Ky., died in Portsmouth, Ohio, January 14. He was graduated from the University of Louisville (Ky.) in 1893.

William W. Misner, at Tacoma, Wash., January 3, aged 48. He was graduated from the Hahnemann Medical College, Chicago, in 1883.

James M. Alexander, in Anabel, Mo., January 13, aged 40. He was graduated from the University of the State of Missouri, Columbia, in 1886.

George N. Gage, in East Washington, N. H., January 10, aged 51. He was graduated from the Boston University School of Medicine in 1877.

William Gibson, of Alexandria, Va., January 28, aged 73. He was graduated from the Pennsylvania Medical College, Philadelphia, in 1853.

Peter R. Everett, in Cleveland, Ohio, January 13, aged 68. He was graduated from the Jefferson Medical College, Philadelphia, in 1856.

Walter F. Randolph, of Bedford, Iowa, died in Chicago, January 4. He was graduated from the Rush Medical College, Chicago, in 1870.

William Mote, at Hog Point, Ind., January 9, aged 70. He was graduated from the Medical College of Ohio, Cincinnati, in 1856.

B. E. Jeter, probably the oldest practising physician in Southwest Virginia, died near Coyner's Springs, Va., January 30, aged 84.

Thomas B. Bush, of Lawrenceville, Ga., January 11, aged 33. He was graduated from the Atlanta (Ga.) Medical College in 1894.

W. C. Cundiff, in Somerset, Ky., January 6. He was graduated from the Vanderbilt University, Nashville, Tenn., in 1900.

P. M. Womble, of Baltimore, Md., January 30. He was graduated from the Jefferson Medical College, Philadelphia, in 1848.

Richard S. Markell, in Cloverdale, Cal., January 10. He was graduated from the McGill University, Montreal, in 1867.

S. B. Johnson, of Luzerne, Warren county, N. Y., January 29. He was graduated from the Albany Medical College in 1845.

Henry Helfrich, of Allentown, Pa., February 1, aged 99. He was the oldest resident of Lehigh county.

Fairfax Schley, of Frederick, Md., February 1, aged 79.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

A FURTHER NOTE ON THE PERINEPHRIC FAT.

BY

W. W. KEEN, M.D.,
of Philadelphia.

Since writing the note which was published in *American Medicine*, January 31 last, my attention has been called by Dr. Wyllis Andrews, of Chicago, to a monograph on Wanderniere, by Walkow and Deletzin, Privatdocenten in the Military Medical Academy in St. Petersburg, and published in Berlin in 1899 by Hirschwald.

In this elaborate monograph of 350 pages I find the two layers of the perinephric fat distinctly alluded to and described on pages 26, 27 and 32.

From it also I obtained two references of importance showing earlier descriptions of the same fatty layers. The first is a paper by Zuckerkandl in the *Medizinische Jahrbücher*, Vienna, 1883, p. 59. Zuckerkandl particularly describes the layer of connective tissue between the two layers of fat and calls it the "fascia retrorenalisis."

The second reference is to a paper by Gerota in the *Arch. f. Anatomie*, Leipzig, 1895, with two plates which illustrate distinctly the two layers of fat and the fascia between them. Both Gerota and Zuckerkandl give the name of "pararenal fat" to the outer layer.

In spite of these two papers, one even dating 20 years back, these two layers of fat seem to have escaped the observation of both anatomists and surgeons, hence I thought it well to call attention to the matter. Until my attention was called to Walkow and Deletzin's monograph, I was not aware that any such description had been published.

TREATMENT OF FRACTURES OF THE PATELLA.¹

BY

DAVID C. PEYTON, M.D.,
of Jeffersonville, Ind.

Fracture of the patella, while constituting only about 1% to 2% of all fractures, demands the most careful consideration on account of its close proximity to the knee-joint, and also in consequence of the very imperfect and unsatisfactory union of the fragments by the ordinary mode of treatment. The relative infrequency of the fracture of this bone is probably in part due to its small size and compact formation, as well as its convex anterior surface and the readiness with which it may be moved about in its position. It occurs more frequently in the male than in the female; the ratio being about five or six to one, and more frequently between the ages of 25 and 55. The very old and the very young are almost exempt from this fracture, but when occurring in extreme old age statistics show it almost always to be in the female, the youngest patient probably on record being five years old, reported by Hamilton in his 127 cases. Dittmer reports one case in a boy of 9.

The two potent factors in the etiology are muscular action and direct violence. I am convinced that the sudden and violent contraction of the quadriceps extensor is the cause of a large majority of these fractures and that only a relatively small percent are the result of direct violence. It is true that more than 60% of these fractures are of the transverse variety and it is equally true that the transverse are always the result of violent and sudden contraction of the quadriceps, while the vertical, stellate, comminuted, and compound are probably due to direct violence of one kind or another. The fracture by muscular action probably occurs when the knee is in a position of semi-flexion, for in this position the middle portion only of the under surface of the patella is resting on the anterior surface of the condyle. The action of the quadriceps at this time being almost

¹ Read before the twenty-eighth annual meeting of the Mississippi Valley Medical Association, Kansas City, Mo., October 15, 1902.

at a right angle to the surface of the patella, in case of a sudden and severe contraction serves as a most efficient agent in causation. It is probable that a small percent are due to combined effect of the muscular action and direct violence. It is difficult to estimate correctly the relative importance of the various known causes, for the reason that the statements made by the patient at the time of or after the injury are untrustworthy and misleading. The patient stumbles and falls after an effort to catch himself and an examination discloses a fracture of the patella. The patient, as a rule, is unable to give an intelligent account of the fall and especially of the point of contact, and he concludes he must have fallen upon the knee-cap, and no doubt this conclusion was reached by his knowledge of the fact that the patella was fractured. However, if we but bear in mind the very important part played by this muscle—that it is the great extensor of the leg, being united below in a single tendon attached to the patella, and that the entire anterior aspect of the femur is covered by it from the trochanters to the condyles—we can readily understand the important part played by it in the cause.

The displacement of the fragments depends largely upon the character of fracture, for those resulting from direct violence, such as the vertical, comminuted, and some oblique rarely show much displacement, for in this class of fractures we have rather extensive contusion of the soft parts, while only the minimum laceration obtains. It is in the transverse fracture that we have the most pronounced separation and general displacement of the fragments. It is in this class that we have the extensive laceration of the aponeurotic and fibrous coverings of the bone, as well as laceration of the synovial membrane of the joint and rupture of the prepatellar bursa. The joint soon fills with blood and exudate, which serves to further separate the fragments, and may cause a tilting forward of the distal fragment, and a little later, the gradual retraction of the ligamentum patellæ increases the separation. The fractured surface of the proximal fragment is often drawn in toward the cavity of the knee-joint, due to the action of the vasti fibers inserted into its sides. Other displacements, as the lateral and angular, are recognized later on. As a result of the increased stretching of the fibrous union we may have a lateral angular displacement. Anterior angular displacement sometimes occurs as a result of cicatricial retraction of the lateral soft parts. The associated injuries to the soft parts almost invariably result in opening the knee-joint, the lateral expansions and capsule being usually involved.

The diagnosis of fracture of the patella is comparatively easy, and only in rare instances do we meet conditions rendering a diagnosis uncertain and difficult. Sometimes we do not reach the patient until a considerable length of time after the injury, when we may find the joint greatly distended, and at the same time so little displacement of the fragments that a positive diagnosis is not to be thought of. The absence of crepitus also adds to the uncertainty, and notwithstanding the statements by some of our most eminent writers to the contrary, in my own experience and in the experience of others with whom I have discussed the question, crepitus is seldom a symptom, for the very good reason that in almost every instance the aponeurotic covering, if not actually torn, is stretched so as to admit of separation of the fragments, the covering dropping between the fragments, and this, together with the hemorrhage which always occurs, is quite sufficient to prevent crepitus. Usually, however, the fracture is readily recognized by sight and touch; the division of the bone, with more or less separation of the fragments with individual mobility, renders the nature of the injury unmistakable. The degree of loss of motion is dependent largely upon the extent of laceration of the lateral expansions. The distention of the joint comes on rapidly, the result of blood and serum effused into the cavity, and extensive ecchymosis of the surrounding tissues follows quickly.

The question of the expediency of treatment by open arthrotomy or the nonoperative procedure is as yet, in the minds of some, not settled, and as one of the enthusiastic advocates of the treatment by open arthrotomy, I am ready to admit that in some cases this plan is not advisable, and the non-

operative treatment should be employed. Of course in patients over 50 and in those in whom the physical condition is below the standard, I would not resort to the open method. Neither would I recommend the open arthrotomy when it is not possible to get the patient into a well-equipped hospital, or when the operation is to be done by other than a surgeon whose technic is absolutely perfect; for with the foregoing counter-indications, the dangers of sepsis, ankylosis, loss of limb, or possibly loss of life, are greatly to be feared. But with a healthy patient under 50, and a surgeon who will conscientiously carry out the slightest detail needed to secure perfect asepticity, and who is imbued with the true spirit of aseptic surgery, the patient will have a good joint by reason of perfect bony union, and in a much shorter space of time. The first essentials in the treatment of every case are to immobilize the joint by suitable posterior splint, elevate the foot and apply the ice-bag for three or four days to check effusion and limit inflammation, when a close-fitting roller bandage will be found of service. There have been a great many kinds of dressings suggested and tried, many of them having only historic interest, all having some points of virtue, but in most instances falling short of the prime object of treatment—perfect apposition of the fragments. This I do not consider possible in the nonoperative method, and the dressing that offers the nearest approach is the one to be employed. Personally I prefer securing the fragments in the best possible apposition and applying a shield of adhesive plaster above and below the knee in such a way as to maintain apposition of the fragments. Hamilton's method of a wooden incline plane is also good as a nonoperative procedure. In treatment by the nonoperative method the union is always necessarily fibrous on account of the interposing of fibrous tissue between the fragments, and no prolongation of the period of immobilization will secure bony union unless this is removed. Later we have stretching of the fibrous union, greatly reducing the usefulness of the joint. Open arthrotomy should not be done for eight or ten days following receipt of injury, as inflammatory action usually follows, so that the danger of infection is greatly increased by immediate operation. After application of the icebag and compress for some days, the plan I follow is to open the joint by transverse incision from condyle to condyle, exposing the fragments and removing all clots, freely irrigating the cavity with normal saline solution and suturing the edges of the torn aponeurotic covering with chromicized catgut. This brings the fragments into perfect apposition. The superficial incision is then closed with silkwormgut, without drainage, and the joint immobilized by a posterior splint, with either the plaster-of-paris or crinolin dressing (I prefer the latter on account of its lightness). This dressing is left on for about four weeks, when it is removed and passive motion begun. At the end of six weeks all restraint is withdrawn and the patient advised to walk and actively move the joint. It is not good policy, however, for the surgeon to resort to severe efforts to flex the joint beyond certain limits too early, for in so doing he is liable to destroy the union and reseparate the fragments.

It was my privilege a few months since to witness a case with Dr. Bullitt, of Louisville, in a woman with transverse fracture of both patellas. The patient had been standing on the pavement during icy weather of last winter, when, without warning, first one and then the other patella snapped, due, undoubtedly, to the action of the quadriceps in the effort to maintain an erect posture. Dr. Bullitt operated in about ten days after the accident, employing the open method, and closing the torn fibrous coverings with chromicized catgut, using no wire to hold the fragments, doing as pretty an operation as it has been my pleasure to see with the most satisfactory results.

In my own cases in which I have resorted to the open method the results have been most satisfactory. Only a few months ago a man of 48 had a transverse fracture of the patella and I employed the open method, getting a perfect joint.

My friend, Dr. Rodman, of Philadelphia, is a strong advocate of the treatment by open arthrotomy, and has operated on some three or four patients in the past year by wiring, and with good results. I do not think, however, the insertion of wire through the bony substance is necessary to hold the frag-

ments in apposition, but on the contrary, the amount of handling and bruising of the parts which this method entails makes it inadvisable. Of course, in old cases of fracture with much disability from nonunion, wiring is probably best. After all, the prime indications in the operation are to remove fibrous material interposed between the fragments and to clear the joint of blood clots and to perfectly appose the fragments. In all cases of compound fracture the operation should be done immediately.

To summarize: By the nonoperative procedure we always obtain a fibrous union. This union, which at first may leave the fragments only half an inch apart, in a few months may not only stretch so as to allow a separation of three or four inches, but may also stretch unevenly, rendering the joint almost useless. The patient is confined in dressing for months, with a much longer period of disability, and in the end has a very imperfect joint. This, in case he is a laboring man with a family to support, is a very serious matter. The treatment by open arthrotomy always gives a bony union, and at the end of four weeks the patient is out of dressing, and in six weeks should be walking; and in a short time is able to resume his work, and this, too, with a good joint.

THE METRIC SYSTEM IN USE.

BY

CHARLES PLATT, M.D.,
of Philadelphia.

Those of us who know the metric system to be the only scientific system of weights and measures, often experience a mild wonder that the old absurdities should still be adhered to by the majority. The fact can be explained only by the wrong methods used for the popularizing of the system, by the improper use of the system in the journals, and, to go further back, by the false method of instruction in the schools. The error, it seems to me, lies in the idea that we must forever compare the new with the old. We are taught that 1 foot = 0.30479 meter, that 1 inch = 2.53995 centimeters, that 1 meter = 3.28089 feet, that 1 grain = 0.06479 gram, etc.—no wonder the method fails to appeal to the beginner when the beginning is made from so false a start. This method of comparison is not natural. Instead of expressing to us, as it should, a definite conception of space, of weight, or of length, the statement of the metric unit only calls to mind a more or less hazy memory of an equivalent imperfectly learned and uncertainly remembered.

I would protest, then, against the use of the comparison in writing, but if this is to be retained I would appeal for care in the manner of expression. Medical dosage is by no means so exactly determined as to call for the elaborate fractions so frequently found in our journals, and, it should be remembered, it is not sufficient that we declare the decimal system a simple one, we must demonstrate that fact by stating our metric units in simple terms.

When a man writes "chloral hydrate, 0.65 gram to 0.97 gram (10 to 15 grains)," it is evident that the medicine was administered in the grain dosage, despite the parenthesis, and that the statement of the corresponding metric dose is the result of calculation or of reference to a table of equivalents. Certain it is that the statement as made advances the use of the metric system not at all, and, indeed, the contrary effect is produced, for, "10 to 15 grains" requires a less effort of the memory than does "0.65 gram to 0.97 gram." Is the proper dosage of chloral hydrate so exactly limited, however, as to call for this exact equivalent? Would it not be as useful to state the dose as from 0.5 to 1.0 gram? Exact equivalents profit nothing and will forever prevent the attainment of the desired end. Approximate equivalents are easily remembered, exact equivalents are not, and every time one meets with the latter in reading there is an involuntary pause and the continuity of the sentence is lost in an effort to compare the doses critically.

There is another feature of the case that requires notice and that is where equivalents are stated the writer should observe the utmost care that the statement in the less familiar system should be correct. In a single recent article, for instance, one

finds the following: "0.03 gram ($\frac{3}{20}$ gr.)," "0.02 gram ($\frac{1}{50}$ gr.)," "0.03 gram ($\frac{1}{2}$ grain)," "1.2 grams to 2.6 grams (30 grs. to 40 grs.)," "2 grams (30 grains)." It is evident that all of these figures can not be correct, and a pause is required to enable the reader to discover the errors. In this particular example the variations are, it is true, small, but a similar degree of carelessness might easily attain to a mortal dignity.

In a recent abstract the following prescription was given:

Tinct. aconite rad.	cc.	0.32	mv
Syrup. aetheris nitrosi	cc.	11.25	ʒijj
Liq. ammonii acetatis, q.s. ad.	cc.	.90	ʒijj
M. Sig.—cc. 7.5 (ʒij)	in water every hour or two.		

Suppose, with a praiseworthy desire to be up to date, some innocent reader should copy here the metric prescription; one of two things might happen, the druggist might return the prescription for correction, or he might ignore the "q.s. ad." and make up the prescription as it otherwise stands, in which case the patient would receive something over 3 minims of the aconite tincture instead of the $\frac{1}{2}$ minim intended.

Another recent abstract gives

Thiocol	9	7 grams (2½ drams)
Syrup of bitter-orange peel . . . . .	.93	3 grams (3½ ounces)
Boiled water . . . . .	.85	5 grams (5 ounces)

And these are fair examples of what one constantly reads!

Would it not be well to revise the school instruction in weights and measures? Would it not be well to use greater simplicity in the comparison of the metric system with the old? Would it not be well always to use the simplest metric expression possible? Would it not be well to use greater care in the statement of metric formulas?

To those who have found that "the art which is long" leaves no time for unnecessary labor, and who believe that simplicity can be attained only by the exclusive use of the decimal system, these suggestions, commonplace though they be, are offered with the hope that the desired goal may be brought thereby somewhat the nearer.

REMOVAL OF FOREIGN BODY FROM THE ESOPHAGUS.

BY

R. J. WARD, M.D.,
of East Barrington, N. H.

A patient recently came to my office complaining of having swallowed a fish bone between three and four hours previously. It had lodged in the esophagus just below the larynx, and caused considerable mental and physical distress. A probang not being at hand I was at a loss what to do until I recalled a statement once made by Dr. Gile, Professor of the Practice of Medicine in the Dartmouth Medical College, when lecturing on diseases of the intestinal tract. He said that a snarl of thread swallowed and then withdrawn was very effectual in removing foreign bodies from the esophagus. I acted upon this suggestion, using ordinary grocer's twine for the snarl, and a fish bone an inch in length was successfully removed.

I recently treated a powder wound of the hand as suggested in *American Medicine* for July 6, 1901, with absolutely negative results, the H₂O₂ having no effect whatever on the powder stains.

Inspection of Barber Shops.—A bill which is to be introduced into the Massachusetts Legislature makes it unlawful for any person to follow the occupation of barber in that State unless he shall have first obtained a certificate of registration. Such certificate will be granted after the candidate has successfully passed an examination given by a Board of Examiners appointed for this purpose. This board, consisting of three persons who have had at least five years' experience as barbers, will be appointed by the Governor. The eligibility of its members as to the knowledge of their profession is to be decided by the State Board of Health. Their term of service will be three years. This board is to prescribe such sanitary rules as it may deem necessary, with the approval of the State Board of Health, and it is authorized to annul the certificate or permit of any barber neglecting to practise his occupation in a manner conducive to the sanitary interest of the public.

ORIGINAL ARTICLES

THE SURGICAL TREATMENT OF PUERPERAL INFECTION.¹

BY

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It is not at all surprising that the wonderful results which have been obtained in the treatment of pelvic inflammatory diseases by surgical means should have led gynecologists to think that much might be done by operation for the relief of similar conditions following confinement or abortion. Much interest has been aroused in this subject of late. At the Congress of Gynecology and Obstetrics, held in Rome this last summer, the question of hysterectomy for puerperal infection was very carefully discussed, and, incidentally, other operations under similar circumstances received some attention. That certain operations can be done with benefit seems to be admitted, but others are still *sub judice*, while some are condemned entirely. It is my purpose to go over the whole ground and to discuss briefly each of the operations which have been suggested.

That there are different infections during the puerperium is now well proved. The various germs act in different ways, and, therefore, produce conditions calling for different surgical procedure. The saprophytes confine themselves to dead material and do not penetrate deeply into living tissue. The commonest and one of the most deadly germs, the streptococcus, not only penetrates tissue deeply, but does it so rapidly as almost to defy arrest. Sometimes it goes by the lymphatics; sometimes by the veins; and often gets into the peritoneal cavity and into the blood. If it is circumscribed, either in the peritoneum or the connective tissue, it produces abscess; in the veins it causes suppuration, thrombosis, and metastatic abscesses; while in the peritoneal cavity it may set up an adhesive or a suppurative inflammation of greater or less extent. The gonococcus travels mostly by surfaces. The tubes are, therefore, often affected, that not being the case in streptococcus infection. The gonococcus infection generally, though not always, appears late—10 to 12 days or more after labor—and is usually circumscribed and not very virulent; though this is not always the case, for I recently saw, in consultation, a pure gonococcus infection fatal and with a temperature of 111°. Gonorrhoeal peritonitis also occurs. Time forbids my saying more on pathology, interesting as it may be. The colon bacillus, Löffler's bacillus, the typhoid bacillus, the staphylococcus, and others, sometimes play an active part in the production of these important conditions.

The operations which have been generally recommended or suggested are:

Curetage.

The removal of ruptured or inflamed tubes.

The removal of infected fibroid or ovarian tumors.

The opening or removal of ovarian abscesses.

The opening of parametric abscesses.

The opening of the peritoneum for exploration; for septic peritonitis; for vaginal drainage in early peritoneal infection.

Hysterectomy, vaginal or abdominal.

Removal of thrombosed and infected veins.

Curetage.—Most infections begin in the uterus, and produce at once an inflammation of the lining membrane. This endometritis, depending on the character of the infection, may be either putrid or septic. If portions of the placenta or membranes be retained they are almost certain, sooner or later, to become the nidus for a saprophytic infection with a resulting stinking dis-

charge and marked constitutional symptoms. In a true septic endometritis the bad-smelling discharge is wanting, though the systemic poisoning may be more marked. In either case the exact nature of the infection should at once be determined by Döderlein's or Williams' method. After this the interior of the uterus should be explored, and if the examining finger finds anything within the uterus, or any roughness, then the offending body must at once be removed. For this, most surgeons use a curet, but I very much prefer the curet-forceps or a forceps of my own devising, modeled on Luer's polypus forceps. With this, pieces of placental tissue can be readily removed, after which the surface may be gently cureted, disinfected, and packed with gauze.

In septic endometritis, when there are no foreign bodies and a perfectly smooth lining membrane, I can not see how any good can come from the curet. The septic germs travel so rapidly that it will be impossible to get out all the infected tissue unless the operation is done within a few hours or minutes of the onset. That the curet has done much harm in these cases I truly believe, and, therefore, would not ordinarily advise its use, except in putrid endometritis.

It is in the cases of mixed infection that the curet must be handled with discretion. One thorough scraping which leaves a smooth surface, followed by a long douche of 1 dram of Churchill's tincture of iodine to the pint, or the careful washing out of the uterus with hydrogen dioxide or some other good antiseptic, succeeded by a full packing of the uterus with iodoform gauze, should suffice. This should be followed by a culdesac operation, and the curetage not repeated, as there will be no necessity if it is well done at first, and no benefit in a repetition if the germs have penetrated deeply into the uterine tissues. Very deep curetage may do more harm than good by breaking into or removing the reaction layer, which is nature's way of offering protection against the entrance of germs into the tissues or system. The rule regarding curetage, then, should be, do it only when clearly indicated; do it thoroughly, but not roughly or too forcibly, and then do not repeat.

Removal of Ruptured or Inflamed Tube.—One fallopian tube may be perfectly healthy and allow of the passage of an ovum, while the other is the seat of a purulent inflammation. During labor the pus tube may be so injured as to start up an acute inflammation, or may be even ruptured, allowing the pus to escape into the peritoneal cavity. The history of the case must be our chief reliance in making a diagnosis. Should we be able to recognize such a condition I think all will agree that the abdomen should at once be opened, cleaned and the diseased tube removed.

Infected Fibroid or Ovarian Cyst.—One of the most dangerous conditions which we can meet is the infection of a fibroid tumor as the result of an intrauterine infection. This is more apt to come after abortion than after labor at term. As a result of the presence of the tumor retention of the secundines is quite apt to occur. Septic endometritis is then pretty certain to follow, with a resulting infection of the tumor. Septic infection in the presence of a uterine fibroid, following labor, and especially an abortion, should be an almost certain indication for prompt hysterectomy. It has been my fortune to see two such cases, both of which proved fatal from delay, while I am sure both patients would have been saved had operation (*i. e.*, a hysterectomy) been allowed early.

A few cases of the infection of an ovarian cyst have been reported. Such a condition should mean prompt removal, not only of the cyst, but also probably of the uterus, though the latter step should be governed by the condition of the case.

The presence of any kind of a newgrowth in a puerperal woman should lead the attendant to the greatest watchfulness and care.

¹ Read before the Cincinnati Obstetrical Society, January 9, 1903.

The Opening of Ovarian Abscesses.—Dr. Henrotin, of Chicago, read a paper in 1895 before the American Gynecological Society in which he advocated early operation by the vagina in acute pelvic inflammation, postpartum or otherwise, for the emptying of parametric and ovarian abscesses. While I have operated in this way in the acute stage of such inflammation I have never met the kind of cases which he described. The large number which he reports would seem to indicate that they are very common, but my experience does not agree with his. I have seen acute inflammation of the tubes (gonorrhoeal) greatly benefited by early vaginal operation and drainage. The patients, however, were not cured. This is another thing and does not belong in this paper. Henrotin's operation is quite different, both in technic and in indications from Pryor's, to be referred to later. Henrotin's paper should be carefully studied, for its suggestions seem to be most excellent and should be followed by those seeing this class of cases.

Parametric Abscesses.—How best to treat these patients, except in the early stage, as suggested by Henrotin, I have not determined to my entire satisfaction. Bitter experience has taught me not to open the abdomen when there is evidence of acute suppuration postpartum. Such an infection is almost certain to be streptococcal in its origin, and to let free acutely infectious streptococcal pus into the abdomen is almost sure death. The mass may be one-sided and feel like a pus-tube, but don't be deceived. If necessary for a diagnosis, open through the vagina; explore and drain, opening the abscess if possible through the vagina without opening into the healthy peritoneum, as Henrotin suggests, or wait until the abscess gets large enough to show a fluctuating spot in the vagina and then open and drain.

Sometimes these abscesses are far out in the broad ligament near the pelvic wall. In that case they can best be reached by an incision inside of Poupart's ligament outside of the peritoneum. It may be necessary to open the abdomen in order to make an accurate diagnosis.

Should an abscess in the broad ligament be found on opening the abdomen, it is best to try and open it, with one hand in the abdomen as a guide, either into the vagina or at the groin, and not to open it into the abdomen. The reason has already been given. This I have succeeded in doing with good results. These are often difficult cases to manage, and cannot be treated like ordinary pus-tubes or ovarian abscesses.

Exploratory Laparotomy.—In many cases of puerperal infection, we may be in doubt as to the exact nature of the lesions present. The question will then come up as to an exploratory laparotomy for diagnostic purposes. On general principles, I should be entirely opposed to such a procedure. I object in these cases to operating unless there is some recognizable lesion revealed by an examination, under an anesthetic if necessary. To open the abdomen in the hopes of finding something which can be treated in this way seems to me wrong, and I have never done it. As Hirst says, "The surgeon should demand some tangible evidence of those forms of sepsis which are amenable to surgical treatment" before operating. Hirst also says that "an exploratory abdominal incision should be made, as a rule, only when it is desired to determine if a pelvic mass presumably containing pus is situated within or without the peritoneal cavity, and if the abscess had better be evacuated through the abdominal cavity or extraperitoneally." This agrees with my own views already expressed in another part of this paper.

Septic Peritonitis.—When purulent accumulations within the abdomen, either encysted or free, can be made out, or are strongly suspected, then the abdomen may be opened (perhaps under cocaine) and the abdomen washed out and drained. A free incision must be made, and large quantities of hot saline solution used. Possibly packing the pelvis with sterile gauze according to

the method employed by Joseph Price may do good. Dr. Price assures me, in a very recent letter, that he has saved many such cases, making a four-inch incision and putting in a "cofferdam" of sterile gauze after thoroughly washing out. He adds: "The puerperal cases are the most dangerous and most difficult to save. The peritoneum may be greatly soiled, but a wash and drainage will save them after many of the common practices have failed."

By the old methods only a very few (Zweifel, in Rome, mentioned two) of the cases of diffuse peritonitis have been saved; but, nevertheless, if seen within the first 24 hours every case should have the chance to be derived from an operation. Most of the cases which have been saved have probably been those in which the pus was encapsulated (Zweifel). The results obtained by the open method make it imperative on every one to try it. The diagnosis is often very difficult.

Vaginal Drainage Early in Septic Infection.—We owe this method of operating to Dr. Wm. R. Pryor. The originator of the method applies it to all cases in which he cures for puerperal endometritis. The reason for it is that although the endometritis may begin as a simple putrid or saprophytic inflammation, it is apt very soon to be converted into a true septic disease by the advent of some of the septic germs, which find a good culture medium in the discharges already present.

Fearing that a mixed infection may be present, or may be soon introduced, and that the septic infection may run away from the reach of the operator, he seeks to head it off by draining and disinfecting the pelvic peritoneum. After thoroughly curetting and packing the uterus with iodoform gauze, he opens into the culdesac of Douglas. He then gently palpates the adnexa, liberating all adhesions and freeing the individual organs. The next step is to pack the pelvis as far as the fallopian tubes with iodoform gauze. In this way an immense quantity of serum is drained away. He combines the use of large quantities of salt solution with the operation, for the purpose of stimulating the kidneys and supplying fluid to replace that drained away.

While it is perhaps going too far to say that this operation is indicated in all cases when it is necessary to curet, it is not too much to say that in every case of septic endometritis, either pure or mixed, if seen before the broad ligaments are involved or a general peritonitis set up, the operation should be done. If the case is seen too late for this kind of drainage, then the culdesac may still be opened, as suggested by Henrotin, for the purpose of letting out accumulations of pus, either in the connective tissues, ovary, or peritoneal cavity, as the case may be.

This operation seems to be a real advance, and has given such good results in the hands of its author as to warrant its further trial. I have tried it a few times, with good results when it was done early enough. This is the all-important point. Promptitude in operating is an essential to success; delay may be fatal.

Hysterectomy.—We now approach the most important question connected with the whole matter. Is it ever justifiable to remove the uterus when it is seriously infected postpartum? This was one of the questions discussed at Rome, and the almost unanimous opinion was that, as yet, the indications are too undetermined, too vague, to allow of this operation being done very often. Fehling, by letter, learned that out of 94 prominent gynecologists 41 had never done this operation, while 53 had done 61 operations, with a mortality of 55.7%.

There were 19 abdominal hysterectomies with 31.5% mortality.			
" " 33 vaginal	"	"	69.6% "
" " 4 supravaginal	"	"	50% "
" " 4 following abortion	"	"	75% "

The most striking fact in this table is the great mortality in the cases of vaginal extirpation over the abdominal.

Fehling raises the question, since according to different statistics from 18% to 5% only of patients with puerperal infection die as the result of these operations, were not more lost than would have perished if left alone. He says that hysterectomy in general septicemia is useless; that the only rational indication is when the source of the infection or intoxication is limited to the uterus. This can only come from the retention of the placenta or secundines, which cannot be otherwise removed, or from sloughing fibroids. Such indications, he thinks, are very rare. Leypold believes that hysterectomy should be done only when all the symptoms show that the uterus alone is the seat of the active source of the infection, and when all other means have failed.

H. Treub collected 724 cases of severe puerperal infection in his clinic, of which 34 terminated fatally, and he concludes that only two of these could have been helped by hysterectomy.

Tuffier says that the great difficulty is to determine when to operate—to act too early is a mistake; to delay until too late makes it useless. Pinard dwelt on the difficulty of deciding on the proper indications. He admitted only three indications: the retention of putrid secundines, a sloughing fibroid, and perforation of the uterus. The retention of a decomposing placenta could only occur in cases of an excessively adherent placenta, such as is very rarely seen, or in cases of abortion when the uterine canal is blocked by some kind of a growth so that the interior of the uterus cannot be reached. If the secundines, under these circumstances, are not expelled and later become infected, a hysterectomy seems to be the only way out of the dilemma. The question of sloughing fibroids has already been considered. In cases of dissecting metritis, or of abscess-formation in the uterine walls, hysterectomy might be indicated; but there are two difficulties which stand in the way—one is the difficulty of diagnosis, and the other is the fact that under these conditions the surrounding peritoneum and connective tissue are quickly infected through the lymphatics, and the veins are also often involved.

When we consider all the difficulties surrounding these cases: the difficulties of diagnosis; of determining the time when the operation should be done; the weakened condition of the patient, with high temperature and feeble and rapid pulse—we must conclude that "he who operates often operates too much."

As yet science has not given us any sure means of determining either the time or the indications, and we must wait patiently for further investigations to settle some of the mooted points. Fortunately, the acknowledged methods are very often sufficient. Douches, curetage, drainage, packing with iodoform gauze, and a certain medication, in the majority of cases serve to bring the patient safely through. It is a disgrace that these cases still occur as often as they do. The profession is somewhat at fault for not using careful prophylaxis, but so long as women are delivered by ignorant and dirty midwives, and in unclean, often filthy, surroundings, cases of infection will occur. It must be our object to see that these conditions are ameliorated as much as possible by the enforcement of proper tenement-house laws and by laws for the proper supervision and education of midwives. Midwives there will be so long as we have a large poor foreign population. While we may wish to do away with them is it not better to acknowledge the necessity and to seek to rectify the trouble as much as possible rather than to let it go on without any supervision or control?

The Removal of Infected and Thrombosed Veins.—One other surgical procedure has been suggested and carried out in bad cases of puerperal pyemia. These cases are essentially chronic and therefore give time for careful study. A. Sippel¹ described these cases and advised the removal of the uterus and with it the ovarian and the uterine veins.

He claims that it is not the infection of the uterus or the metastatic foci which gives the repeated chills, but the accumulation of pus and toxins in the veins, which from time to time make their way into the general circulation and cause the chills. If this source of poisoning could be removed then the other results of the infection might get well and the patient be saved. Freund, Brunn, Trendelenburg, and Zweifel have all operated to remove the veins, both the ovarian and the hypogastric, under like circumstances. They do not consider hysterectomy necessary, but remove the veins even without opening the abdomen, by an incision in the groin. To get at the ovarian veins, however, the abdominal cavity must be opened and the veins sought under the posterior peritoneum. The veins must be opened, the clots removed, and then the veins tied as near the large vessels as possible.

Trendelenburg¹ reports the following case:

Patient aborted September 6, 1901. Chills and fever followed. September 19 parametric abscess opened per vaginam. October 12 excision and ligature, extraperitoneally, of the right hypogastric vein. No chills for ten days. Chills recurred. November 12 ligature and resection of 5 cm. of the ovarian vein. Clot contained streptococci. No more chills. November 28 opening of a metastatic abscess in the right shoulder. Recovery.

I relate the case, as it well illustrates the character of the affection and the method of treatment. So far as I have read very few cases have been done in this country, and it is time that we paid more attention to so important a subject. These cases generally prove fatal. Moreover, they give one plenty of time for a careful diagnosis and for securing the best advice and operative skill. They differ materially from the more acute cases and seem to offer a proper field for surgical intervention. Sippel advises that the abdomen should be opened in every case, because in this way the entire field can be carefully gone over and all the affected veins removed. This method must certainly be followed if the operator considers it necessary to remove the uterus at the same time. Zweifel admits that we will meet cases in which the disease has advanced too far for a cure, as when, for example, the thrombus has reached the common iliac vein. He insists, also, on the extirpation of the veins, and not simply on their ligature. He also insists on abdominal section, and says that from the celiotomy alone none of the patients will die.

I have said nothing about the removal of suppurating tubes and ovarian abscesses of gonorrhoeal origin occurring late in the puerperium. Pus-tubes usually tend to become chronic and make up a considerable share of the operative work of the gynecologic surgeon. It is seldom necessary to operate on them within the month following labor. The only important point in this connection is that, as I have already said, these cases must be carefully diagnosed from parametric abscesses, so as to avoid letting acutely infectious streptococcal pus escape into the peritoneal cavity.

Ovarian abscesses are more common and may demand operation earlier in the puerperium. It is my belief that these cases should, if they fluctuate, be opened through the vagina rather than through the abdomen, as the pus is very apt to be acutely infectious and to lead to general diffuse peritonitis.

I have now gone over all the operations which have been proposed for the relief of the conditions resulting from infection during the puerperium. While the more radical operations, except under very special conditions, do not seem to hold out much encouragement, the milder operations, if properly employed, are full of promise and hope. There is no disease which so appeals to our sympathies as this. It seems so unnecessary, coming as it does after physiologic process. We know so well that with proper care it is generally avoidable, and that its presence is due either to ignorance, neglect, or the accident of a pernicious environment.

¹ Zentrbl. f. Gyn., 1894, No. 28.

¹ Sippel, loc. cit.

We must meet, then, every suggestion for its cure with a cordial interest, examine carefully into its merits, and finally reject or adopt it as reason and experience may dictate. We cannot afford to neglect any suggestion, no matter how startling it may be, without careful consideration, with the hope that, at last, we may be able either to banish the disease entirely, or else to meet it satisfactorily at its inception.

RELATION OF THE INNERVATION OF AN ORGAN TO THE INFLUENCE OF SUPRARENAL EXTRACT UPON IT.¹

BY

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(A preliminary communication from the Rockefeller Institute for Medical Research.)

Ever since Oliver and Schaeffer discovered that the intravenous injection of suprarenal extract causes a considerable rise of blood-pressure, it was stated by many investigators that subcutaneous injection of the extract exerts no influence upon the blood-pressure. The rise in the pressure lasts only a few minutes, and it is generally stated that it is neither preceded nor followed by any lowering of the normal blood-pressure. As a reason for the failure to effect an influence by the subcutaneous injection, it is assumed by many writers that the tissues oxidize the suprarenal extract. We have, however, to record the fact that the prolonged contact of the blood with the extract does not deprive it of its effect upon the blood-pressure. Furthermore, a subcutaneous injection of the suprarenal extract is effective in other respects, for instance, it causes muscular paresis or paralysis or even death, and from recent investigations of F. Blum and others, we know that subcutaneous injection causes temporary glycosuria. We would then have to assume that the oxidizing effect of the tissues is restricted to the blood-pressure raising constituent of the extract.

In a series of experiments with intravenous injections of adrenalin in rabbits in which the bloodvessels of one ear were deprived of the vasomotors, we observed that the blanching of the ear of the operated side lasted a good deal longer than on the normal side. Furthermore, after a few minutes of blanching, the ear on the normal side became perceptibly more congested than before the injection of the adrenalin.

For an explanation of these phenomena we have formed a working hypothesis which we shall not discuss here extensively, but of which we shall mention that it contained the assumption that small doses of the extract favor vasodilation when the central nervous influence is intact; when the bloodvessels are deprived of central nervous control, however, they affect chiefly constriction.

From this new point of view we began to study anew the effects of subcutaneous injections, expecting that the slow absorption will permit the entrance of the extract into the blood only in small doses at a time. From our long series of experiments we shall mention to you only the chief results which we hope to be able to demonstrate.

Briefly stated they are as follows: In all cases in which either the sympathetic was resected, the ganglion removed, the third cervical cut, or when all vasomotors together were eliminated, the subcutaneous injection of a sufficient dose of adrenalin causes invariably a distinct constriction of the bloodvessels of the ear. The constriction sets in a few minutes after injection, progresses slowly, and lasts for many hours, sometimes not returning to normal till the following day. The degree of the

constriction rarely reaches that which is observed for a few minutes after intravenous injection. When the operation is performed only on one side, the normal ear does not take part in the constriction unless the injected dose is very large and the animal very young.

As a rule we see, on the contrary, a more or less distinct widening of the bloodvessels of the normal ear; they remain either constantly dilated for some time or the rhythmic changes occur more frequently, the dilation being the predominant feature. The dose which favors dilation in the normal ear has to be smaller than that which causes constriction in the operated side.

Another point of great interest is the behavior of the pupil. Lewandowsky, Borouttsau, and Langley have reported that intravenous injection of the suprarenal capsule causes dilation of the pupil which lasts less than a minute. We have observed that when the sympathetic is cut a subcutaneous injection of adrenalin causes a dilation of the pupil on the operated side which can last an hour and longer. It is a remarkable fact that such an effect does not take place if an injection is tried on the day of operation.

Of great interest and possibly of great practical importance is our experience with instillation into the conjunctival sac. Many observers have stated that instillation has no effect upon the condition of the pupil. We have established the fact that when the sympathetic is cut instillation will cause a dilation of the pupil lasting for some time.

Our results demonstrate in the first place that the suprarenal extract which in the normal animal causes by subcutaneous injection no effect upon the pupil and nearly no constricting effect upon the bloodvessels, causes a distinct and lasting effect when the sympathetic nerve is cut. In other words, a substance which exerts no effect upon a normal organ can exert a considerable effect of long duration if this organ be deprived in some way of a nervous control. This appears to us to be a principle of fundamental importance. For instance, any pharmacologic product, the effects of which are usually studied on normal animals, can exert an entirely different effect on diseased conditions which involve a diminution of nerve influence. The same applies to toxins; the primary effect might be different from what we know, if the innervation of one or the other organ be impaired. In fact, all the normal metabolic products, just like suprarenal extract, might cause pathologic phenomena when there is a primary derangement of the innervations of some organ.

That the easy method of instillation of adrenalin into the conjunctival sac might be of diagnostic value regarding the efficiency of the sympathetic innervation is quite obvious. It has already been of some help to us and we hope to be able at some future time to report positive results.

METHODS OF CLOSING THE ABDOMINAL INCISION.¹

BY

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Some of the great problems of surgery have been solved, and we are now mostly concerned in the perfection of operative technic. Success is only achieved through patient attention to every detail. The frequency and benefaction of surgery of the abdomen renders a study of any of its various phases of great practical value.

The one step common to all abdominal sections, and

¹ Presented, with demonstrations, before the New York Pathological Society, January 14, 1903.

¹ Read before the Middle Tennessee Medical Society, at Lewisburg, May 15, 1902.

which I esteem to be of very great importance, is the closure of the abdominal incision. The frequency of hernia following section is more than it should be, and I believe it can be very much reduced.

The fact that over 400 cases of ventral hernia were admitted to the Hospital for the Ruptured and Crippled in New York in six years gives an idea of the unpleasant frequency of this sequel. It is difficult to collect accurate statistics as to this accident. It does not result until months or years have elapsed; the patient often applies to another surgeon; it is almost impossible to get the data of all cases. Abel,¹ of Leipsic, who has given in a monograph of 98 pages the most thorough and exhaustive study of this question extant, offers the following: In 665 cases followed up, in which celiotomy was performed in Zweifel's clinic 1887-1894, among those in which hernia occurred, 38% appeared in the first six months; in 26% in the second six months; in 13% in the second year; and in 23% still later.

A number of eminent surgeons have admitted 10% of hernias following the through-and-through suture, which is employed in a large proportion of celiotomies today. The 665 cases of primarily healed wounds previously mentioned as collected by Abel¹ gave the following analysis:

Button suture, 61 cases; 18 hernia.....	29%
Muscle suture, 25 cases; 6 hernia.....	24%
Fascial suture, 254 cases; 20 hernia.....	8.0%

The lowest percentage of hernia was in the group of 50 cases in which the fascia was united by cumol catgut; only 3 hernias occurring, or 6%, prior to 1894.

To minimize the possibility of this occurrence should be the earnest endeavor of every man who has occasion to open the abdomen, and it is the purpose of this paper to analyze the methods by which this may be accomplished.

It may be admitted at the outset that no plan of closure can absolutely restore the structures to their original condition, because the strong fibrous interlacement of the aponeurosis of the sheaths of the recti muscles cannot be restored; but by a careful imitation of nature's arrangement as nearly an ideal result as possible can be obtained.

The first and greatest aim in the closure of the incision, and at the same time the greatest prophylactic against hernia, is the aseptic healing of the wound in its entirety. I. S. Stone estimates that from 8% to 10% suppurate. Abel¹ observed the following results in suppurative cases:

Of 50 cases with simple button suture 34 hernias resulted, or 68%
Of 27 " " " muscle " 18 " " " or 64%
Of 52 " " " fascial " 16 " " " or 31%

Roughly, therefore, hernia follows in from $\frac{1}{3}$ to over $\frac{2}{3}$ of all infected wounds. Of 49 cases in which the degree of suppuration was known, in 33 in which it was superficial only, 15 hernias followed; whereas in 16 cases of extensive suppuration hernia resulted in every instance.

Aside from obtaining and maintaining a rigid aseptic technic throughout, there are several precautions to be taken with the wound. All oozing should be absolutely controlled. Forcypressure usually suffices, but if not, each bleeding point should be carefully tied with small silk or catgut. Any frayed or ragged bits of tissue should be trimmed off. Care should be taken not to detach the parietal peritoneum. Some operators obviate this by sewing the peritoneum to the skin on either side by a provisional stitch before the intraabdominal exploration is begun. Bruising by instruments and manipulation should be avoided. Turk ingeniously overcomes this by putting a layer of sterile rubber dam over the abdomen, cutting through it and after the incision proper is completed tucking it in the wound, and holding it by a wire clothes-pin arrangement. This is especially useful in suppurative cases, as it protects the wound perfectly.

In suturing, no dead space should be left. This is especially important in the method of closure by layers. Fluid accumulating makes an admirable culture medium, and if it does not become infected may cause a hematoma that will interfere with healing.

McBurney drains all incisions by a little wick of rubber tissue, one-half as large as a cigaret paper, folded upon itself and introduced at either angle and removed at the first dressing. It forms a little gutter and fluids find their exit over its smooth surface along the line of least resistance. It is well to roll a gauze pad along the incision and express any fluids before applying the dressing.

Lastly the employment of rubber gloves will aid materially in lessening the liability of infecting the wound.

The choice and sterility of suture materials is the most essential point. Unfortunately the sterility of absorbable sutures—catgut and kangaroo tendon—in all instances is not absolute; and nonabsorbable sutures—silver wire and wormgut, and silk—while they can be rendered absolutely sterile by boiling, if buried act as a foreign body and sometimes occasion trouble. If they perforate the skin they require removal. Moreover, stitchhole abscess not infrequently results from *Staphylococcus epidermidis albus*.

The oldest and simplest method of closure is the through-and-through, or mass suture. It takes in all structures, skin, fat, fascia, muscle and peritoneum, and is tied over the line of incision. Silkwormgut, since its introduction into surgery and endorsement by Bantock and others, has been most employed. Silver wire and silk are rarely used.

Instead of tying the ends the Germans shotted them over a lead plate or button. Gerster and his confreres in this country occasionally use them, but mostly as so-called tension sutures. Statistics show that this method gives more hernias than any other (29% to 68%).

The homologous approximation of the several planes of the parietes by continuous suture of layers has largely supplanted this method in the hands of abdominal surgeons; but the mass suture remains the quickest method and must sometimes be used for that virtue. When glass or gauze drainage is used through the incision, interrupted sutures are the best. In thin subjects with short incisions, and when carefully applied, the results are very satisfactory.

A cutting or trocar-pointed, straight or half curved needle should be threaded on both ends of a faultless strand and introduced from within out. It is supposed that this is better than piercing the skin from without in, as this carries the skin coccus in and invites stitch abscess. The peritoneum and fascia are caught with forceps and drawn out to insure the latter against retraction. The fascia is the bulwark against hernia. The circle of the suture should include a little of the peritoneal margin, a deep sweep in the fascia and only about $\frac{1}{8}$ inch of the skin. The sutures should be about $\frac{3}{8}$ inch apart. They should not be drawn tightly enough to blanch the skin, but only tight enough to hold all the structures in accurate juxtaposition. Instead of the second tie over the surgeon's knot, if a third whirl be given to the surgeon's knot the suture will not slip. This will allow any suture which may be too tight to be subsequently loosened. Intermediate approximation sutures may be inserted if there is any gaping.

Should peritoneal drainage be necessary it should be at the lower angle and the provisional sutures at that portion of the wound tied when tube or gauze is removed. The sutures should remain ten days or two weeks. There is no objection to leaving an aseptic suture longer, say three weeks, as an additional safeguard.

There have been a number of modifications of this classic manner of closure:

1. Separate union of the peritoneum by continuous

¹ Progressive Medicine, June, 1899.

suture of catgut or silk with the other structures included in interrupted wormgut sutures. This avoids possible contamination extending along the suture-tract into the peritoneum. I have seen a patient of a colleague die from peritonitis from a stitch infection extending in this manner.

2. Separate closure of fascia by a running suture of catgut combined with the through-and-through suture of wormgut. This gives greater certainty of uniting this important structure.

The late, distinguished Dr. Horace Tracy Hanks, of New York, introduced a continuous suture of wormgut after the through-and-through or mass sutures were in place, simply to hold the fascia in apposition while tying the external sutures. He would withdraw the one in the fascia after tying. I suggested that he leave it. It was about the time Kelly introduced the buried mattress suture of silver wire. In two incisions which I closed for Dr. Hanks at the Woman's Hospital in 1896, I employed a continuous silver stitch in the fascia and allowed it to remain, the ends protruding at the angles. Through-and-through sutures of wormgut were used also. In attempting to pull the wire out in the first case two weeks after, it broke just where it entered the skin and retracted; the other end had been put upon tension and cut short flush with the skin. There was nothing to do but allow it to remain buried in the fascia. It gave no trouble. I have kept up with the patient and the wire has remained quiescent these six years. It is needless to say that she has a very firm scar and a most excellent guarantee against hernia. The suture in the second case was withdrawn at the end of two weeks. So far as I know, that was the first case in which a longitudinal nonabsorbable suture was introduced into the fascia, allowed to remain until union was complete and then withdrawn. I have used this method in a number of instances since, withdrawing the suture. I have also allowed it to remain if the patient was very fleshy.

The frequency of hernia is undoubtedly increased with the thickness of the abdominal wall. In another of Abel's tables he found among primary-healed wounds:

1.5%	"	"	"	"	"	little	deposition	of	fat.		
3.7%	"	"	"	"	"	"	moderate	"	"		
4.3%	"	"	"	"	"	"	marked	"	"		
6.9%	"	"	"	"	"	"	very	marked	deposition	of	fat.

The through-and-through suture is contraindicated in very fat abdominal walls. If tied tightly enough to bring the other structures together, the suture is too tight for the fat. Its nutrition is constricted. It finally yields and then liquefies, and the wound is likely to suppurate. Krug and others deliberately leave the fat and skin open after entering the peritoneum and fascia in preference to suturing it. If, however, the skin only is brought together the fat falls together by atmospheric pressure, or a loose catgut suture can bring the walls into apposition.

W. E. B. Davis, of Birmingham, has ingeniously solved the problem of holding the deeper structures together by through-and-through sutures in obese subjects by a little silver tube through which the free ends of the wormgut suture, as they emerge from the fascia, are thrust. The requisite amount of traction to bring the structures snugly together is made by pulling the free ends of the suture through the tube and pushing it down. Perforated shot are then crushed on the ends of the suture above the tube, which protrudes above the skin. The fat can then be left open to granulate, or it can be held by adhesive straps, or the skin can be sewn together. I was not aware of this device until it was brought out in the discussion at the Southern Surgical and Gynecological Association in November, 1901, although it had been published previously.

In May, 1901, I operated on a boy of 12, about five hours after the beginning of a recurrent attack of appendicitis. I presumed the infection was confined to the appendix thus early and made the short McBurney criss-cross incision, cutting

through skin and fascia of external oblique, but separating the fibers of the internal oblique at right angles to the incision instead of cutting across its fibers. The appendix was, to my surprise, perforated, and I felt it necessary to drain. I could not, of course, close the internal oblique on account of the drainage. I put two sutures of wormgut in the internal oblique and peritoneum, but did not tie them, as the gauze drainage came up between them. I left them long and protruding through the incision in the fascia and skin which was closed by interrupted wormgut at all points, save the drainage opening, where a provisional suture was left untied.

When the gauze was removed on the second day, I slipped little silver tubes, which had been made for me meantime, over the two sutures in the peritoneum and internal oblique, pulled them taut and shot them; then tied the skin suture at the drainage point. The wound healed and all the sutures were removed on the eighth day. The patient remains free of hernia after a year. Had I anticipated drainage, I would have made the usual oblique incision.

3. Another modification of the through-and-through suture is that of Montgomery, who in addition to sewing the peritoneum with continuous catgut, introduces the interrupted mass sutures through skin and fascia, and to make sure of the fascia, unites it separately with catgut.

4. Another disposition of the mass suture is in the form of the figure 8. The suture is inserted through skin, fat, and fascia of one side (right), crosses over and goes through fascia, muscle, and peritoneum of the opposite side (left), is brought back through the same structures of the other side (right), again crosses and goes through fascia, fat, and skin of the opposite, or left, side. The free ends are then tied over the line of incision.

In 1896 Edebohls described the method of closing the peritoneum, fascia and skin separately by continuous catgut suture. That was the beginning of the popularization of the laminated or layer method of closure, which has steadily gained in favor and is the method of choice. Kelly says: "The best method of closure is that which brings the tissues into exact approximation, layer by layer, in the order they occupied before division, and holds them there until firmly united, with the least risk of infection."

Different operators have employed varying methods to obtain this object. The trouble has been to decide definitely which is better—the absorbable (animal) suture or the nonabsorbable (buried) suture. The difficulty is that the absorbable sutures cannot be rendered universally sterile and the sterile sutures are not absorbable.

Edebohls was disappointed with buried wormgut, and was led to employ chromicized catgut that remained 30 days. On the other hand, Kelly introduced the buried mattress suture of silver wire, and Clark claimed for it that the healing of the wound is almost invariably quite ideal. The wires sometimes work out, or have to be removed, but only in the rarest instances has ventral hernia occurred as a postoperative sequel.

In some quarters there is a prejudice against catgut, but when it is boiled in alcohol in a hermetically sealed tube, or sterilized by boiling cumol, it has been free from criticism in my hands.

It was my practice until recently in closing the abdominal incision, when I was not obliged to close in a hurry on account of the condition of the patient, to unite the peritoneum with a continuous whipstitch of fine silk. Before tying, pressure was made upon the parietes to expel the air. The fascia was pulled out by small vulsella, or mosquito forceps, and sewn with a Hagedorn needle. For the skin the Halstead subcuticular suture of silver wire was used. The results from this method were very pleasing. I have employed catgut in the skin, which has the advantage of not requiring removal. Wormgut is very good, but the silver wire has many advocates, especially at Johns Hopkins, on account of its so-called antiseptic effect in the tissues, its rigidity, and the beautiful line of closure it gives. The ends are simply tied loosely together over a small pad of gauze and it can be removed by a smart pull at the end of a week. It is done so quickly that the patient is hardly aware of it.

The scar is evanescent and sometimes only visible as a hair line. In the negro I have had to look carefully to detect it after a few months.

The ideal method is one that accurately closes each layer separately by a reliably aseptic suture that can easily be drawn when it has accomplished its purpose. These requirements are met by the use of silkwormgut in that manner. Montgomery ascribes the suggestion of that method to Haughey, of Battle Creek. The longitudinal suture, however, has perhaps been used by many surgeons. In 1896 I first employed a continuous removable suture of wire in the fascia. Halstead has for several years closed the skin of all wounds by a longitudinal subcuticular suture that was withdrawn.

It remained for Davison¹ to perfect the method of Haughey by the simple, original modification of putting a small reverse bowknot at the ends of the sutures, which acts like a shot on either end and is easily untied when the suture is to be removed by simultaneous traction on both ends. His description of the method of the introduction and removal in the fascial layer will illustrate:

A small reverse bowknot is tied four or five inches from the end of the strand. The edges of the fascia are caught by forceps and held by an assistant. The suture is introduced into a firm place in the fascia back from the end of the wound and drawn tightly up to the knot, and the wound is closed by the continuous herring-bone suture. At the last stitch the suture is shirred up tightly, grasped by a smooth-pointed dissecting forceps at its exit from the fascia, and another reverse bowknot tied below the point of the forceps. . . . The ends are allowed to hang out at the angles of the wounds. This suture is removed in two or more weeks. Simultaneous traction on the two ends unties the knots, then the suture is clipped close to the skin at one end and withdrawn by an artery forceps.

The skin is closed by the Halstead subcuticular stitch of silkwormgut. The ends of the peritoneal and skin suture are not knotted, but simply protrude at either angle. They may be stained different colors, or otherwise marked for identification. In general the advantages of this method are:

1. Certainty that all suture or ligature material placed in the wound has been made sterile by boiling in water.
2. Accurate layer approximation of tissue.
3. Removal of the buried sutures when healing is complete.
4. Capillary drainage for each layer.
5. Safety of intestines from injury during application of the sutures.
6. Rigidity of application.
7. Minimum line of irritation on the peritoneal surface and consequent adhesions to the viscera.
8. Slight scar in the skin, there being no perforation of the skin by sutures.
9. All of the advantages of a permanent buried suture without the danger of future irritation and extrusion of the knot.
10. The advantages of an absorbable suture without the danger of loss from the suture, and without producing a nidus for septic germs from the blood current during absorption.

NOTE.—I have used this method of closure in 11 cases in the last two months with perfect results as to clean wound healing and minimum scar.

CONCLUSIONS.

1. The most reliable statistics prior to 1894 show that hernia occurs in from 6% to 29% of abdominal sections.
2. Suppurating abdominal wounds result in from 31% to 68% of hernia (according to the method of suturing).
3. The frequency of hernia is increased with the thickness of the parietal wall.
4. The longer the incision, the greater is the likelihood of hernia.
5. Drainage openings predispose to its production.
6. The site of the incision does not materially add to the occurrence, if suturing is uniform.
7. Abdominal supporters have absolutely nothing to do with the prophylaxis of this condition.

¹ Annals of Surgery, March, 1892.

8. Subsequent pregnancy does not influence its occurrence.

9. The best preventive of postoperative hernia is the aseptic healing of the wound.

10. Through-and-through suture is satisfactory in thin subjects with short incisions, and is recommended when rapid closure is imperative.

11. The best method of suture is one which insures accurate coaptation of the fascia.

12. The method of closure in three layers by continuous silkwormgut in peritoneum fascia and subcutaneously seems to be freer from objections than any other. Its extended trial is desirable.

13. The patient should be confined to bed from 2½ to 3 weeks to insure thorough organization and consolidation.

14. After a wound is completely healed no other influence acts deleteriously upon the permanence and resistance of the cicatrix.

15. It is believed that less than 2% of abdominal incisions should become infected, and not over 3% of hernias should result.

FEEDING OF INFANTS AND CHILDREN.¹

BY

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The mortality among children under five years of age in large cities is about 40% of all deaths. Dr. Shakespeare figures from the mortality tables of Philadelphia for a period of years that between one-fourth and one-fifth of all children die before ending the first year of life, from diseases of the digestive system. One-tenth of all children do not live a month and one-third die before the age of three months. These facts I bring forward to show the importance of my subject. We all know that infantile diseases are more serious as well as more fatal in those fed by the bottle.

In the summer of 1894 I had charge of the Infants' Summer Hospital at Charlotte, a Rochester, N. Y., charity, and I here observed the good effects of breast feeding. This was shown by the fact that only 13% of the babies treated that year were wholly or in part breast fed, and that none of these cases was fatal, showing a less severe sickness, a constitution more able to resist disease, or both. A fact accepted largely by the laity, and also, I am sorry to say, by some members of the medical profession, that an increasing number of women cannot nurse their infants has been too prevalent. The result is that artificial substitutes are advised and used when frequently efforts made by the mother under medical advice would result in a supply of breast milk proper in both quality and quantity. If each mother could be made to believe that her infant would die if not breast fed, there would be a large increase in the number of successful lactations. The proper time to begin to consider the feeding of an infant is ten months or more before its birth. The mother must be taught how much healthier breast babies are, and her health should be built up so that it will be possible for her to nurse her baby. A rational life, proper clothing, substantial, nourishing diet; the bowels, kidneys and skin kept active, and what medication may be indicated, may be mentioned as a means to attain this end.

When breast milk disagrees or is insufficient in quantity, it will generally be found that the mother is anemic, constipated, or otherwise in poor health; that she is not receiving a plentiful, plain diet with abundance of fluids, or that she is not getting enough fresh air and exercise. The drugs usually indicated are iron and laxatives; of these Bland's pills and ca-cara may be mentioned. Beer once daily will often correct the tendency

¹Read before the Dutchess County (N. Y.) Medical Society, July 9, 1902.

to constipation due to the extra amount of milk which is taken. Vomiting and disturbed stools in the infant are often caused by a too high percentage of proteids in the mother's milk and this is best overcome by exercise, always short of fatigue. Smallness in quantity of breast milk by no means shows poor quality. Weight first and then the age and general development and condition of the child are the best guides; if needed, breast feeding can be eked out by an addition of modified cow's milk. If three or more bottles a day are needed, it is best to give both breasts at each nursing, to prevent the supply of breast milk rapidly diminishing.

We are living in an age of infant foods and of milk modifications, but it is only right to protest against their use when not necessary and against the prevalent idea that they are as safe as mother's milk. The wretched pseudo scientific statements issued with the proprietary baby foods try to show that bottle feeding is better than breast feeding and I am sorry to say people do not realize that the deathrate among such artificially fed infants is considerably greater than among those who are fed at the breast.

Cautley, of London, in his new work on the "Feeding of Infants," states that more harm than good has been done by the various substitutes for mother's milk, not but what they do good in properly selected cases but because they are often used when not needed and the infant is thus deprived of breast milk, which is far more beneficial. Too many babies are put on bottles for lack of rational treatment of the mother. Some children thrive on almost anything, others require more careful care and many, many others, if they do not succumb to intercurrent diseases, often suffer from various acute and chronic digestive troubles—marasmus, rachitic, scorbutic, etc. The pudgy fat bottle baby of the patent food type is in no way on a par with the firm vigorous breast infant, and as the bottle baby grows older it is more liable to disease. Many children who break down in school life or who later suffer from chronic digestive, nervous and other complaints, can attribute a large part of their troubles to the fact that they were deprived of human milk and so did not secure the right foundation. Most bottle-fed babies are rachitic although often so mildly as not to be noticeable.

When we cannot secure breast milk for an infant it is easy to order some prepared commercial food with printed directions how to use it and which is claimed to be the one baby food sure to agree in all cases, food and directions being made by some one who has never seen or heard of the infant in question. This is not right, even if it does save the doctor some trouble. Each case should be studied by itself and the right and best food for that child be advised.

The modification of milk by the percentage method is considered today by practically all of the best known authorities in pediatrics of the country to be without doubt the best method of artificial feeding.

Percentage feeding is not the easiest method for the doctor, as it requires each case to be studied by itself; but the gain is that each child receives food so prepared as to suit its wants, and not something prepared by wholesale in a factory. I was told recently, by a gentleman well qualified to speak, that a certain food, which he mentioned by name, was prepared from skimmed and practically dirty refuse milk. What surety have we that commercial foods are pure and clean. Of course some infants will grow fat on almost anything, but the best teaching is against the use of such foods, for they often do harm and are rarely needed. They are not founded on correct ideas. They often contain considerable starch, which is foreign to milk, or said starch has been converted into sugar, which is not the natural milk sugar. When prepared as directed they frequently do not contain sufficient proteids or fats. When not prepared with fresh milk they do not have the proper composition, and if fresh milk is to be used, why not use the

percentage method? When the doctor has figured it out, it is very easy for the mother to follow it. This method uses such proportions of cream, milk, sugar, and water as will make the percentage of fats 3 to 4, sugar 6 to 7, and proteids from 1.5 to 1, or to so modify the proportion of 4.7.1 (or 3.6.1) as is indicated by the condition of the child. When first changing from the breast, as with a very young infant, it is desirable to use a weak mixture, and then to increase it by steps. Curdy stools indicate too much proteids. Rancid, sour vomit, as a rule, points to an excess of fat. Watery diarrhea often means too much sugar. A child growing well, but suffering from diarrhea, indicates too much or too strong food, and vomiting may mean the same, or that the child eats too quickly. It is needless to state that the number of feedings and the intervals between must be properly regulated. Dr. Freedman, of New York, read an interesting paper at the last New York State Society meeting on a "Simple Method of Milk Modification." This was published in *American Medicine*, May 3, 1902.

A child at birth has considerable iron stored up in its system, especially in the liver, which it draws upon, as milk contains comparatively little iron. A child is apt to become anemic if weaning is too long delayed or if it is kept exclusively on milk for too long a time. From the seventh to the tenth month the ferments which digest farinaceous foods are present in sufficient quantities to call for that class of foods. The glands which secrete the diastatic ferments have developed so far by this time as to indicate that the first natural supplement to make is farinaceous food. As soon as the teeth are well enough developed to chew it, a dry crust of stale bread, at first once and later twice a day is advised. This exercise develops the jaws and helps to prevent crowding of the teeth, which leads to dental caries and digestive disturbances. The custom of the present day to direct all food to be either chopped or in some way made fine seems a mistake. Meat juice is injurious owing to the large amount of extractive substances it contains, which do little except excite the nervous system and tax the excretory organs. They render the urine hyperacid, and the child suffers from those diseases which are known as the uric acid group. Among these are urinary incontinence, rheumatism, chorea, nervousness, anemia, etc. Hence it follows that meat and its preparations should be allowed but little in infancy and early childhood. They also create a dislike for the farinaceous foods, fats and fresh vegetables, which are the best foods. Sufficient fats and carbohydrates are needed by the child to supply the demand for heat, energy, nervous and muscular work. Fats and carbohydrates decrease proteid metabolism and allow a normal growth and development of the child.

SUBSEQUENT REPORT OF A CASE OF EXCISION OF THE SYMPATHETIC FOR CHRONIC GLAUCOMA.¹

BY

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of Philadelphia.

The history of the patient that makes the text for this short communication has been given in detail before this Section by Dr. de Schweinitz at one of the meetings earlier in the year. It is, in brief, as follows:

A poorly-nourished man of 23 had noticed failing vision in June, 1901, and by September of the same year his sight had become so bad that he had been obliged to give up his occupation. His condition, as recorded by Dr. William Zentmayer, who examined him in November at Wills Hospital, was horizontal nystagmus, V, counting fingers at one foot, pupils dilated, T +2; field, as measured by candles, contracted to 10° around the fixation point. In December he came under the care of Dr. de Schweinitz, at the Philadelphia Hospital. His

¹ Read before the Section on Ophthalmology, College of Physicians, Philadelphia, December, 1902.

examination, the notes of which he has kindly furnished me, shows V, shadows in the temporal field, pupils dilated, deep cupping of the optic nerve heads, T +2; under eserin the pupils contracted, tension was lowered and vision was slightly improved. On December 18 the right superior cervical ganglion of the sympathetic was excised by Drs. Hearn and DaCosta. Result, myosis and slightly lowered tension, continuing three days. Patient had dysphagia lasting 24 hours, and moderate ptosis, but no enophthalmos. No permanent change for the better or worse. January 31, 1902, the same surgeons removed the left superior cervical sympathetic. This operation had no effect upon the condition of the left eye. The pupil was not contracted and tension was not lowered. Recovery from both operations was prompt and without complication.

During the past eight months the man has had at least two attacks of acute glaucoma, during one of which he was under my care at the Jefferson Hospital. Blindness in the left, the acutely inflamed eye, was complete, pupils widely dilated, T +3. The ciliary and ocular pain on the left side was intense. A few hours after admission I performed paracentesis of the cornea, draining the anterior chamber of the greater part of the aqueous humor, and during the remainder of his stay instilled eserin. Tension was reduced, pain relieved, and in two days vision was restored to that obtaining before the attack. De Schweinitz has stated to me verbally that he had treated the patient in a similar attack and with equally good result.

In this case of chronic glaucoma, therefore, the value of double excision of the sympathetic, skilfully done, was negative. The operations had no permanent effect, favorable or unfavorable, upon vision, and moreover they were unavailing in preventing at least two onsets of acute glaucoma.

In order to form a correct estimate of the value of any procedure in therapeutics, operative or medicinal, the subsequent history of the patient and the final results are essential. This truth is trite and so universal in its application that illustrations are not needful. Excision of the sympathetic has been practised for the cure of the chronic forms of glaucoma with uncertain results. In some cases the tension has been lowered and the pain relieved, and even vision improved for some days or weeks after operation, but in most or all the cases the final outcome has not been published. After Jonnesco's report of immediate cessation of pain, fall of tension, reduction in the size of the pupil, and improvement in sight when the optic nerve has not been totally destroyed; Abadie's account of a man whose one eye had been enucleated for glaucoma and who suffered so intensely in the other from glaucoma that he begged for enucleation, but in whom excision of the superior cervical sympathetic ganglion was followed by cessation of all symptoms, even to clearing up of the media; Bull's successful case of typical unilateral glaucoma, T +3, V = light perception, and severe pain; we, who have had no experience, are led to believe that an effective remedy has been found. That this expectation has not been realized is apparent from the conclusions of more conservative surgeons who have carefully weighed the evidence for and against, and who believe that the operation is justifiable after other means have been tried without result. Others again, Panas, for example, are opposed to it. Coover¹ says the only deleterious effects upon the patient are numbness of the ear and of the inferior maxillary, and Mullen² that ptosis and enophthalmos may occur as remote effects.

The indications for the operation, as expressed by H. J. Williams,³ and concurred in by most writers on the subject, are glaucoma simplex, inflammatory glaucoma when iridectomy has failed, hemorrhagic glaucoma early in the disease and absolute glaucoma with pain.

Marple's⁴ conclusions, after analysis of the results of 86 excisions, are fair and unprejudiced, and give evidence of good judgment: 1. The operation is a safe one in the hands of a skilful surgeon. 2. While positive conclusions may not yet be reached, some of the glaucomatous eyes have been improved for some months. 3. The results are so various that we cannot say just to

what class of cases it is most applicable. 4. It does not replace iridectomy but may possibly supplement it in case the former operation is declined or has resulted disastrously to the other eye.

In considering the advisability of adopting this operation it is well to study results obtained from procedures that have stood the trial of time. One of the most recent publications is that of F. Meddel,¹ who gives the results of the treatment of 258 glaucomatous eyes in Hirschberg's clinic. Iridectomy furnished the best results, improvement in 77% of chronic and 82% of acute glaucoma. In the majority of cases of simple glaucoma it preserves vision and in some improves it. Iridectomy is the chief but not the exclusive treatment. Nine of the patients were successfully treated by eserin only.

Microscopic examination of the excised ganglion has shown in some cases that it is sclerosed, but no one has explained the connection between the sclerosis of the ganglion and the development of glaucoma. Rohmer² believes that the superior cervical ganglion controls the vascularization of the posterior segment of the globe and that the ciliary ganglion controls that of the anterior segment. He removed the ciliary ganglion in six glaucomatous sightless eyes that on account of pain would otherwise have gone on to enucleation, and has been highly gratified by the results.

The same writer gives a remarkable history of the results of 17 cases of excision of the sympathetic. In chronic simple glaucoma five-sixths of the cases were improved, in chronic inflammatory two-thirds. Five hemorrhagic cases were improved, while the acute and subacute were least responsive. With such brilliant results as these by the simpler operation, there seems to be no need to resort to the more complicated and severe operation of removal of the ciliary ganglion.

It is the fashion for all the writers on this subject to draw conclusions. I have but one to offer, deducted from a study of the papers here alluded to, some other articles not mentioned, and from the final result of the case recorded, and my conclusion is that the operation is justifiable in an exceedingly small number of cases, and those selected, of simple, noninflammatory and of hemorrhagic glaucoma, only after every other available remedy has been ineffectual and the patient, having been informed of the probable outcome, requests its performance. And one more thought. I believe that sympathectomy is inferior to enucleation in sightless, painful, glaucomatous eyes, for the danger in the former is greater and the result less sure.

NOTE.—Since reading this paper the patient has had a third attack of acute glaucoma relieved by paracentesis of the cornea, eserin and pilocarpin sweats.

HYPODERMOCCLYSIS IN PNEUMONIA, WITH REPORT OF A CASE.*

BY

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I feel that no apology is necessary for inviting your attention to a comparatively new treatment of pneumonia. The succeeding tables show conclusively that we have by no means approached even satisfaction, to say nothing of having realized the ideal in the treatment of this disease. Therefore any measure that may reduce the present appalling fatality is worthy of our profound consideration.

The following table is taken from Dr. Joseph Eich-

¹ Philadelphia Medical Journal, March 16, 1901.

² American Medicine, June, 1901.

³ Medical News, April 9, 1901.

⁴ Medical Record, May 10, 1902.

¹ Berliner klinische Wochenschrift, p. 71, 1902.

² Ann. d'Oculist., July, 1902.

* Read before the Lake County (Colo.) Medical Association.

berg's able article on "The Serum Treatment of Pneumonia."¹

	Mortality.
In New York Hospital for 6 years, 536 cases treated.....	32.16%
In Johns Hopkins Hospital for 7 years, 155 cases treated.....	28.4%
In Roosevelt Hospital for 6 years.....	35.6%
In Pennsylvania Hospital for 3 years, 216 cases treated.....	16.1%
In Boston City Hospital for 8 years, 3,088 cases treated.....	34.6%
In St. Bartholomew Hospital for 5 years, 691 cases treated.....	10.7%
In Cincinnati Hospital for 6 years, 337 cases treated.....	34.5%

Furthermore, the following table evidences that in New York and Chicago at least pneumonia has been more fatal than tuberculosis:

In New York, from 1840 to 1900, deaths from pneumonia, 56,092.	
In New York, from 1890 to 1900, deaths from pulmonary tuberculosis, 50,440.	
In Chicago, from 1890 to 1900, deaths from pneumonia, 25,228.	
In Chicago, from 1890 to 1900, deaths from pulmonary tuberculosis, 22,957.	

The foregoing is sufficiently eloquent without further comment.

The antitoxin treatment of pneumonia I believe is destined eventually to supplant all other forms of treatment of this disease, but so long as it remains in the experimental stage, and until it shall have been proved safe and trustworthy, we must support our reliance with other methods.

The credit for the first use of salt solution hypodermically for the cure of pneumonia doubtless belongs to Dr. F. P. Henry, of Philadelphia, who is said to have used it as early as 1890.² W. C. Johnson³ gives the credit to C. A. Penrose, of Baltimore, who reported his case in July, 1899, but unquestionably Dr. Johnson was not familiar with Dr. Henry's earlier work.

With the modern theory concerning the pathology of pneumonia, viz., that it is a general toxemia with local manifestations, our one endeavor must be to occasion so far as possible a diminution in the amount of toxin already in the system and to inhibit to the greatest extent its reformation. At present I think this is best accomplished by hypodermoclysis. Penrose⁴ found that the infusion of salt solution in several cases of pneumonia promoted the activity of the kidneys and sweat glands, relieved delirium, reduced temperature, and increased the force of the heart. Lenhartz records that the results of intravenous saline injections in acute diseases in children, were increased heart force and lowered blood-pressure. The consequent lavage of the entire system aided diuresis and diminished the toxins, caused rapid excretion of chlorids, and the high specific gravity of the urine showed that much waste was being eliminated.

It is no longer a theory but an established fact that subcutaneous infusion of salt solution is invaluable for renal elimination of poisonous accumulations. Moreover, I believe the best safeguard against heart failure in pneumonia is secured by diminishing the toxins, which, in the light of our present knowledge, is best effected by the exhibition of subcutaneous salt injections.

In one complication, says Broadbent, venesection may be of great service. This is early in the attack when the invasion of the lung is so rapid that the right ventricle is unable to cope with the sudden resistance in the pulmonary circulation. This condition is evidenced by marked cyanosis, orthopnea, a small, short pulse with a violently beating heart, staring eyes, and an agonized expression. Under such circumstances the relief by bleeding is striking, and when 16 oz. to 20 oz. has been withdrawn all the distressing symptoms will have disappeared. Like results are not to be expected later when asthenia has become a prominent feature.

This is seemingly logical and apparently harmonizes with modern pathology, but would it not be eminently more conservative and more beneficial to bleed one into his own bloodvessels? Say by administering full doses of "veratrum viride, which reduces the force of the heart, thus diminishing the *vis a tergo* which drives the blood to the lungs and at the same time dilates the abdominal bloodvessels and so invites the blood into

them."⁶ This seems to me preferable to venesection, as it is not followed by the exhaustion which succeeds blood-letting, so that later with the advent of the second stage, after the effect of the veratrum viride has worn off, the blood, by this time diluted with salt solution, is permitted to return to the circulation. Thus the persistent depression of phlebotomy is avoided. In this connection it may not be amiss to mention that it is the theory of the conservation and the increase of the phagocytic power that has stimulated experimentation with antidiphtheric serum in pneumonia, aside from its specific antitoxic property.

It appears to me unreasonable to suppose that a weak solution of blood which must exist after venesection followed by salt infusion, as advised by Porter,⁷ should be more efficacious in withstanding the onslaughts of disease than the stronger solution which obtains after the injection of salt solution without an antecedent phlebotomy. For will not the toxins continue to be manufactured? Will they not be thrown into the system more rapidly in the face of diminished resistance which must follow depletion? Will not depletion reduce in number the system's guards—the leukocytes—as well as toxins? Then why not leave our position as unassailable as may be, retain our army intact (by not practising phlebotomy) and endeavor to weaken the strength of the attacking forces (by diluting the toxins with injections of salt solution) and thus give the phagocytes a favorable opportunity to combat the enemy? Saline infusion weakens the invading army but not the defensive army, whereas bleeding weakens both. What we wish to accomplish is to bring the toxin-laden blood as near its norm as possible. And by gaining the norm (imagining this feasible) we eliminate the danger of this dreaded disease. Failing this, as of course we must, it follows that the nearer we approach the norm the further we recede from a perilous position.

CASE.—I was called to see the patient whose case has supplied the text for this paper the morning of December 25, 1899, and found a woman about 50, well developed and fairly well nourished. Previous history is negative. Present illness began December 24, with chilly sensations, hot flushes, a feeling of general discomfort and malaise. The morning of December 25 she had a chill. Temperature at the time of my visit was 102.5°, pulse 120 with the physical signs of a developing right basal pneumonia. On December 27 she was markedly worse. During the night the embarrassment of the heart and the respiration grew more and more serious, despite the hypodermic use of .01 gram ($\frac{1}{100}$ grain) of strychnin, 0.002 gram ($\frac{1}{50}$ grain) digitalin, 0.001 gram ($\frac{1}{100}$ grain) atropia and 2 cc. (30 minims) whisky within two hours. By this time the patient had a pulse of 160, temperature of 105.5°, Cheyne-Stokes respiration, pronounced cyanosis, cold arms, legs and forehead, and was apparently moribund. Further medication seemed useless. I then tried hypodermoclysis—giving her in all four injections within six hours, aggregating about three pints. The immediate effect was astonishing. The pulse became slower and of better quality, the temperature dropped, cyanosis disappeared, respiration became regular, consciousness returned, a general mild perspiration superseded the dry skin, and diuresis was marked. I regret now that an examination of the urine was not made. For two days following, rectal injections of salt solution were given at intervals. The subsequent history of the case is of no great interest. On the ninth day of the disease, as there had been no voice sounds nor rales for three days, with absolute dullness of the involved area, acupuncture was performed. Result—"dry tap." From this time on recovery was slow, but on the whole satisfactory. Treatment was symptomatic till February 16, the day of her discharge.

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Plan to Stop Grave Robbing.—A bill has been introduced into the Indiana Legislature creating a commission to distribute unclaimed bodies and bodies of paupers to the various medical colleges. The bill is the result of wholesale grave robberies in Indianapolis, for which more than 20 men are under indictment.

ELECTROLYSIS IN EUSTACHIAN SALPINGITIS WITH STRICTURE: REPORT OF 75 CASES.

BY

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The ability of the negative pole of a galvanic circuit to cause disintegration and absorption of certain forms of pathologic tissue has long been recognized. It has been proved in hundreds of applications in the cases forming the subject of this paper, and can readily be demonstrated by any one.

When an electrode is passed into the tube and meets with a mechanical obstruction so great that further advance is impossible, the passage of a current of a few milliamperes will, in a half minute or so, cause such a shrinkage of the tubal structures as will usually allow further progress with ease.

As a rule, a certain amount of inflammatory swelling occurs lasting several hours, after which more or less permanent absorption of the thickened tissues results. Repeated applications of the current cause a permanent enlargement of the caliber of the tube.

The procedure has been recommended as a remedial measure upon a number of occasions in the past, and is mentioned in several of the textbooks, while of recent years Dr. Duell and some other New York surgeons have reported an extensive series of cases.

I have very little to add to the conclusions already reached by Dr. Duell, but desire to present the following series of 75 cases treated during the past year, in the endeavor to find its proper place in the treatment of deafness.

These patients have not been selected. They include every deaf person applying for treatment and willing to submit to it. Some have been deaf for 20 or 25 years, others following various systemic diseases, and some presented cicatricial conditions following old otorrhea, which are included to show an apparent stimulation and increased functional activity of the auditory nerve. Finally, very few can be said to be typically favorable cases in which the pathologic changes were practically confined to the tube, not having yet involved the deeper structures nearer the stapes and labyrinth.

I have seen very few normally patulous eustachian tubes even in slight degree of deafness. On the other hand, many have been so tight as to require several applications of the current before the smallest electrode could be passed into the middle ear. In one instance I was unable to reach the tympanum, probably on account of a tight scar of syphilitic origin.

The symptoms usually associated with eustachian obstruction in addition to deafness include a sense of fullness in the head, sounds of the patient's voice returning with abnormal intensity, cracking sensations during swallowing, pain in the neck in the tubal region, and finally the vast array of subjective sounds varying in pitch and intensity known as tinnitus. The tests would be expected to show negative Rinné or diminished air conduction with relatively increased bone conduction, and diminished sound perception for the lower tones of the scale.

It has been my experience that all these symptoms are relieved or cured in all cases of more or less uncomplicated eustachian obstruction. I believe this cure will be permanent if the nasopharynx is kept in normal condition by appropriate treatment. The result is certainly much more lasting than that following the inflation with air or medicated vapors through the catheter.

There is a tendency at present to regard all cases of aural sclerosis with associated deafness as due, even in their incipiency, to fibrous thickenings and ankyloses in the region of the stapes and labyrinth. They tend to grow rapidly worse, and the patients often suffer con-

siderably from head-noises. I have been able in many such patients to restore the hearing to a greater extent by electrolysis than by any other method of treatment with which I am familiar. It is not possible to say just how permanent this result will be. They are almost without exception complicated with more or less stenosis of the tube.

I have relied for the most part upon the watch, the Rinné test, and the voice to determine the hearing power of these patients, and have not hesitated to accept the statements of the patients and their friends in reference to improvement or the reverse.

The current used varied in strength from one to five milliamperes, and was obtained from an ordinary galvanic battery, the positive (sponge) electrode being held in the hand of the patient and the negative (gold-tipped wire) passed through an insulated eustachian catheter for about 35 mm. into the middle-ear cavity. The duration of treatment was one minute or less as a rule. The bougie, after one or more applications, gradually overcomes the resistance of the stricture, and finally enters the tympanic cavity and there moves freely. Successive sizes are passed until the tube has resumed its normal caliber. This result can be secured in the vast majority of cases, but not in all.

Asepsis of all instruments and of the nasal cavity is essential to secure the best results and render the treatment harmless. With care, little inconvenience will be felt by the patient. After one application, a patient had a slight emphysema of the face lasting a few hours, apparently caused by displacement of the catheter by the pharyngeal muscles. I have also seen one case of acute otitis media develop during the course of the treatment, but this was probably due to another cause (influenza).

About the usual nasal conditions were present in this series. The septum rarely in the median line, most frequently to the left, hypertrophic rhinitis with tendency to dryness and crust formation in the region of the pharyngeal vault, and especially the later, sclerotic changes supervening after years of low inflammatory action. No case of atrophic catarrh is included here. A peculiar roughness of the tubal walls was observed in the more chronic sufferers, and notably in the syphilitic ones.

I have made an attempt at classification from the clinical features to throw more light upon the prognosis:

1. In three patients a syphilitic element was prominent. One showed cicatrices extending across the posterior pharyngeal wall from an old ulceration. I was never able to pass even the smallest electrode into the tube for a greater distance than a half inch. The deafness (unilateral) was not influenced by the treatment. In the second case, a colored man, with extreme deafness and diminished range of tone perception at both ends of the scale, and head-noises of peculiar intensity, great improvement followed the successful opening of the tube. This was accomplished with great difficulty and only after many unsuccessful efforts, inflammatory bands having apparently been thrown across the tube in various directions. After several months of treatment he was able to report a complete disappearance of the head-noises and very great improvement of hearing. At the last treatment a medium-sized electrode entered the middle ear without difficulty. In a third patient there was moderate narrowing of the tube, slight deafness, but very annoying tinnitus in both ears. These symptoms have at present all disappeared, but he reports every three or four weeks to see that there is no tendency to relapse.

2. I would like to include here three cases of the most promising type, which unfortunately are but rarely seen by the specialist. In 75 cases, only 3 of salpingitis in its incipient stage were encountered. Autophony, slight tinnitus, and impaired hearing at times were the only symptoms, and they were noted early by these patients

probably on account of their occupations, musicians (two cornetists, one violinist). The tubal swelling disappeared completely and the functions of the parts were restored after a few applications of the current, combined with treatment addressed to the nasal membrane. There is reason to believe that deafness in the vast majority of instances originates in this way and could be held in check indefinitely. Politzer inflation combined with the most skilful local treatment can show results comparatively transient without the aid of electrolysis.

3. Two cases of great deafness occurring in boiler-makers are recorded. One had lasted for over 15 years. In both very great stenosis of both tubes was noted, while a fair amount of functional activity of the auditory nerve remained as shown by cranial bone-conduction. Both passed from observation too soon for positive results to be obtained further than relief of the tinnitus.

4. Here are grouped together 21 cases on account of their chronicity. The patients have suffered from deafness for 15 or more years and marked improvement would hardly be expected from any form of treatment. The list, however, offers some notable exceptions. In one of these the nasal cavities were blocked by irregular projections from an old fracture of the septum. These were removed by electric trephine to allow passage of catheter. Nearly two months elapsed before the smallest electrode could be passed into the tympanic cavity, but from that time on his improvement has been rapid, so that while still under treatment, he attends without difficulty to an occupation requiring good hearing. The tinnitus has disappeared and conversation of ordinary loudness is heard with ease. I have no doubt that in time a limit will be reached beyond which improvement will not continue, and after which it may be necessary to repeat the treatment perhaps once a month to retain what has been gained, but this applies more or less to all other measures of relief.

Another exceptional patient of this class had been growing deaf since childhood. Several members of his family are afflicted in the same way, one brother at present using electrolysis. A watch could not be heard at the beginning of treatment and the voice only when much intensified. Negative Rinné test and diminished perception of low tones were elicited. He is 34 years of age, and at various times during his life has undergone approved treatment by specialists without marked improvement. I found the usual cicatrices in both tubes, but succeeded without great difficulty in restoring the normal caliber. He represents one of the most successful cases of the series; his hearing, while not normal, is sufficient for all ordinary occasions.

A third patient has discarded the use of a hearing-trumpet, which before treatment was necessary. My notes further record three patients in this class in whom the hearing was greatly improved.

In the remaining ones, although the tube in almost every instance was rendered of practically normal size, the hearing improved slightly or not at all, which was, of course, to be expected, in view of the advanced sclerotic and degenerative changes affecting the more deeply-seated structures.

The tinnitus, however, was almost always lessened, and in a few instances disappeared.

5. Seven cases of aural sclerosis without marked tubal obstruction, but with secondary involvement of the auditory nerve. Electrolysis, used after other means had failed, was also unsuccessful.

6. Finally, I include here 29 cases of chronic tubal disease. They represent what might be regarded as average cases of catarrhal deafness, the watch being heard in all before contact with the side of the head. The deafness in almost all is bilateral, but greater on one side than the other. The Rinné test negative; Galton's whistle heard normally; diminished perception of lowest tones of scale and autophonia were the symptoms.

Intranasal abnormalities were universally present. The septum was in the median line in two cases, but in the others often so extremely distorted as to suggest its etiologic relation to the tubal condition. In four operative measures were necessary to allow access to the tube for the catheter. The left nostril was the one more commonly occluded; in the majority the deafness was by far the greatest in the left ear. Chronic inflammatory changes in the nasal mucous membrane, and especially in the nasopharynx and extending into the eustachian tube, were always present. These were hypertrophic in nature—no case of atrophic rhinitis being under treatment.

Catarrh of the tube with swelling caused various degrees of stenosis and obstruction, most marked, of course, at the isthmus—scarcely noted beyond that point, as any bougie met no further obstruction before entering the tympanum (one exceptional case noted). As a rule, there was progressive narrowing of the tube until the isthmus was reached, after which further progress was easy. A temporary swelling of the tissues often followed the withdrawal of the bougie, sometimes lasting several hours and accompanied by an increase of the deafness and other symptoms. In two or three instances this occurred during the application of the current and caused some difficulty in extracting the bougie. Increasing experience confirms the impression that the best results are obtained by the use of the current only once a week—thus allowing time for any inflammatory reaction to subside.

All these patients had been treated by others, with more or less skill, before electrolysis was tried, and were not improved. About one-third of the number passed from observation or did not persist in the treatment for three months, and while some were improved, I think that conclusions should not be drawn from them. Of the remainder, the patency of the tube was always restored, the nasopharynx rendered normal so far as possible, the tympanum inflated through the catheter, often with medicated vapors, massage of the drum practised in some, and every other means used that experience would suggest as likely to benefit the hearing.

I can report cure of the autophonia and tinnitus in all these cases, increased limit of tone perception, and great improvement of the hearing. All these results may, I think with justice, be attributed to the more thorough treatment rendered possible by the permanent opening of the eustachian tube.

General Conclusions.—These 75 cases represent applications of electrolysis extending into the thousands, which should be sufficient to allow a fairly accurate estimate of its value.

Excluding purely labyrinthine conditions, it has been of service in almost all other forms of deafness, and especially in cases of moderate degree, in which the most pronounced changes were in the tube.

The best results cannot be obtained from its unaided use, so this should be supplemented by any other measures that have formerly been found of service. It is especially important to have free access to the tube, and to this end septum irregularities should always be corrected and hypertrophies of the turbinals cauterized. I use a routine way in all cases—solutions of iodine, menthol and camphor, conveyed to the parts by nebulizers—to improve the circulation in the nasopharyngeal mucous membrane. After electrolysis has restored the normal caliber of the tube, a further use of vapors to the middle ear after the method of Dench will be found of great value.

Patients who have been persuaded to continue in this line of treatment for a sufficient length of time are unanimous in their approval, and I am convinced that it marks a distinct advance in aural therapy.

I am indebted to Drs. S. H. Brown and J. L. Galbraith for aid in the treatment of many of these cases and for tabulating the results.

SPECIAL ARTICLES

VITAL STATISTICS: A PLEA FOR ACTUARIAL ADMINISTRATION AND CONTROL OF THE GREAT RESOURCES OF PREVENTIVE MEDICINE.

BY

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In the arts and sciences it is commonly observed that men's failures are oftenest traceable, not to want of knowledge or experience, or of ingenuity or logic, but to imperfect mastery of five-finger exercises. A sort of drunkenness which we call "enthusiasm" inflates us with a scorn of 'prentice tasks and with the conceit that we may go ahead *per saltum*. Consumed with haste to be master workmen, we acquire a wealth of implements and abandon the education of our thumbs. When the too obedient tools bring us to derision, we are driven back to the finger drill that will make one a craftsman probably, and at length a master, perhaps. This propensity to neglect the mechanical adjustment of one's self to one's materials, and to be supplied with every sort of unthinking machinery, particularly afflicts the modern practice of preventive medicine.

Preventive medicine has, within a generation, acquired territory from every adjacent science. Craftsmen possessing special and peculiar training have entered the service of hygiene, bringing the queer tools and unfamiliar methods of small provinces in science, speaking the provincial dialects, not understanding each other, not well enough understood to be assigned definite metes and bounds within a new environment. The offerings are valuable, but their profusion is bewildering. Another generation may pass before the serviceable energies of the chemists, physiologists, bacteriologists, geologists, meteorologists, engineers, economists, architects, sociologists, entomologists, and actuaries are safely geared to the machinery of public hygiene. Among these new forces some are strong enough to run the whole machine, and that possibly not to smash. The commissioned officers of hygiene are so much impressed with the performances of some of these specialists as to have forgotten, apparently, that the theory and practice of hygiene rest upon an older science, which in some form or other is fundamental to every other science, and that the several underpinnings must be compacted into a solid foundation upon which the complex and ponderous machine can be made to run steadily.

Public hygiene is built upon, is controlled and directed by, and is everlastingly in debt to vital statistics. The might and the right to direct the future of preventive medicine, to make and to terminate contracts, to approve and reject risks, to test materials and methods, to invest means and to distribute profits, these things belong inalienably to vital statistics. Every wheel that turns in the service of public health must be belted to this shaft, otherwise preventive medicine must remain invertebrate and unable to realize the profits available from the magnificent offerings of collateral sciences. If the unborn historian of hygiene in the twentieth century shall find one anomaly more curious than any other, it will be that the twentieth century, opening with prodigious resources, immediately available, ran a third or half its course before these resources became so standardized that each unit of power might be accounted for in a definite scheme of vital statistics.

It is for the immediate articulation of the statistics of public hygiene that this paper pleads, and against the misuse of such statistics as we have that protest is made. The situation is not absolutely bad. Indeed, we might congratulate ourselves upon progress, if the statistic spine of preventive medicine were not so far outgrown by other parts of the organism.

THE FEDERAL CENSUS.

The foundation of vital statistics rests upon the federal census, which we seem to have agreed shall be taken once in 10 years. A decennial enumeration of the population, properly made, skilfully analyzed, and promptly published, will suffice for the primary needs of sanitarians. The establish-

ment of the United States Census Bureau on a permanent footing will enable the medical profession to impress with some effect the importance of certain reforms which have hitherto been asked in vain, and there is ground for hope that the particular information needed by hygienists will in future be better collected and better presented.

However satisfactory the census reports may have been to those who had most influence in formulating the details of the work, never a census has furnished the data most desired by sanitarians. Medical statistics were not attempted until 1850, and not once since that time has a crude deathrate for the country been determined. The Census Office determines the population of the country as nearly as possible on a given day, usually in June (*i. e.*, the number of the survivors of the census year); but does not determine the mean population for the year ending on the assumed date of the census, and this mean population is the true number of those who furnished the mortality up to the last day of June in that year. This gives too large a divisor. The dividend, on the other hand, has always been too small, representing in large part the results of the enumerators' efforts to collect the data concerning deaths for a year by inquiry among the living at the end of the year. We have, therefore, no statistics comparable with the statistics of other countries. But, what is worse, we are unable to make comparisons between separate areas in our own country at the same period, or even to compare the data of different periods for the same area.

The census officials have not been blind to the futility of the enumeration method of collecting death returns in non-registration areas. On the contrary, in the reports of the Tenth and Eleventh Census the results are repeatedly criticised by Dr. Billings, as indicating not the mortality rates, but the more or less defectiveness of enumerators' returns.

The blunder was nevertheless repeated in the Twelfth Census, and that against the protest of a great majority of the registration officers of the country. A committee of the American Public Health Association strongly urged upon Congress an amendment to the last Census bill, giving the Director of the Census discretionary power to make records of all deaths occurring within representative areas of nonregistration States for a period of one year, and to apply the derived ratios of these data to the entire population of the States so handled. In this way complete and satisfactory records of all deaths, within a measured period and in a space of representative constitution, might have been made by competent observers at the time and place of their occurrence. With fresh and exact data, all the rates computed for the registered portion of a State would have been trustworthy, and when applied to the whole State would have given approximately true figures. This amendment, if utilized as the language of the amendment permitted, merely in a tentative way, being operated in selected portions of but one or two nonregistration States, would have served as a check upon the work of the enumerators, and, coming into comparison with the older practice, would have allowed a reliable judgment of its own merits.

But when the amendment was under consideration no participant in the earlier errors was at hand to plead for better methods. The Census Office was for the twelfth time to be organized *de novo*, and although the humble confessions of previous failures were quoted in the memorial which accompanied the amendment, the National Legislature, taking no counsel of its own commercial wisdom, rejected the advice of the sanitary bookkeepers. The data of the Twelfth Census are therefore no more applicable to the work of public hygiene in the nonregistration States than those of the Eleventh Census.

For the "registration area" of the Twelfth Census the statistics may be accepted as fairly approximate, but the population is excessively urban, and includes so many new cities that the group as a whole cannot be taken as representative of the population of the country. The Census Office divides the registration States into two groups, those whose returns of deaths, being collected under stringent laws, may be accepted without further inquiry, and those whose returns, when compared with the enumerators' returns, show more or less incompleteness. Of this latter class those whose returns, when compared with the enumerators' returns, show a difference not exceeding 10%, are

taken into the statistic account, and with the first class constitute the "registration area," which the Census Office utilizes for the purposes of comparing the results of the Twelfth with those of the Eleventh Census.

The Eleventh Census determined its "registration area" upon a looser standard. Its list of States included Massachusetts, Connecticut, New Hampshire, Vermont, Rhode Island, New York, New Jersey, Delaware, and District of Columbia, and to these were added 83 cities outside those States, giving in all a registration population of 19,650,440. Delaware is very properly excluded from the "registration area" of the Twelfth Census, and Maine and Michigan are added to the list, together with 153 cities of 8,000 or more population in other States, giving in all a registered population of 28,807,269.

In but four of these States was registration found to be complete enough in 1900 to allow the enumerators' schedules to be withdrawn and local returns to be substituted therefor. These four States were Massachusetts, Connecticut, Rhode Island and New Hampshire.

In New York, New Jersey, Maine, Michigan and the District of Columbia it was found that 20% of the enumerators' returns were of deaths not registered in the locality. Admitting, for the moment only, that the local registration could be safely amplified by the enumerators' returns, it must be clear that the enumerators' returns are subject to two undetermined discounts, one for errors of total omission, and the other for errors as to the time of death. Enumeration experience in 1880 was carefully tested, and the deficiency on account of records wholly missed amounted to 30%. The Census Office in 1890 hinted at an even greater deficiency. Of the discount for error in time nothing is known except that it is greatest in the earlier months. The statements of those interrogated concerning the occurrences of exactly a year past are at best inaccurate, and when the inquiry extends from June to June, so including parts of two calendar years, considerable error must result. Perhaps the registration in these ten States was better than the Census Office was led to believe. Certainly the registration of the four New England States was reliable, and if these returns were applied to a correct population for the period of their occurrence the rates would be useful.

But in 1890 there were not four New England States whose returns were complete. Registration in Connecticut, New Hampshire and Rhode Island was in 1890 no better than in New York and New Jersey in 1900. The populations of these several States are, however, fairly homogeneous, do constitute the best registration area which the country affords, and deserve a separate statistic treatment which the federal census does not give.

By including in the registration population 183 "registration" cities in nonregistration States the statistic results are distinctly vitiated. Among these "registration" cities are many whose populations are of abnormal age, race, and sex constitutions, and some whose records are subject to a sort of vicious manipulation which will presently be considered.

The death returns made by the health departments of the cities in nonregistration States are said to be "corrected" by the enumerators' returns. This simply means that the local official returns are amplified by the number of those enumerators' records which are not found in the local official returns. Before the Twelfth Census no offer of copies of those excess returns was made to local officials, although such copies would have been of service to the local officers. If they were found correct, the sources of failure in the local registration might have been discovered, while, if found incorrect, the errors in enumerators' returns would have been exposed. The excess enumerators' records of the Twelfth Census were offered to the local registrars, but upon condition that no prosecutions at law should be based upon them, and that they should be paid for at the rate of two cents each. It would seem clear that a verification of these unregistered deaths was of no less interest to the Census Office than to the local registrars, and a free tender of the list would have been fairly compensated by a report upon the results of investigation by the local registrars. The local registrars to whom the census offered these bargain-counter remnants were of two classes: those who preferred that the matter should remain in doubt, and therefore did not want the

lists, and those who did not want the lists because they were quite sure that, except by the hazard of grave crime, no death within their districts could escape registration.

Eventually the Census Office concluded to offer the lists free of charge, and several hundred excess enumerators' returns were sent to my city in a nonregistration State. Their investigation is now in progress. Up to the present time it can only be said that the chief, if not exclusive, source of error is, as might have been expected, in the duplication of records. The enumerators' records have been easily identified as more or less erroneous returns of registered deaths, whose true data, copied from the official records made at the time and place of the events, had been sent to the Census Office. In this way one death entered twice into the census enumeration, figuring once perhaps in each of two disease columns, or of two age columns, or month columns, or once in a residence and once in a hospital.

There are "registration" cities where certain deaths are thrown out of the list because there are plausible reasons why they should not be counted (*e. g.*, deaths of nonresidents), and certain other deaths are excluded from the city registry for reasons just as plausible (*e. g.*, extrarban deaths of citizens); where the control of the deathrate lies partly in the count, but chiefly in the discount. The returns of these cities really needed the enumerators' correction.

In view of all the sources of error and of the nonrepresentative character of the several areas whose statistics are combined and compared, it savors somewhat of hardihood to offer the derived ratios as indices of profit in public health. We are told that in 1900, 341 "registration" cities of 8,000 and over gave a combined deathrate of 18.6 per 1,000, while in 1890, 271 "registration" cities gave a combined deathrate of 20 per 1,000, showing a gain of 2.4 per 1,000, or 11% in 10 years. The average age at death in 1890, we are informed, was 31.1 years, while in 1900 the deaths in the total population of 28,807,269 included in the 10 "registration" States and 153 "registration" cities in nonregistration States, occurred at the average age of 35.2 years. The alleged 12% increase in the duration of human life is offered for our admiration. To mistake the average age at death as indicating the mean duration of life is a common error of the uninitiated, but no self-respecting expert can afford to wink at such a blunder, for it rests upon the assumption that populations are, in a qualitative sense, fixed or stable, while it is an elementary principle of vital statistics that populations are unstable, and that all determinable variations must be taken into account. The qualitative variations of population, even in a country as old as Great Britain, are so wide that Chadwick was able to make the generalization that in healthy districts the mean age of the living is, as a rule, less than the average age at death, while in unhealthy districts the reverse is the case. As an extreme instance of the variations found in practical experience, one may cite the observation of Rumsey, who found in London in the fifties a deathrate of 24 per 1,000, an average age at death of 29 years, an average age of the living 26 years, and an average expectation of life reaching to 37 years, all in the same population at the same time. What, then, shall be said of the ratios derived from the incoherent heterogeneous data of the Twelfth Census? The crudest two-factor rates of an unschooled registrar are not so crude.

All this is not, however, to be imputed to the Census Office for sin. The failures were for the most part inevitable in the nature of the case, and they are exhibited here not so much for reproof as for exhortation. The difficulties of enumeration by the federal Census Office of deaths in nonregistration areas were and ever will be insuperable. Enumerators' data should be tabulated and displayed without any correction by local returns, and so brought into amazing contrast with that one nineteenth part of the Union whose death records are collected by local officials day by day, year in, year out.

The Census Office now maintains a continuous organization for purposes more numerous and complex than were formerly contemplated. The first census was a political necessity in order to apportion the congressional representation of the several States, and while the value of vital statistics has been somewhat neglected in the development of the incidental advantages of a federal census, there is now good reason to

believe that this subject will receive adequate treatment. The vital conditions of large areas will perhaps for some decades have to be investigated by the Census Office through its own agents and without the aid of local official registration. The discredited enumeration method was confessedly as disappointing to the statisticians of the Twelfth Census as it was to those of the Tenth and Eleventh, so that we may expect some plan to be devised, and perhaps perfected in the intercensal period, whereby the vital conditions of nonregistration areas may be approximately determined. It would seem that the registration data of some part or the whole of the District of Columbia could be utilized for comparison with the data obtained by census officers in some comparable area in one of the contiguous nonregistration States.

For quite reliable results we must wait upon the will of the people to record for themselves the vital statistics of their several sovereign States, and the Census Office has, as we shall see presently, joined heartily in a movement to extend the practice of local registration.

STATE REGISTRATION OF DEATHS.

To one who realizes how great a structure of practical hygiene is delayed for want of a suitable foundation in vital statistics, the growth of the practice of registration seems dismal. But the registration idea has in fact spread rather rapidly. In 1880 real registration under operative laws was practised in Massachusetts, New Jersey, the District of Columbia, and in 19 cities in nonregistration States. In 1890 the practice of registration had extended to five more States, and the number of registration cities in nonregistration States had risen to 83. In 1900 there was some sort of registration of deaths in 37 States, and in 16 of them the registration was as good as it was in the nine States accredited by the Eleventh Census as registration States.

But the registration idea has not produced similar or comparable results in all of the States where it has taken root. Indeed the spread of registration has brought into painful prominence the greatest diversity both of methods and results. The hopeless process of an annual census of deaths is yet in use in five States, and the results range from tolerably poor in Vermont to wholly worthless in Kansas. The great States of Pennsylvania and Ohio are in this class. In 28 States physicians, or other persons acquainted with the facts, are "required" to make returns of all deaths within periods of from 24 hours to a year after their occurrence, but these "requirements" are practically inoperative in about 20 of these States. Fifteen States have discovered that the burial permit will insure registration at the time and place of death, but of these 15 we must count off eight as having failed to insure the burial permit. Of the remaining seven, Indiana insures the application for a permit to bury by authorizing the State Board of Health to disinter and interrogate the corpse. This resurrection feature is entirely novel in the practice of registration, but it is said to have made Indiana a registration State, without having caused an uprising of the silent majority. The States whose burial permit laws are effective are no more than seven.

Diversity of practice appears also in placing the official responsibilities. Local (county or township) registration officers may be county clerks, health officers, auditors, assessors, recorders of deeds, or Orphans' Court officials. State registration is centralized sometimes in the State Board of Health, again in the Department of State. No sort of uniformity appears in the publication or tabulation of vital statistics, and the blanks and other printed forms employed are of almost infinite variety as to size, arrangement and contents.

The idea of permanent preservation of the records has not been strongly impressed upon the official mind except in one or two States where ancient records are now either wholly lost or under process of restoration at great expense.

A strong movement has been made against all this neglect and incongruity, and in respect at least of a definite scheme of classification of causes of death, notable advance has been made. A number of experienced registration officials with the aid of expert statisticians and hygienists undertook in 1897 to bring about a general agreement among American registration offices to employ the Bertillon classification of diseases and causes of

death for statistical purposes. The claim was never made that this classification meets exactly the requirements of modern pathology or that its intrinsic merits for any other than statistical uses are surpassing. The Bertillon scheme had, however, at the time a good prospect of receiving international recognition, having been planned with this in view, and its general adoption in this country offered the best prospect of securing a practical basis of comparable statistics. The subject was effectively presented at successive meetings of the Conference of State and Provincial Boards of Health, the American Public Health Association, and the American Medical Association, and its adoption by registration areas, new and old, followed. This movement received a further impetus at the International Medical Congress at Paris in 1900, when the Bertillon classification was revised by a committee including members from all parts of the world, and was approved by the congress as a practical international classification for statistical purposes. The United States Marine-Hospital Service published and distributed a good translation of the scheme. The Director of the Twelfth Census adopted the scheme, and with the establishment of a permanent Census Office the Bertillon classification became the authorized plan of accounting in American vital statistics.

As contributing toward the extension of the practice of registration to new areas, and toward needed reform in States where registration is more or less defective, the Census Office has printed and distributed a circular on the subject ("Vital Statistics, No. 71"). The opening words of this circular are significant: "The Census Office is primarily interested in the registration of deaths because the data required for the mortality statistics can only be obtained in complete and reliable shape where deaths are recorded *immediately after their occurrence*, under compulsory registration laws. It is impossible to secure a complete record of deaths *in any other manner*."

The important part of the circular is a paper prepared by the Committee on Demography and Statistics of the American Public Health Association, and the title of this paper is "The Essential Requirements of a Law for the Registration of Deaths and the Collection of Mortality Statistics." This brief and well considered document states in logical order the several features which are absolutely essential to a working law, eight in number, as follows:

1. Deaths must be registered immediately after their occurrence.
2. Certificates of death should be required.
3. Burial or removal permits are essential to the enforcement of the law.
4. Efficient local registrars are necessary.
5. The responsibility for reporting deaths to the local registrar must be fixed.
6. The central registration office should have full control of the local machinery, and its rules should have the effect of law.
7. The transmission and preservation of the records should be provided for.
8. Penalties should be provided.

Barely two pages are devoted to the statement and explanation of these eight points. Where experience has approved more than one method of accomplishing an essential result the alternative procedures are clearly described. This brief document is, as it professes to be, an authoritative guide, and any competent attorney should be able with its aid to formulate an effective law for the registration of deaths in a State where the subject is wholly new. The appendix to this interesting circular shows again good results of consultation and cooperation between federal and local statisticians. It describes a standard certificate of death, which provides for all the data essential to the work of the Census Office and to the private and local uses of such records.

Among the other evidences that the Census Office has now a definite grasp of this important subject, one should mention the "Manual of International Classification of Causes of Death," published in November, 1902. No such handbook has heretofore been available to American registrars, and it will at once take rank as indispensable. Its contents deserve extended notice, but we can only allude here to its double index to the classification of causes of death as returned in the census of 1900. Very many of the perplexities encountered by registrars in the assignment of a statistical value to medical certificates can be solved by refer-

ence to this book. To the perfection of this manual every registrar should contribute, for it is beyond the power of one man to make a complete concordance of the medical terms used in death certificates.

The question of State registration was brought up in the House of Representatives on April 23, 1902, by Mr. Russell, who introduced a joint resolution calling upon State authorities to cooperate with the Census Office in securing a uniform system of death registration. On the principle of one thing at a time and that done well, this resolution spoke of the registration of deaths only. The resolution was referred to the Select Committee on the Census, and was returned with a favorable report, but amended so as to include the registration of births. It therefore appears that the statistics of life and death have at last reached equal rank with the statistics of coal and cotton in the esteem of the National Legislature.

We have said so much about State registration because the subject is most inadequately treated in State laws, and because it is useless to hope that the practice of registration of deaths can be brought to anything like uniformity, or can fully serve the uses of preventive medicine, until all the people are brought within its scope. Some of our best registration States leave sparsely settled areas out of the account.

Naturally the value of registration is most appreciated in dense communities, and it is quite possible that the general practice of registration in cities has delayed the adoption of effective State laws applicable to rural populations. In such States as New York and Pennsylvania, where the great majority of the people live under local registration laws, the need of registration in rural and suburban districts seems perhaps not imperative, and besides there are practical difficulties in organizing a central registration office safely adjusted to a multitude of independent local offices. With the rapid growth of cities the relations of municipal sanitation to the hygiene of suburban and rural districts is coming more and more into view, and chiefly in respect to food and drink these relations are vital. Municipalities are everywhere clamoring against the villagers and rustics who abuse the watersheds, flavor the cabbage, lettuce, and celery with night-soil, ship infected milk to town, and sell the wornout cow to the city butcher. It is time that urban influences should combine to compel a strict and systematic accounting of deaths and the causes of death in the rural districts.

[To be continued.]

Hospitals for Insane.—The State Charities Aid Association, which is required by law in the State of New York to make an annual report to the State Commission in Lunacy relative to the condition of the State hospitals for the insane, have made their report, and advise that the present State Commission, which with the Governor has charge of the insane institutions of the State, be set aside, and that local boards be substituted, as was the condition formerly. They take up carefully the reasons given by the Governor for signing the bill which is now in legal operation. Most of them were for fraud, extravagance, etc., on the part of the old local boards. They charge as follows: Upon a careful study of these instances it was found that 18 of the 23 were based on a misunderstanding of the facts, such as attributing to boards of managers expenditures for which the Commission in Lunacy was responsible, and alleging extravagance in the case of expenditures which had been made in the interest of economy, and had resulted in a financial saving; and that 4 out of the 5 cases that could be substantiated had occurred previous to the establishment of the system which it was proposed to overthrow, and would have been impossible under that system. The only case which could be substantiated, occurring under the system which was to be supplanted, was one of alleged bribery, in which a manager and a treasurer of one of the State hospitals were implicated. Even in this instance, however, it would seem as if there must have been some error, for the Governor has since appointed one of the accused persons as a member of the new Board of Visitation for the hospital in question. Serious fault is found with the present condition, which permits the Commission of Lunacy to name the stewards for each of the State hospitals. The steward is a subordinate officer, and according to law performs his duties under the direction of the superintendent, by whom he was formerly appointed. The fact that he is now appointed by the Commission causes friction between him and his superintendent, to whom he feels no especial responsibility. A change to the former method of appointment is urgently recommended.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

January 24, 1903. [Vol. XL, No. 4.]

1. Surgery of the Stomach. ARTHUR DEAN BEVAN.
2. Acute Articular Rheumatism: The Statistics of a Series of 270 Cases from the Service of Dr. Osier in the Johns Hopkins Hospital. THOMAS MCCRAE.
3. The Salicylates in Acute Rheumatism. JAMES J. WALSH.
4. Typhoid Fever in an Infant Under One Year of Age. E. F. BRUSH.
5. The Clinical Results of Serum Therapy. EDWIN ROSENTHAL.
6. The Use of Gelato-glycerin Bougies in the Treatment of Acute Earache in Young Children. GEO. L. RICHARDS.
7. A Contribution to the Surgery of the Gallbladder and Ducts. ALEX. ANDER HUGH FERGUSON.
8. Venereal Prophylaxis That is Feasible. LUDWIG WEISS.
9. Determinate Factors in the Cause of Insanity. EUGENE C. CARPENTER.
10. Preliminary Note on an Experimental Research into the Means of Controlling the Blood-pressure. GEORGE W. CRILE.

1.—Surgery of the Stomach.—Bevan holds that operations for carcinoma should be limited to such cases as permit of apparent entire removal of the disease, and also to a few well-selected cases in which gastroenterostomy promises relief. Radical removal produces in a small percent of cases entire cure. Complete gastrectomy is still in the experimental stage. Cases in which jejunostomy is preferable to morphin and rectal feeding are extremely rare. Gastrostomy is seldom worth while. For ulcer gastroenterostomy gives a small mortality and usually a permanent cure. Experience proves it superior to excision. It is the operation of choice in pyloric obstruction, hemorrhage and perforation. In hour-glass contraction, gastro-anastomosis is indicated. He describes the technic of operative procedure and after-treatment, and pleads for wider application of surgery in gastric lesions. In benign disease, results have been brilliant.

2, 3.—See *American Medicine*, Vol. III, No. 25, p. 1037.

4, 5.—See *American Medicine*, Vol. III, No. 24, p. 990.

6.—See *American Medicine*, Vol. III, No. 25, p. 1048.

7.—See *American Medicine*, Vol. III, No. 25, p. 1039.

8.—Venereal Prophylaxis.—Weiss believes that prostitution, the main source of venereal disease, cannot be suppressed during the present moral evolution of the race. Reglementation is impracticable here on constitutional grounds, and because of its limited hygienic value. Moral efforts and sanitary measures are promising of results. The latter can step in only after infection has occurred, and require a liberal supply of hospitals and dispensaries for free treatment and sterilizing of sources of contagion. Individual prophylaxis by means of applications of silver and mercury is at present the only feasible means of preventing in part the spread of venereal disease. We should have a national meeting similar to the International Conference for the Prophylaxis of Venereal Disease. [H.M.]

9.—See *American Medicine*, Vol. III, No. 25, p. 1057.

10.—Means of Controlling Blood-pressure.—Crile points out the defects and limitations of strychnin, alcohol, nitro-glycerin, digitalis, and saline solution. Uniform pressure on limbs and trunk by means of a pneumatic rubber suit gives a definite control of blood-pressure of from 25 to 40 mm. Patients may be placed in any position during operations because the blood flows back to the heart regardless of posture. Adrenalin chlorid acts on heart and vessels but not on the vasomotor center. It must be used carefully in great dilution with saline solution, usually 1 to 50,000. In large doses it may overstimulate the inhibitory mechanism of the heart. This may be prevented by atropin. Its effects may be obtained after death. [H.M.]

January 31, 1903. [Vol. XL, No. 5.]

1. Some Unappreciated Causes of Anemia in Childhood. W. C. HOLLOPETER.
2. Retropharyngeal Abscess in Infancy. JOHN LOVETT MORSE.
3. Spontaneous Hemorrhages in Newborn Children. ISAAC A. AET.
4. Conservatism in the Treatment of Acute Mastoiditis. SARGENT F. SNOW.
5. Treatment of Chronic Purulent Otitis Media. D. A. KUYK.
6. The Teeth as a Cause of Pathologic Conditions in the Throat, Nose, and Ear. KATE W. BALDWIN.
7. Notes on the Detection and Quantitative Determination of Sugar in Urine. A. B. LYONS.
8. The Present and Future Therapy of Orthopedic Surgery. NEWTON M. SHAFFER.
9. Primary Carcinoma of the Nasal Chambers. WM. EDGAR DARNALL.

1.—See *American Medicine*, Vol. III, No. 25, p. 1048.

2, 3.—See *American Medicine*, Vol. III, No. 25, p. 1049.

4.—**Conservatism in Acute Mastoiditis.**—Acute inflammation of the mastoid cells practically always comes from extension from the middle ear, and this extension does not follow if free drainage is obtained early, hence Snow believes the first indication is to incise the drum-head promptly and freely, and the second is to keep inflammatory action and pus development within bounds by cold or heat. The knife should enter near the lower margin in the posterior half, carrying it well through to the inner wall, up and out through the attic to bone tissue, cutting then deeply out along the posterior superior wall of the external canal. The latter portion of the incision not only drains the attic, but relieves the periosteal tension where most needed, the lower wall of the mastoid antrum. Unless unmistakable improvement is noted within 24 to 36 hours the securing of better drainage is imperative. Sufficient nurses, giving faithful care, are essential, as free drainage must be secured and the ice-bags changed in less than every five minutes. Intense heat may be as constantly applied, but Snow prefers cold. He believes that if the work and nursing are thoroughly carried out, over 50% of the external operations can be avoided, and there are too many cerebral complications following the latter to warrant taking unnecessary risks. In support of the conservative position he can report 45 cases so treated, each of which presented the indications usually laid down for external operation. [H.M.]

5.—See *American Medicine*, Vol. III, No. 24, p. 992.

6.—See *American Medicine*, Vol. III, No. 25, p. 1058.

7.—See *American Medicine*, Vol. III, No. 25, p. 1061.

8.—**Therapy of Orthopedic Surgery.**—Shaffer believes this branch of surgery will develop along conservative, not operative lines. In its present stage it represents, especially from a mechanical standpoint, inspiration rather than study and research. The scientific method, as it is used by ophthalmologists, for instance, must be adopted to describe certain deformities, not only for permanent record, but to meet the intelligent comprehension of the profession. There is a tendency to cultivate the surgical at the expense of the mechanical. Medical colleges should be equipped with a completely appointed mechanical laboratory. [H.M.]

9.—**Primary Carcinoma of the Nasal Chambers.**—Darnall reports a case, the seventy-ninth on record. The prognosis is decidedly unfavorable. The average duration is about a year and a half, his own case living only seven months. Unless reasonably sure of being able to remove all diseased tissue, it is better not to attempt operation, for interference only accelerates the disease. [H.M.]

Boston Medical and Surgical Journal.

January 29, 1903. [Vol. CXLVIII, No. 5.]

1. Chylous Ascites: Report of Case Due to Total Occlusion of the Thoracic Duct. PERLEY P. COMEY and WM. W. MCKIBBEN.
2. Lesions of Tibial Tubercle Occurring During Adolescence. ROBERT B. OSGOOD.
3. The Side-chain Theory. ADDISON S. THAYER.
4. The Open-air Treatment of Syphilis. E. H. DOUTY.

1.—**Chylous Ascites from Occlusion of the Thoracic Duct.**—Comey and McKibben report the case. A man of 61 who had been unusually healthy, was taken with a chill, severe pain in the right leg and groin, high fever, diffused pain and disturbed digestion. In a day or two the right leg began to swell, became reddened and edematous. The swelling ascended to the abdomen, chest and right arm. It resembled a general infection with cellulitis. The diagnosis was phlebitis. In a few days the constitutional symptoms disappeared and the patient was out of bed, the swelling persisting. On three occasions, some weeks apart, sudden symptoms of heart failure and collapse appeared. In each instance, save the last, the patient soon rallied and was up again. Four weeks before his death the patient was tapped for ascitic accumulation, about seven quarts of apparently pure chyle escaping. This continued to discharge to some extent until death. Necropsy showed the chylous fluid abundant in the abdomen and in the right pleural cavity, crowding the lung up into small space. The thoracic duct was

hard, thickened and indurated. Microscopic examinations at numerous levels showed the duct occluded by inflammatory exudate. This had caused the chylous ascites and death. The origin of the accumulation was apparently not suspected until chylous fluid was obtained by tapping. [A.B.C.]

2.—**Lesions of the Tibial Tubercle Occurring During Adolescence.**—Osgood gives a general discussion on these lesions, symptoms, prognosis, and treatment, and concludes as follows: The adolescent tibial tubercle, from its situation and mode of development, is susceptible to injuries, especially in athletic subjects. These lesions are usually caused by a violent contraction of the quadriceps extensor. Fracture and complete avulsions of the tubercle are rare, cause loss of function, and are easily diagnosed, usually clinically and always by means of the Röntgen ray. Avulsions of a small portion and partial separation of the tubercle are more common. They do not cause complete loss of function, but without treatment long continued serious annoyance. The diagnosis should be made by a combination of the clinical and Röntgen ray pictures, and before the latter are accepted as evidence both knees should be skiagraphed and accurate technic observed. [A.B.C.]

3.—**The Side-chain Theory.**—Thayer endeavors to present the theory of Ehrlich, explaining the technical terms employed for the benefit of the nonspecialist. He briefly discusses bacteriolysins, hemolysins, and agglutinins, and minimizing methods for the production of spermotoxins, neurotoxins, and nephrotoxins. [H.M.]

4.—**The Open-air Treatment of Syphilis.**—Douty, after five years' observation of patients in the high Alpine altitudes, concludes that 30% of the men patients there who have pulmonary tuberculosis are syphilitic. He says other observers place the estimate at 50%. His firm conviction is if these men had had a course of open-air treatment and thorough feeding directly the syphilitic infection was recognized they would never have contracted tuberculosis. He observed during many years' practice at Cambridge, England, that the athletic, well-fed student living much in the open air suffered far less during an attack of syphilis than did the bookworm who lived much indoors and, as a rule, was poorly fed. In view of these and other observations, the author believes open-air treatment, extending over a period of one or two years if possible, should be urgently insisted upon by those having to do with the early treatment of syphilis. It is just as applicable here as in the treatment of tuberculosis. In each it rehabilitates the blood and increases the resisting power of the individual, and thus enables him to combat the systemic poison. [A.B.C.]

Medical Record.

January 31, 1903. [Vol. 63, No. 5.]

1. The Open-air Treatment of Syphilis. EDWARD H. DOUTY.
2. A Case of Disease of the Acoustic Nerves, Causing Profound Deafness, Accompanied at a Later Stage by Pleuritic Effusion and Fibroid Tuberculosis: Recovery. D. B. ST. JOHN ROOSA.
3. The Principles of Protection Against Röntgen-Light Dermatitis. CARL BECK.
4. Maritime Quarantine Without Detention of Non-infected Vessels from Ports Quarantined Against Yellow Fever. EDMOND SOUCHON.
5. On the Solarization of the Nude Body by the Sun and Electric Arc Light Rays, and the Physiologic and Physical Influence of these Rays Upon Iron Preparations After their Internal Administration. J. MOUNT BLEYER.
6. A Treatment for Spina Bifida, with the History of a Case. FREDERIC GRIFFITH.

1.—See abstract No. 4 present issue under *Boston Medical and Surgical Journal*.

2.—**Profound Deafness; Recovery.**—Roosa reports a case following a large dose of quinin. The diagnosis at first was congestion of the acoustic nerve and the treatment calomel and blisters, followed by mercury, iodid of potassium, and pilocarpin. Since these failed to improve hearing the diagnosis was changed to anemia, and strychnin and alcohol administered with sufficient improvement in one ear to allow ordinary conversation to be heard. Ten years later after several recurrences of deafness in the better ear the patient was again placed on strychnin and Russell's emulsion with complete recovery of hearing in both ears, which has continued from 1898 until now. [H.M.]

3.—Dermatitis from Röntgen Light.—Beck is of opinion that Röntgen-light idiosyncrasy exists, analogous to iodoform idiosyncrasy. For diagnostic purposes the exposure should be as short as is consistent with securing a good skiagraph. Fortunately, the longest exposure for the pelvis does not now, with the aid of the Wehnelt interrupter, require more than 10 minutes' exposure, and this will be tolerated even by susceptible individuals. Protection for diagnostic purposes should not be resorted to since it defeats the purpose of the exposure. Only when the rays are used for therapeutic purposes does the possibility of susceptibility merit attention; and here the degree of penetration, the question of protection and the distance of the tube from the surface treated all demand careful consideration. For instance, in treating a hairy or other benign growth on the face very carefully regulated tentative exposures should be made before resort is had to longer exposures, and the unaffected surrounding surface should be protected by a shield. Since Volkmann and Heidenhain long ago demonstrated the presence of cancer cells in the fascia overlying the great pectoral muscle, even when only small movable nodules exist in the breast, it is evident that no shield is desired in exposures for mammary cancer, for the beneficial effect is desired over a large surface. And since the influence is usually desired immediately the tentative process to determine idiosyncrasy is disregarded and full and lengthy exposures are instituted from the first. The author has little faith in any permanent good resulting from the treatment of deep-seated growths by Röntgen light. [A.B.C.]

4.—Maritime Quarantine.—Souchon reviews the Louisiana regulations whereby vessels avoid detention by disinfection at the last port touched with five days interval between this and a second disinfection at the quarantine station, the latter being necessary to neutralize the effect of a possible case following the first disinfection so light as to be unrecognized. National floating disinfecting plants would make it possible for vessels on long trips to be disinfected five days before reaching port so as not to be detained after the second disinfection. He also gives the special regulations for fruit vessels. [H.M.]

5.—Solarization of the Nude Body After Administration of Iron.—Bleyer briefly discusses the effect of actinic rays on iron salts outside the body, the study of which led to experimentation on 100 tuberculous and anemic patients with various inorganic and organic preparations. These after the administration of the iron preparation were placed in the rays of the sun or electric light arc. After a week the blood count showed an enormous increase over older methods of administration. Very favorable results were obtained with tropon, which caused the least digestive disturbance. A simple way to give iron with rapid showings is by sprinkling the powder or Blaud's mass on hard-boiled egg. [H.M.]

6.—The Treatment of Spina Bifida.—Griffith reports the case. The child was a female, and with this exception was fairly strong, healthy and vigorous. Tumor formation appeared directly after birth, and was of rapid growth. Excoriation, ulceration, and threatened rupture yielded to boric-acid ointment and cotton dressing. At three months the tumor extended from the last lumbar to the tenth dorsal vertebra. Small drops of clear fluid appeared on the surface of the apparently unbroken sac and indicated the necessity for prompt interference. Operation was done with the child in the exaggerated Trendelenburg position, achieved by its being placed on the back of a chair placed with legs in the air upon a table. The child's legs were secured to the chair-legs. The tumor was first tapped with trocar and cannula, and some six ounces of clear fluid removed. The small opening in the membranes was found, likewise the bony aperture, but the child's condition precluded any attempt at osteoplastic work. The sac was trimmed away and its base closed by sutures. It was put to rest in the Trendelenburg position, and reacted promptly. Though weak, it apparently did well until the fifth day, when the mother accidentally let it fall to the floor. The shock was great, and it died a few hours later. The author is of opinion that the absorptive power of the gauze dressing was detrimental by removing large quantities of cerebrospinal fluid, which but for the inclined position had resulted fatally. In another case a different dressing would be used. [A.H.C.]

New York Medical Journal.

January 24, 1903. [VOL. LXXVII, No. 4.]

1. A Study of the Deaths Occurring in New York City on the Opposite Sides of Twenty Streets During the Year 1895. ALFRED E. THAYER.
2. Cases Illustrating Some of the Newer Points in the Surgery of the Day. ROBERT T. MORRIS.
3. Chronic Gastritis and Gastric Motor Insufficiency in Children. F. L. WACHENHEIM.
4. The Treatment of Nonparalytic Strabismus, Including a New Operative Procedure. J. H. WOODWARD.

1.—A study of the deaths occurring in New York City on the opposite sides of 20 streets during the year 1895 has been made by Thayer with a view to determine if there was a difference in mortality on the north side of the streets as compared with the south side. The results show the mortality greater on the north side of any street in the district studied. The higher north mortality is due chiefly to pneumonia, pulmonary tuberculosis, and nephritis. The first two are especially fatal during cold weather, when the proper ventilation of living and sleeping-rooms is most likely to be neglected. He believes that the greater freedom on the south side from these causes is due chiefly to the advantages of sunlight and ventilation. Zymotic diseases appear to be independent of these conditions. [C.A.O.]

2.—Cases illustrating some of the newer points in the surgery of the day are reported by Morris. The first case is that of chondroma occurring in a woman of 24. The mass was attached to the upper part of the left humerus, and was about the size of a hen's egg. In such cases when there is doubt as to whether the growth is benign or malignant, Morris advises the removal of a segment and its diagnosis by frozen section on the spot that we may proceed in accordance with our findings. After the removal of the growth he closes the wound with a subcuticular suture of very small catgut, which will be absorbed in two or three days. Over the suture line he places a collodion gauze dressing. Sometimes instead of this he places a strip of Cargile membrane next the suture line. The second case is that of a man of 20 who had a lacerated wound extending the entire length of the forehead and nose. The wound was cleansed from dirt and treated with balsam of Peru and gauze packing for four days, at the end of which time the local hyperleukocytosis being presumably adequate to protect against infection, he trimmed the margins of the wound and closed as before. The third case was one in which he removed a gangrenous perforated appendix through an incision 1½ inches long, making no effort at thorough cleansing of the peritoneum, and closed the wound without drainage. Septic peritonitis was well under way at the time of operation. Apparently there was primary union, but 10 days later there was rise of temperature and evacuation of a subcutaneous collection of pus, which did not involve deeper structures. In this case he depended upon the leukocytes and a proper management of the lymph channels of the peritoneum for the result. Another case was that of ununited fracture of the tibia and fibula. The field of operation was prepared with a sulfid depilatory, which removes the hair in about five minutes and leaves the skin thoroughly aseptic at the same time, thus avoiding the more elaborate preparation. Morris has experimented gradually with this method of preparation, and he believes it as thorough as if hours had been expended in the preliminary work. [C.A.O.]

3.—Chronic Gastritis and Gastric Motor Insufficiency.—The article is based on the observation of children between the ages of 2 and 12 years. Wachenheim states that chronic gastritis is one of the commonest affections of childhood, and that motor insufficiency of the stomach is quite often associated with it, concurrently or secondarily. Every thorough examination includes the use of the stomach tube, comparison of the removed stomach contents being made with the record of recent ingesta. The outlines of the stomach may be defined by percussion before and after inflation with Seidlitz powder. The value of succussion must not be ignored, and care should be taken to determine the upper border of the organ to guard against being deceived by any displacements. Motor activity is best determined by inspecting the stomach contents for food remnants from the previous day. Chemical tests of the stomach contents should be made regularly for general acidity, free

acid, and peptones; in special cases the fatty acids and ferments may be the subjects of investigation. The large quantities of mucus especially characteristic of chronic gastritis require for its thorough removal repeated washings with a weak alkaline solution. Diet and lavage are of special importance in the treatment. HCl and a bitter tonic are also useful. In motor insufficiency nux vomica takes the front rank, acting as a general stimulant to peristalsis; it is well combined with bismuth and sodium bicarbonate to check fermentation, and magnesia to counteract the constipating tendency of these two. Illustrative cases are reported. [C.A.O.]

4.—Nonparalytic Strabismus.—Woodward believes that the many failures in the operative treatment of strabismus are due especially to the free division of the overacting muscle so universally practised. He says that tenotomy of a muscle diminishes its functional power, and after it the eyeball is no longer sustained in its normal position in the orbit, but projects forward to a greater or lesser degree. He details his method of operating by advancement of the antagonist, but says that the pull of the overacting muscle upon the sutures was always too great for security against failure. Recently he has tried to obviate that difficulty by stretching the overacting muscle, hoping to paralyze or weaken it temporarily. He believes this will prove to be a useful preliminary to advancement of the antagonist. [C.A.O.]

Medical News.

January 31, 1903. [Vol. 82, No. 5.]

1. The Limitations of the X-ray in the Treatment of Malignant Tumors. WILLIAM B. COLEY.
2. A Plea for a Neurological Hospital in New York. L. PIERCE CLARK.
3. The Negro as a Criminal and His Influence on the White Race. LOUIS EDELMAN.
4. Affections of the Labyrinth Resulting From General and Organic Disease. THOMAS R. POOLEY.
5. Is Any Diseased Condition Necessarily Self-limited? EDWIN R. MAXSON.

1.—Limitations of the Röntgen Rays in the Treatment of Malignant Tumors.—Coley has treated 75 patients with malignant tumors by this method. All were inoperable, and many were recurrent after operation. Twenty-seven were sarcoma, and in five of these the tumor entirely disappeared after from 4 to 10 months' treatment, but in some metastatic recurrence took place; 9 cases showed great improvement, while the remaining 13 showed little or no improvement. Twenty-one cases were cancer of the breast; in 3 of these small recurrent nodules disappeared after a few weeks' treatment, but in each case they recurred; in no instance has he observed a large recurrent cancer of the breast disappear under Röntgen ray treatment, but in most cases there has been temporary improvement; in some instances the pain was increased, though generally it was lessened. Ten were cases of deep-seated intraabdominal tumors—2 of the rectum and sigmoid, 4 of the uterus, 1 of the bladder, 3 of intraabdominal sarcoma; 1 case of cancer of the cervix is apparently cured; 1 of the cases of sarcoma is apparently much improved, the other 2 are unimproved; 1 case of cancer of the sigmoid is apparently improved; the remaining cases of deep-seated growths are unimproved. Fifteen were carcinoma of the head, face and neck; the superficial epitheliomas showed the best result, but even here 7 to 10 months elapsed before the ulcers were healed; the 3 tongue cases showed no improvement. A case of advanced Hodgkin's disease has shown remarkable improvement—glands in the neck, axillas, and groin have nearly disappeared, and the splenic tumor has decreased in size two-thirds under four months' treatment. Coley says the field for the Röntgen rays is in cases of inoperable and recurrent growths, and even here further time and study are necessary to determine its true value. [A.B.C.]

3.—The Negro as a Criminal.—Edelman gives the statistics as to the comparative number of criminals in the white and negro race in various localities and attributes the greater percentage among the blacks to the effects of slavery, to ignorance and to environment. The best means of diminishing crime is a strong vagrancy law and a reformatory school for children. He suggests the purchase of a State farm so that whenever a man becomes idle and a figure in police circles he can be given an opportunity to go to work or leave the State. [H.M.]

4.—Affections of the Labyrinth from General and Organic Disease.—Pooley considers these principally from a clinical standpoint, with some reference to pathology. The auditory is oftener affected than any other sensory nerve. Cerebral hyperemia and anemia and ordinary meningitis seldom cause serious change. In hemorrhagic pachymeningitis with deafness, extravasations have been found between the fibers of the auditory nerve. Cerebrospinal meningitis is the most common cause of acquired deaf mutism. The postmortem appearances are swelling and hyperemia of the nerve trunk, with purulent matter around it and in the labyrinth, and in the latter extravasations of blood. Lesions of the cerebral vessels have caused degenerative changes in the labyrinth. In brain tumor complete deafness is rare. Atrophy of the nerve has occurred in several cases of ataxia. In grip disturbances of equilibrium occur rarely, sometimes followed by total deafness, due either to the specific organism reaching the labyrinth or to inflammation of the nerve. The latter is probably more often the case. In mumps the manner in which the ear is attacked still remains doubtful. When the labyrinth only is affected the disease may be on one or both sides, and is generally complete and incurable. It is likely the poison sets up plastic inflammation, followed by atrophy. In typhus, typhoid and variola cases of inner ear affection are recorded in the literature. Pooley believes the lesions which have been attributed to malaria are due to quinin. Syphilitic affections are due far oftener to the inherited than to acquired form, and in the latter they may be secondary or late tertiary manifestation. The prognosis is better in very recent acquired syphilis than in hereditary cases. In Bright's disease cases occur in which loss of hearing and albumin are the only symptoms present. [H.M.]

5.—Is Any Diseased Condition Necessarily Self-limited?—Maxson claims to have arrested typhoid fever by doses of sodium sulfocarbolate; 2 to 4 grains given every six hours with tincture of nux vomica, 2 or 3 minims, and cinchonidin in the interval. Patients seen early in the disease are allowed to stay out of bed during the day and to get about light business in a week. When not seen until intestinal ulceration threatens he applies wet cups to the back of the neck and sometimes a blister to the epigastrium. These patients are generally out in two weeks. He continues tonics and antiseptics for two weeks longer. In diphtheria, scarlatina, and rubeola antiseptic treatment has given as favorable results, the average duration of all contagious diseases being less than one-half that under other treatment. [H.M.]

Philadelphia Medical Journal.

January 31, 1903. [Vol. xi, No. 5.]

1. Tropical Diseases. CHARLES E. KIEFFER.
2. Insanity Among Soldiers of the American Army in the Philippine Service. A. B. RICHARDSON.
3. The Relation of the Prefrontal Lobes to Mental Function. CHARLES W. BURN.
4. Case-book Record of 183 Operations on the Mastoid Bone. LEVI JAY HAMMOND.

1.—Tropical Diseases.—Kieffer considers the subject of acute dysentery, which he divides etiologically into endemic (amebic) dysentery, epidemic (bacillary) dysentery, and sporadic dysentery, each of which is detailed. The amebic and bacillary dysentery include about 95% of all cases. He has found *Bacillus pyocyaneus* a very important etiologic factor, and when the disease is caused by this germ there is a tendency for the extension of the disease into the ischio-rectal fossa and perirectal tissues, with the formation of extensive abscesses in these locations. In the treatment of acute tropical dysentery, absolute rest in bed is of the utmost importance. Ipecacuanha is the drug par excellence. To be of value, the drug must be administered in one large decided dose, and if possible without producing nausea, which is accomplished in the following manner: Nourishment of every description is withheld for 3 to 4 hours, 15 to 25 drops of tincture of opium are given, and a small sinipism applied to the epigastrium. A half hour subsequently, when the effect of the opium begins, 30 to 60 grains of powdered ipecac, stirred up in 1 to 2 ounces of water are administered. If the ipecac is vomited within an hour, it must be repeated, preferably as soon as the nausea sub-

sides. The remedies next in order are the salines. Local treatment is of little value in acute dysentery, the best results being obtained in the chronic variety. A golden rule in tropical practice in any fever that is not profoundly modified by quinin, properly exhibited in a reliable preparation, is not malaria. [F.C.H.]

2.—Insanity Among Soldiers of the American Army in the Philippine Service.—Richardson believes that the popular impression of the prevalence and unfavorable character of insanity among the soldiers of the Philippine army has been greatly exaggerated. Considering the character of the service and the climatic conditions, the percentage is very low. He shows that the character of the disease in nearly all cases is quite favorable. A series of 319 mental cases are detailed, and only one was diagnosed as paresis. [F.C.H.]

3.—The Relation of the Prefrontal Lobes to Mental Function.—Burr reports a case which, when studied in association with the large number of similar cases in the literature, adds evidence in favor of the view that the prefrontal region is in closer relation with mental processes than some other parts of the brain. This is not the same thing as to say that the prefrontal region is the center of mind; whether the left or the right lobe is of predominant importance is not yet decided. Disease in either may cause mental symptoms. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

EDITORIAL COMMENT

Intravenous Injections of Formaldehyd in the Treatment of Puerperal Septicemia.—Through the newspapers the country was recently apprised of the successful treatment of a case of puerperal septicemia at the Bellevue Hospital, New York City, with intravenous injections of a formaldehyd solution. The announcement naturally aroused a decided interest, and has been widely discussed in professional and lay circles. A good deal might be said as to the propriety of allowing such matters to appear in the lay press previous to their publication in the professional journals, but Dr. Barrows, who has used the treatment with such apparent success, has, we are glad to say, not lost much time in publishing his report in the proper place.¹ The treatment is based upon theoretic considerations and upon experiments made by Dr. Maguire, of London, and Professor Ewing, of Cornell University. The latter injected into his own veins dilute solutions of formaldehyd and found that, unless too strong, they produced no deleterious effects. The patient treated by Dr. Barrows was a negress, aged 26, admitted to the Bellevue Hospital with a temperature of 104°, a pulse-rate of 124, and a respiration-rate of 30. She was in labor, and there was a fetid, bloody discharge from the vagina. On the following morning she was delivered of a macerated, decomposed fetus of about six months' growth. After delivery the patient had a severe chill. The temperature rose to 105°. Despite irrigation of the uterus and curetment, symptoms of general sepsis supervened. Blood cultures showed the presence of the streptococcus. When seen by Dr. Barrows, the woman had a temperature of 108°; the pulse was from 150 to 160, and the respirations were 38. She received an intravenous infusion of 500 cc. of 1:5,000 aqueous solution of formalin. Within three hours her temperature had fallen to 105°; within six, to 101°. It rose again to 103°, and then rapidly dropped to 95°, the pulse being 86 and the respirations 22. Rising again to 103°, a second infusion of the same formalin solution, this time of 750 cc., was then given. The patient had a slight chill, but without further rise of temperature, which in the course of 12 hours fell to normal. Several blood cultures were made, but none after the first showed any streptococci; nor did any changes take place in the red blood-corpuscles. The woman is

now to all intents entirely well. The albuminuria that was present has disappeared; at no time was there any blood in the urine. Dr. Barrows warns against the indiscriminate use of the method when blood cultures have not been made. The treatment also presupposes the adoption of proper surgical measures. It is likewise suggested that normal salt solution be used for making the formalin solution, instead of distilled water, as in the case reported. We are aware of one case in this vicinity in which intravenous infusion of formalin solution was employed. The case was that of a tuberculous patient, apparently in extremis. After the injection of 300 cc. of a 1:5,000 formalin solution, marked improvement occurred. It is entirely too soon, however, to draw conclusions from these meager data, and considerable work will be necessary before we can pass from *post hoc* to *propter hoc* explanations.

A Serum for Scarlet Fever.—The cable is being kept busy reporting discoveries of cures for infectious diseases. Since the beginning of the year the discovery of a cure for leprosy has been proclaimed; Tizzoni has found a serum for pneumonia, and now Baginsky announces that Aronson, of Berlin, has succeeded in producing an antiscarlet fever serum. How this is made is not stated. Quite recently, after very patient study, Baginsky succeeded in isolating from scarlet fever a streptococcus—an organism the etiologic relation of which to the disease is very doubtful. There would seem to be, *a priori*, but little prospect of finding a curative serum before the real cause of the disease has been discovered. However, a positive opinion must be suspended until detailed reports have been received.

REVIEW OF LITERATURE

Acute Inflammation of the Pharyngeal Tonsil.—Acute pharyngeal tonsillitis occurs as an accompaniment to catarrh of the neighboring mucous membrane. Beckmann¹ gives the symptoms of this condition and states that it occurs frequently both in adults and children. If the inflammation remains confined to the tonsil it may heal spontaneously and remain unnoticed, but on the other hand, it may pass on to a general infection. The inflammation often extends to the nearby sinuses and the deeper air passages. From experiments on the lower animals Beckmann concluded that this condition may be transmitted from person to person by means of the discharges. Fully 95% of the acute and chronic inflammations of the middle ear are due to pharyngeal tonsillitis. Swelling of this tonsil may close its lymph channels and thus cause the retention of detritus, which suppurates and develops into an abscess. Pharyngeal tonsillitis often accompanies rheumatism and the acute infectious diseases. The pharyngeal tonsil should always be removed when diseased, as it interferes with the treatment of all nasopharyngeal conditions. [W.E.R.]

Syphilis in Glassblowers.—Gailleton² considers this question from the viewpoints of prophylaxis and legal responsibility. Under the first are recommended covering of the instrument and sanitary visitation. The employer is responsible if a journeyman blower contracts syphilis from instruments with which he is obliged to work. The amount of damage depends not alone on the effects of the disease itself, but also on the duration of professional incapacity while the person is under treatment. Gailleton suggests that each owner of a factory keep a register of health to be signed by the employes, and that each one on leaving be given a certificate. [A.G.E.]

Inoculation Tuberculosis.—Lassar³ has made investigations regarding the frequency of cutaneous tuberculosis through accidental inoculation in men connected with slaughterhouses and its percentage frequency in the general run of a large skin service. Of 365 men connected with the Berlin abattoirs he found 7 afflicted with tuberculosis of the skin, while three others had

¹ Berliner klinische Wochenschrift, December 15, 1902.

² Lyon Medical, December 7, 1902.

³ Deutsche medicinische Wochenschrift, October 2, 1902.

¹ New York Medical Journal, January 31, 1908.

suspicious lesions. Of 108,000 patients afflicted with cutaneous diseases 34 presented tuberculous nodules; 4 of these were butchers. He believes danger of direct inoculation is very insignificant except in the case of individuals who work with tuberculous cattle. He does not excise these lesions, but after making the part bloodless burns them away with the thermo-cautery under local anesthesia. [E.L.]

Venesection in Acute Nephritis.—Marsden¹ briefly reviews the history of venesection. The two vital indications affecting all age periods are danger of asphyxia with overfilled right heart and overloading of the blood with chemic waste products of the body. These conditions are most typically met with in some cases of acute nephritis. If one remembers that bleeding is to be continued only so long as increased pressure in the venous system exists the risk of air entering can be avoided. The value of venesection is chiefly from the mechanical relief obtained, not from the withdrawal of the blood itself, since the alkaloidal poisons of uremia are in close combination with the tissues. If the balance of the circulation be restored after being disorganized for variable periods of time, it is readily conceivable that a return of suitable pressure in the renal vessels may initiate the recovery of the organ. Venesection, however, should not be adopted as routine treatment, but only when dilation of the right heart follows overstrain and failure of the left ventricle. [H.M.]

A case of fulminating purpura following scarlet fever (with necropsy) is reported by Biss.² [A.O.J.K.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

EDITORIAL COMMENT

Decortication of the Kidney.—The question of operative treatment of chronic nephritis continues to attract considerable attention. Since Edebohl's³ reported his series of eight cases of various forms of nephritis in which complete recovery followed decortication of the kidney, a number of other surgeons have undertaken the operation with more or less success, and clinical and experimental work has been done to determine the rationalé of the procedure. The results of operations thus far reported have been highly encouraging, but it seems unfortunate that so little care has been taken to study cases before operation. Experimental studies of decapsulated kidneys in animals have failed to show the reason why the operation does good. Albarran and Bernard⁴ report that after stripping the fibrous capsule of the kidney in rabbits a rapid regeneration occurs. The capsule is completely reformed within two weeks after the operation, and at the end of two months it is as dense as the normal capsule. The cortex of the kidney itself shows microscopically superficial lesions, which are of slight importance. It is difficult from these experimental studies to see what favorable influence stripping the capsule can have, for the newly formed fibrous capsule is as resistant as the original capsule and is not more vascular. So early as 1899 experiments similar to these were undertaken by Dudley Tait, of San Francisco, in a series of studies of eversion of various organs, including the testicle, bursae, etc., and it was noticed that in two months after eversion of the kidney capsule a dense, adherent, fibrous mass surrounded the organ. At the November meeting of the California Academy of Medicine, Johnson reported a series of experimental studies which confirm in every respect the results obtained by Albarran and Bernard. Rovsing⁵ reports a series of 17 operations with very careful examinations of the urine from separate kidneys chem-

ically, microscopically and bacteriologically, in every case. He believes that while there may be little difference in the chemical constituents of the urine or the appearance of the kidney in various forms of nephritis, those cases in which infections of the urine are found are likely to be benefited by operation, while such favorable results are not to be expected in the aseptic cases of nephritis. While up to this time we lack conclusive information, it seems likely that there is danger of surgical treatment of nephritis being carried to an extreme and that without some definite indications for operation can be discovered routine operation in these cases can hardly be considered justifiable. The present enthusiasm for operation in these cases is not unlike that which has been seen for other procedures, such as operations for tuberculous peritonitis, cirrhosis of the liver, etc., in which the rationalé could not be definitely determined.

REVIEW OF LITERATURE

Parenchymatous Gastric Hemorrhage.—Moser¹ reports the case of a man of 41, who complained of abdominal pain, localized to right side of umbilicus, nausea, with copious vomiting, and hyperacidity for some time. A previous similar attack yielded to lavage, alkalies, and careful dieting. Hemoptemesis and melena were prominent symptoms during the present attack; they recurred almost daily, and exploratory laparotomy became necessary. Nothing of importance was found, and the operator performed a gastroenterostomy. Death resulted a few days later, the result of progressive asthenia. Necropsy showed hypertrophied gastric walls, especially the muscular coat, pale, slightly swollen mucous membrane, with four bleeding points near the pylorus; only one of these showed deficiency of epithelium. He discusses the causes of parenchymatous gastric hemorrhage at some length, and concludes that they were due to spasmodic pyloric stenosis, existing during life, and to chronic gastritis. [E.L.]

A Double Gunshot Wound of the Left Ventricle; Suture and Recovery.—Peyrot² reports the case of a man of 26 who had shot himself in the left breast with a small revolver ball. When seen 3½ hours after the accident no pulse could be felt. Over the entire left side there was hyperresonance, the respiratory sounds could not be heard, the heart sounds were feeble, and occasionally a murmur was noted. The operation revealed a perforated pleura, a pneumothorax, a perforated left lung, a bleeding pericardial wound near the apex, and a hemopericardium. The left ventricle was perforated anteriorly near the left border; this wound was sutured with catgut. The wound of exit on the posterior surface of the left ventricle near the auriculoventricular groove was sutured with more difficulty, as the cardiac contractions were violent. The myocardium received a superficial tear during the operation. Both pericardial and pleural sacs were drained. The operation lasted 35 minutes. Both drains were removed after 48 hours. Recovery was uneventful. [E.L.]

Tincture of Green Soap for Disinfecting Instruments.—To render instruments aseptic, Gerson³ wraps them in cotton which has been soaked in tincture of green soap; thus clothed they are laid away until needed, when they are unwrapped and are ready for use without any further disinfecting. He has proved their asepsis by means of bacteriologic examinations. Asepsis is due to their being surrounded by a bacteria-proof coat. The advantages of this method are rapidity, simplicity, and ease with which sterility is effected; absolute and constant sterility; and instant availability. [E.L.]

Exstrophy of the Bladder Following an Operation.—Some weeks after the removal of an epithelioma of the urethra and neck of the bladder in a woman of 64, a small tumor appeared in the vestibule. It enlarged rapidly; at first reducible with the patient lying on her back, it later became irreducible. A tumor the size of a fist was found to consist of the entire inverted bladder protruding between the labia. The red

¹ Medical Chronicle, October, 1902.

² Lancet, ii, 286, 1902.

³ Medical Record, December 21, 1901.

⁴ La Semaine Médicale, 1902, Vol. xxii, p. 215.

⁵ Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie, 1902, Vol. x, p. 288.

¹ Münchener medicinische Wochenschrift, November 4, 1902.

² Bull. de l'Acad. de Med. de Paris, July 29, 1902.

³ Deutsche medicinische Wochenschrift, October 23, 1902.

and swollen mucous membrane, its transverse folds, and the ureteral openings were plainly visible; there was complete incontinence of urine. Pique¹ reduced the bladder through a median abdominal incision and attached it with six sutures to the anterior surface of the retroverted uterus. The uterus and bladder were then fastened to the abdominal wall. The condition was cured at once. [E.L.]

Gonorrheal Urethritis in Male Children.—Fischer² has been able to collect from the literature 69 cases of gonorrheal urethritis in male children and reports two occurring in his own practice. He gleanes the following facts from the study of these cases: Balanitis, balanoposthitis, and posterior urethritis is frequent and occurs very early in the disease; painful erections were never observed; strictures and rheumatic affections are rare, incontinence of urine is common. The symptoms at the onset are much more violent than in adults and its spread along the urethra is very rapid. The greater number of cases are due to accidental contact (not sexual) with individuals afflicted with the disease, though a large number, especially in big boys, is the result of attempted cohabitation. [E.L.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Mitral Stenosis Complicating Pregnancy.—Wilkes³ reports two cases of mitral stenosis ending fatally after the first parturition, illustrating the danger which attends this form of heart disease during gestation and labor. Patients who present symptoms of serious circulatory disturbance in the early months of pregnancy, or those who have with difficulty escaped a fatal issue from cardiac failure in a previous labor, should be given the benefit of induction rather than premature labor, as the latter, whether spontaneously or artificially induced, appears to be attended with as heavy a mortality as labor at term. Wilkes thinks women with serious mitral stenosis should, if they seek opinion on the subject, be advised not to marry. [w.k.]

Treatment of Enuresis.—Walko⁴ reports a number of cases of idiopathic and symptomatic enuresis which were cured by practising bimanual massage, one finger in the rectum, the other hand over the symphysis; from three to five treatments were necessary to achieve this result. He considers enuresis in cases where the bladder is normal to be due to central inhibition, produced by accidental causes, and not to developmental disturbance or muscular weakness, as proved by the fact that suggestive methods of treatment, such as massage, cure the disease. [E.L.]

Extirpation of the Septic Puerperal Uterus.—Gradenwitz⁵ quotes statistics from many surgeons, showing the extirpation of the septic puerperal uterus results in a mortality of about 50%. In 4 years (1898-1902), 113 cases of puerperal fever were treated in the Breslau hospital. In 26 of these the fever, caused by some affection of internal or external genitalia, decreased after brief symptomatic treatment with 3 deaths. In a second group of 23, in which the fever was evoked by a fresh perimetritic or parametritic postpartum abscess, the temperature sunk to normal with conservative operative treatment, involving no deaths. The third group of 26 suffered from putrid placental debris, the removal of which resulted in recovery with one exception. The remaining 38 cases were in an apparently hopeless condition when received, and of these 21 died. In only 7 of these was it deemed worth while to undertake the extirpation of the uterus, and of these 5 made complete recovery. In 4 of these there was a pronounced local infection, and in 1 the lymphatic form of pyemia. The 2 cases resulting in death were instances of pure septicemia without the presence of any local lesion or suppuration or swelling of lymphatics. [w.k.]

Volvulus of the Small Intestine.—In a patient of 25 Kirchmayr¹ observed two weeks after an abortion abdominal distention, nausea and vomiting, occasionally fecal, colicky attacks, and during these visible coils of small intestine, absence of flatus, but occasional passage of small masses of feces; a diagnosis of incomplete occlusion of the intestines was made, and this was confirmed by operation. The right tube had attached itself to the upper part of the free left border of the root of the mesentery; from this, corresponding to the two limbs of a Y, two cords had passed upward to be inserted into the omentum. As the uterus underwent involution the mesentery was pulled over to the right side of the pelvis, and the volvulus was begun. Some sudden traumatism made it complete, twisting it in such a way that the anterior surface of the mesentery looked backward, producing the obstruction. He discusses other cases with similar symptoms but less characteristic causal factors. [E.L.]

Abdominal Hysterectomy for Uterine Fibroids.—Bond² draws these lessons from his study of 50 cases of fibroid tumors: A history of prevailing sterility or frequent and repeated miscarriages; the disabling effect on the working capacity or enjoyment is due to pelvic pain and distress from pressure rather than to increased menstruation; the association of oöphoritis and cystic changes in the ovaries with tumor formation in the uterus; the frequency of degenerative changes especially in large tumors; and the invasion of the uterine walls by numerous small fibroids. In regard to treatment his conclusions are that the decision to operate must depend on danger to life and the amount of disablement, ill health, and suffering which are caused by the disease. The uterus can be safely amputated at any level, and the absence of recurrence of fibroid disease in the stump or cervical portion of the uterus is an argument in favor of cervical amputation as against panhysterectomy. In the former case, also, the pelvic floor is left intact. Myomectomy may be practised in cases of single and accessible tumors. In all cases where possible, one or both ovaries should be left in the operation of panhysterectomy for fibroid disease. The beneficial effect of the procedure is shown in the more complete convalescence and in the modified character of the artificial menopause. [w.k.]

Küstner's Suprasympyseal Crucial Incision.—Heil³ warmly recommends Küstner's suprasympyseal crucial incision (transverse skin incision, vertical muscle, and peritoneal incision) in cases of ventrofixation. He says it offers the best cosmetic effect; it makes the wearing of an abdominal bandage unnecessary; it diminishes the danger of hernia. It can also be used with good results in cases of removal of tubes and ovaries. He avoids the formation of hematomas after the operation by the use of sandbags for from 24 to 36 hours after the operation. He reports his results in 12 cases of ventrofixation, which were perfectly satisfactory. In none of them had he to contend with the complication of hematoma formation. [E.L.]

Tuboabdominal Pregnancy Unruptured at the End of Six Months.—This case is reported by Gyselynek.⁴ The patient was a woman of 36, who, after missing two menstrual periods, was seized with abdominal pain, metrorrhagia, vomiting and recurring syncope. After eight days these symptoms ceased, but recurred in three weeks. They then ceased for two months when they again recurred. Examination revealed a tumor in the right side of the pelvis and the diagnosis of extrauterine pregnancy was made. Section revealed a tumor the size of an adult head with adhesions to the intestines and meso-appendix. Total hysterectomy and appendicectomy were performed. Incision of the tumor showed it to contain a macerated fetus 31 cm. (8 inches) long, enclosed in amnion and chorion, and a placenta 14 cm. (5½ inches) in diameter. It sprang from the outer end of the right tube, both tubes and ovaries being normal. This case is classed as a tuboovarian pregnancy, the nutrition being supplied by excessively developed uteroovarian vessels and by vascular adhesions. [A.G.E.]

¹ Bull. et Mem. de la Soc. de Chir. de Paris, Vol. xxviii, p. 636, 1902.

² Münchener medicinische Wochenschrift, November 18, 1902.

³ British Medical Journal, January 17, 1903.

⁴ Zeitschr. für Diät. und Physic. Therapie, September, 1902.

⁵ Münchener medicinische Wochenschrift, December 23 and 30, 1902.

¹ Wiener klinische Wochenschrift, October 23, 1902.

² Lancet, January 17, 1903.

³ Münchener medicinische Wochenschrift, November 11, 1902.

⁴ Journal Médical de Bruxelles, December 11, 1902.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPELMAN

REVIEW OF LITERATURE

Leprosy: the Treatment Recommended by Dr. Razlag.¹

—First of all, the baths are of great importance; I use cold or warm baths of fresh water; also seawater baths, and medicated baths, with iodine, tannic acid, permanganate potassium, liq. calcis sulf., just as the condition of the patient requires. As sudorific, generally jaborandi, or simply strong coffee or tea. Wounds: Chlorid or sulfate of zinc, hydrogen dioxide, ichthyol, chrysoarobin, arsenic, tannic acid, tr. ferri chlorid, iodine, ol. gynocardia odor., zinci oxid., creosote, croton oil, salicyl. acid, tr. iodine sozoidol, sodii, zinci and hydrargyri, permanganate potassium, strychnin, tar, etc. Dressing with plain absorbent cotton, sometimes with xeroform powder, but never iodoform. It is necessary in the treatment of wounds to make some combination of the above-mentioned drugs, especially in the use of ointments, for which purpose I generally prefer lanolin tar or glycerin. For the massage and friction of anesthetic skin, croton oil, strychnin sulf., chaulmoogra oil, in combination with ol. olive, and sometimes pure mucuna pruriens. The edema can be well reduced by leeches, and I strongly recommend the use of these to a large extent; but great care must be taken how and where to apply them. Internally, liq. pot. arsenitis, or arsenic pills in combination with strychnin and ichthyol; sodii salicyl., ol. jecoris aselli, guaiacol, creosote and sometimes airoil seem to produce more good effects than any other drug. I am well acquainted with the use of all the other drugs, as oils, ointments, and liquids used externally or internally, but finally came to the conclusion to keep on the above-mentioned treatment. Care must be taken that the wounds heal slowly, as a quick closing of ulcers, etc., produces generally again the appearance of nodula as well as edemas. The patients must expose themselves as much as possible to the air and be dressed only as much as will cover the body. It will be necessary to adopt in the beginning of the treatment exclusively my method, and nobody should be allowed to try any other treatment on the patients. It is necessary that every doctor shall get acquainted with this method of treatment if he attempts to treat lepers. It is also of great advantage to teach the improved lepers the treatment of wounds and bandaging, as they will thus, by helping the doctor, save a good deal of work. We must remember that no nation or race can be regarded as immune, and, apart from all theories, it is a fact that for everybody infection is dangerous. Hereditary leprosy counts no more than about one-eighth of the lepers; all the rest is a subjectively contracted disease. In the leper village, Fat Fung Yun, are 982 lepers, and of these there are only 106 cases of hereditary origin. A hereditary predisposition does not exist, as it is a clear fact that to such an infection a hereditary disposition is an empty theory and nonsense. In spite of what so many authors are writing about it, it is true that predisposition has a good deal to do with every kind of contagion or infection, but in this disease a hereditary predisposition is excluded.

Thyroid Extract in the Treatment of Lipomas.—Garand and Galland² report the case of a woman, aged 48, who for about 18 years had presented on the forearms a series of lipomas varying in size from that of a small pea to that of a peach. Under prolonged administration of thyroid extract these tumors disappeared almost entirely. During treatment it was necessary to combat symptoms of excessive dosage, such as tachycardia and diarrhea. Garand and Galland believe that this substance should be tried, not only in the treatment of multiple lipomas but also in large lipomas; since the local accumulation of fat is often associated with functional disturbances of the thyroid body. [L.F.A.]

Ammonium and Rubidium Bromid in the Treatment of Epilepsy.—Laufenauer³ considers the double ammonium and rubidium bromid more sedative than the other bromids in the treatment of epilepsy. He has employed it in nearly all

forms of epilepsy. The average dose of 4 to 5 grains (60 to 80 grains) produces marked hypnotic and sedative effects when administered in the evening. The following formula may be used:

Ammonium and rubidium bromid	6 grams (90 grains)
Syrup of lemon	18 cc. (5 drams)
Distilled water	100 cc. (3½ ounces)

Each tablespoonful contains 75 centigrams (11 grains) of the drug. [L.F.A.]

Treatment of Syphilis by Hypodermic Injections of Mercury.—Graves⁴ reports four selected cases to illustrate the value of the hypodermic use of mercury, which has given him most satisfactory results. He uses a mixture made of equal parts of a 2% mercuric chlorid solution and a 2% sodium chlorid solution. Daily injections of 6 drops, or ½ grain, are given at first, the dose being increased and the intervening period lengthened according to the individual case. A larger dose than ¾ of a grain has never been used. [A.G.E.]

Treatment of Convulsions of Unknown Origin.—Périer⁵ gives these directions: 1. Loosen the clothing around the neck, thorax, and abdomen, and place the patient on the back with the head slightly elevated. If constipation is present, an enema of oil, glycerin, and soap should be given. 2. If the patient has suffered from indigestion, vomiting may be provoked by tickling the uvula. This should be followed by a purgative enema. 3. At the same time a few drops of ether or chloroform may be inhaled, and the windows opened. 4. If the convulsion continues, a hot bath or a mustard bath should be given; the patient is then dried quickly and placed in bed. To prevent the return of the crises, the following solution may be used:

Ammonium bromid } Potassium bromid } Sodium bromid } Syrup of codein	} of each 0.5 gram (7½ grains) 5.0 cc. (75 minims) 30 cc. (1 ounce) 100 cc. (3½ ounces)
Syrup of orange flowers	
Lime juice	
One teaspoonful every hour.	

5. The patient should not be left until the convulsion is entirely overcome, which is definitely determined only when the patient passes urine. [L.F.A.]

Treatment of Lupus of the Face by Phototherapy.—Lepeut⁶ regards phototherapy as the treatment of choice for lupus of the face and exposed portions of the body, the beneficial effects being due to the inflammation and proliferation resulting from its application. The chemical rays also have a distinct bactericidal action. The treatment is painless, and results in the formation of smooth cicatrices. The proportion of cures produced by this means is greater than by any other method now employed. [L.F.A.]

Gonorrhoeal Nonsuppurative Arthritis.—Clere-Dandoy⁴ emphasizes the value of urethrovessical irrigation with potassium permanganate solution in the diagnosis of obscure joint affections. In a great majority of cases of arthritis due to the gonococcus the above procedure will arrest the articular lesion. Patients deny having had syphilis, and will also deny the presence of gonorrhoea, acute or chronic. Hence the value of the treatment named. The writer uses very weak solutions of permanganate. [A.G.E.]

Ointment for Fissured Nipples.⁵—

Menthol	1.5 grams (22 grains)
Salol	2 grams (30 grains)
Olive oil	2 grams (30 minims)
Wool fat . . . . .	.50 grams (12½ drams)

This may be applied twice daily. [L.F.A.]

FORMULAS, ORIGINAL AND SELECTED.

For Pulmonary or Intestinal Hemorrhage.—

Crystallized calcium chlorid, c. p.	15.5 gms. (4 dr.)
Codein sulfate or } Morphin sulfate } . . . . .	.06 gm. (1 gr.)
Essence of pepsin	30 cc. (1 fl. oz.)
Distilled water, sufficient to make	60 cc. (2 fl. oz.)

Mix. Dose: One teaspoonful in a little water every second or third hour. [S.S.C.]

¹ The Old Dominion Journal, January, 1903.

² Bulletin Général de Thérapeutique, Vol. cxliv, No. 14, 1902, p. 556.

³ Bulletin Général de Thérapeutique, Vol. cxliv, No. 21, 1902, p. 830.

⁴ Journal Médical de Bruxelles, December 4, 1902.

⁵ Bulletin Général de Thérapeutique, Vol. cxliv, No. 20, 19 2, p. 800.

¹ Public Health Reports, January 31, 1903.

² Bulletin Général de Thérapeutique, Vol. cxliv, No. 14, 1902, p. 553.

³ Bulletin Général de Thérapeutique, Vol. cxliv, No. 16, 1902, p. 637.

PATHOLOGY.

J. EDWIN SWEET

EDITORIAL COMMENT

The Etiology of Syphilis.—The numerous descriptions of parasites, bacteria, etc., which are the cause of syphilis are the source of much interest and amusement to the profession, but their very number and various character have given rise to a spirit of extreme skepticism toward any new discovery whatsoever in the field of the etiology of syphilis. Among the latest discoveries is the bacillus of Joseph and Piorkowski,¹ who have been able, by a somewhat unusual procedure, to isolate an organism from the sperma of syphilitics. The culture medium is a fresh, sterile placenta. The bacillus can be transplanted from the placenta to agar, serum, and even gelatin. It is described as of the form of the diphtheria bacillus, and of the size of the subtilis; the placenta colonies are described as "dewdrop-like," on agar and gelatin the growth is like wax. The Gram test is positive. Joseph and Piorkowski report thirty-nine cases in which the infection had occurred from two months to five years previously, in which their bacillus was found. Fifteen cases in which the disease had been treated gave negative results. The bacillus was also found in syphilitic lesions of various nature and location. Control experiments with normal sperma on placentas gave, of course, negative results. Attempts to inoculate pigs were not successful. We are not in a position to speak with authority upon this "syphilis bacillus," but we trust that control researches will be immediately made by various able bacteriologists. We must confess, however, to a great degree of skepticism, for the results are too good to be true. It seems strange, too, that a bacillus of such size and present in such numbers in syphilitic lesions should have escaped the notice of the many able bacteriologists who have worked in this field. The proofs advanced by Joseph and Piorkowski would have been considered very satisfactory at one time in the history of medicine, but we have been led into false paths too often, and will await the further development of the new bacillus with great interest.

Etiology and Pathology of Prostatic Enlargement.—The monumental work of Ciechanowski, whose publication a few years ago produced a great change in our ideas concerning the etiology and pathology of enlarged prostate, is receiving the most general support. Greene and Brooke² have confirmed his result, and now Crandon,³ in a very extensive and thorough study of the prostate, brings further support and adds observations of much value. He considers the senile vesical insufficiency, commonly referred to as "prostatism," to be not a single entity, but a complex condition. In this condition the chief exciting conditions are (1) atrophy of the bladder muscle and new growth of connective tissue infiltrating the muscles; (2) mechanical obstruction at the beginning of the urethra, which may be due to a posterior lip in front or a retroprostatic pouch, a true middle lobe, or an enlargement of one or both lateral lobes protruding into the urethra. Chronic cystitis intensifies these two causes. Stone in the bladder intensifies the condition, but is rarely a primary cause of insufficiency. Obstruction is more important than the atrophy of bladder muscle. The most marked causes are those with combined atrophy, connective tissue infiltration, enlarged prostate, and chronic cystitis. Fatty changes in the bladder muscle and arteriosclerosis of the vessels play no part in the condition. True prostatic enlargement is due to a chronic inflammatory condition occurring in the deepest portions of the prostate, midway between the periphery and the urethra. Here is found new connective tissue and con-

tracted scar tissue about the principal excretory canals of the gland. This contracting tissue compresses and occludes the lumina; the contained secretion cannot escape, and by its accumulation causes peripheral dilation of gland tubules. The peripheral dilation is more rapid and more marked the nearer to the exits the obstruction occurs. This dilation is the essential factor in producing the increase in the size of the gland; the newly formed connective tissue is unimportant, and the participation of muscle tissue (myoma) doubtful. In the same way atrophy of the prostate results when the new formation of connective tissue occurs at the periphery of the gland and compresses the blind ends of the tubules, the atrophy of which, combined with shrinking of the stroma, leads to the small prostate. As a result of his own observations and those of Itinger and Ciechanowski, Crandon concludes that the underlying cause of the usual form of prostatic enlargement (and of certain forms of atrophy) is the slow formation of a new connective tissue due to infection or to infection aggravating a senile degenerative process. The gonococcus is probably the most common specific infection because of (a) its frequency, (b) other inflammatory conditions are not common in this region, and (c) a great similarity exists between the histology of the gonorrheal process and that of the senile prostate. This explanation of prostatic enlargement seems most rational. We know that in a very large proportion of cases, according to some writers 90%, the posterior urethra is involved secondarily, sometimes with a definite prostatitis, frequently latent and unsuspected. The absence of history of gonorrhea is unimportant; patients with stricture frequently forget they ever had gonorrhea. The gradual acute involvement of the prostatic tissue is natural, the resulting connective tissue increase, and scar tissue formation produces obstruction of the prostatic ducts, dilation and proliferation of the glands results, certain subsidiary connective tissue changes occur, and the picture is complete. The course of the process as worked out by Crandon is most convincing and complete.

REVIEW OF LITERATURE

Cancerin "Adamkiewicz."—Decker¹ contributes a short article upon the therapeutic value of the so-called specific for cancer, "cancerin," the preparation of Adamkiewicz. Decker has tested the "specific" in four cases, two esophagus carcinomas, one carcinoma of the stomach, and one of the descending colon. Decker reaches the same conclusion as that reported by Billroth, Kaposi, and Albert, namely, that "cancerin" has no appreciable effect whatever upon carcinoma. [J.E.S.]

The Obtaining of those Products of Bacterial Metabolism Contained in the Cell-substance of the Bacteria.—The article of Levy and Pfersdorff² is a description of a method for obtaining those bacterial toxins which are supposed to be contained within the bodies of the bacteria, and are very difficult to obtain in solution. The method is based upon the process of autolysis which occurs normally in old cultures of certain species of bacteria. The authors have obtained the toxin of anthrax in solution, but the paper is too much in the nature of a preliminary report to be of value. [J.E.S.]

Retardation Phenomena in Fresh Immune Sera.—Volk and Waelle³ demonstrate that an immune serum can possess the peculiarity of causing agglutination in high dilutions, while less highly diluted tests cause incomplete agglutination, or even show no agglutination at all. This fact is of interest to all those who use Widal's test. [J.E.S.]

On the Relation of the Animal Cell to Staining Mixtures.—Mosse⁴ gives simply the results of his work on the value of different staining mixtures for the determination of the reactions of the cell toward the staining reagents commonly employed in differentiating between basophilic and neutro-

¹ Deutsche med. Wochenschrift, Nos. 50, 51, and 52, 1902.² Jour. Am. Med. Association, xxxviii, 1051, 1902.³ Annals of Surgery, December, 1902.¹ Münchener medicinische Wochenschrift, No. 51, 1902, p. 2146.² Deutsche med. Wochenschrift, No. 49, 1902, p. 879.³ Wiener klin. Wochenschrift, No. 49, 1902, p. 1305.⁴ Berliner klin. Wochenschrift, No. 49, 1902, p. 1148.

philic cell-components. Mosse's statement that the elements of the yolk change their character as the egg approaches maturity is suggestive of the possibility of more extensive changes in certain granules of the blood-cells than are at present recognized by pathology. [J.E.S.]

On the Value of Cryoscopy in the Diagnosis of Death by Drowning.—Revenstorff's¹ paper is a contribution to our knowledge of the methods applicable in forensic medicine. The method of determining the freezing point of the blood from both sides of the heart is based upon the fact long established experimentally that more or less of the fluid in which an animal is drowned passes through the capillaries of the lungs and dilutes the venous blood. Revenstorff reaches the conclusion that the method, when positive, *i. e.*, when it can be shown that the freezing point of the blood from the right side of the heart is higher than that of the blood from the left side, is valuable as additional evidence, and is very easily carried out; but decomposition rapidly removes any difference which may have existed, and the blood is not necessarily diluted during death by drowning. It must be concluded from this paper that the determination of the freezing point should be included among the regular forensic tests in every questionable case, but that the evidence thus obtained can at best be considered only as corroborative. [J.E.S.]

Streptococcus Serum.—Piorkowski² contributes an addition to our knowledge of the disputed question of the specificity of the streptococci. He has succeeded in obtaining a specific serum against the streptococcus which causes the disease called "Pferdedruse," a contagious, catarrhal affection of the nasal and pharyngeal membranes of horses, followed generally by suppuration of the neighboring lymph glands. The serum has protective and curative properties. It agglutinates the specific streptococcus in dilutions of 1-100, the streptococcus of angina but slightly or not at all, and other pathogenic species in dilutions of less than 1-25. Piorkowski concludes that there are specific races, and that success in the use of an antistreptococcus serum will be obtained only where an antiserum for the specific organism found in the particular group of cases is used. [J.E.S.]

Researches on Epithelioma Contagiosum of Fowls.—Marx and Sticker³ have undertaken a study of this disease because of its relation to other diseases in which the epithelium is particularly affected, carcinoma, molluscum contagiosum, smallpox, etc. Their conclusions are that since the etiologic factor will pass the pores of a Berkefeld filter, it cannot be any of the various parasites which have been described as the cause; that it possesses a marked resistance to heat, etc.; that its virulence for the pigeon is lost by passing through the organism of the hen; and that the disease confers an immunity. [J.E.S.]

The Pathology of the Large Bloodvessels of the Brain.—Marburg⁴ has made the interesting observation of calcification of the internal elastic membrane of the bloodvessels of the brain in comparatively young persons, even in a child of 6½ years. Marburg explains these cases in the same way that Virchow explained calcareous metastases—by the coincidence in the body of a degenerative bone process and a faulty excretion of lime salts. This explanation meets the case of the young child which suffered from severe rachitis, and died of scarlatina. The accepted explanations of early apoplexies and cerebral affections following disease of the bloodvessels are two in number—syphilis and hereditary weakness of the vessels. The author would add as a third factor this early, isolated calcification of the internal elastic membrane. Marburg has further observed in the larger bloodvessels of the brain the formation of cartilage cells, and he designates the process endarteritis cartilaginosa. He considers this a pure metaplastic process. [J.E.S.]

Nencki's Researches on Hemoglobin and Its Relation to Chlorophyll.—Frau Dr. Sieber-Schunoff's⁵ object in writing this paper is evidently to acquaint the medical world with some of the results obtained by the physiologic chemist, v. Nencki.

The writer gives an historical sketch of v. Nencki's work which led to the discovery that hemopyrrol can be obtained from both hemoglobin and from chlorophyll, and that hemopyrrol is excreted from the animal body as urobilin. [J.E.S.]

Benign Adenoma of the Stomach, Arising from Peptic Ulcer.—Albu¹ reports an interesting case of a palpable, benign, tumor of the stomach, successfully removed by operation; the histologic construction of the tumor was that of simple glandular hypertrophy, developing from an old ulcer scar. [J.E.S.]

Croupous Pneumonia with Sepsis Caused by the Pneumobacillus of Friedländer.—In this case Friedländer's bacillus was isolated from the circulating blood and was also obtained from the pneumonic infiltration of the lung. Philippi² concludes that the pneumococcus of Fränkel cannot be considered as the sole cause of pneumonia; in rare cases Friedländer's bacillus can produce typical symptoms, and may be the cause of sepsis. [J.E.S.]

Fat Metabolism in the Organism.—Leo³ has turned his attention to the question of what becomes of the glycerin, formed when the fats are broken up into glycerin and fatty acids. He describes a method for demonstrating the presence of glycerin, by the use of which he has found glycerin in an artificial mixture of stomach secretion and milk. His efforts to discover glycerin in feces and urine have met with negative results, even in the feces of persons to whom had been given as high as 80 gms. of glycerin. The urine of a series of patients suffering from a variety of chronic diseases gave negative results. In the urine of a patient with diabetes insipidus, Leo was able to demonstrate the presence of glycerin, a fact which, if borne out by subsequent research, may prove of importance in the study of this obscure disease. [J.E.S.]

The Significance of Blood-platelets in the Blood of Syphilitics.—Vörner⁴ has turned his attention to the corpuscular elements described by Losdorfer in an address before the Medical Society of Vienna, and claimed to be pathognomonic of syphilis. Vörner describes their formation as was first described by Losdorfer, but calls attention to the fact which escaped Losdorfer's observation, that the process is identical with that first described by Arnold in his account of the development of the platelets of normal blood. Thus Vörner effectually proves the nonspecificity of these elements, and gives further proof of the fact by the discovery of the same elements in the blood of anemic patients suffering from gonorrhoea. Further, this platelet formation can only be observed in the blood of anemic syphilitics, and is a phenomenon due to the anemia, and having no direct connection with lues. [J.E.S.]

The Diagnostic Value of Leukocyte Counts in Typhoid and in Surgical Suppurations.—Kühn⁵ arrives at the conclusion that leukocyte counts, especially in all cases of appendicitis, are of as great diagnostic value as the consideration of pulse and temperature. The facts must constantly be borne in mind, as emphasized by other authors, that severe septic processes, or general sepsis, can be accompanied by normal or subnormal counts, and that an hyperleukocytosis may be little marked in chronic processes, or may have already disappeared in cases of fully developed or encapsulated abscesses. [J.E.S.]

The Influence of Albumins on the Coagulation of the Blood.—Since it has been shown that gelatin regularly contains tetanus germs Brat⁶ has investigated the value of a derivative of gelatin, gluten, which contains no tetanus germs with a view of determining its action on blood coagulation. The paper is of practical and theoretic interest. Brat shows that gluten has the same action as pepton, it prevents the coagulation of the blood; this is also true of gelatine. The value of gelatin injections cannot therefore be based upon any hemostyptic action, for its action is decidedly nonstyptic. Such injections do, however, aid in the formation of a thrombus, which fact Brat explains by assuming that substances are added to the blood which in some way cause an excessive deposit of plastic

¹ Deutsche med. Wochenschrift, No. 48, p. 865, 1902.

² Münchener medicinische Wochenschrift, No. 45, 1902, p. 1884.

³ Berliner klin. Wochenschrift, No. 49, 1902, p. 1141.

⁴ Deutsche medicinische Wochenschrift, No. 50, 1902, p. 897.

⁵ Münchener medicinische Wochenschrift, No. 50, 1902, p. 2085.

⁶ Berliner klinische Wochenschrift, No. 49, 1902, p. 1146, and No. 50, p. 1170.

¹ Münchener medicinische Wochenschrift, No. 45, 1902, p. 1880.

² Berliner klin. Wochenschrift, No. 48, p. 1125, 1902.

³ Deutsche medicinische Wochenschrift, No. 50, 1902, p. 293.

⁴ Wiener klin. Wochenschrift, No. 46, 1902.

⁵ Münchener med. Wochenschrift, No. 45, 1902, p. 1873.

material at the site of thrombus formation. This plastic material, he thinks, is derived from the blood-corpuscles. The therapeutic value of the injection of gelatin and its derivatives is therefore upheld, even though it is not to be explained as an hemostyptic phenomenon. [J.E.S.]

The Carbohydrates of the Albumins of the Blood Serum.—Langstein,¹ in a preliminary communication, claims to have made the important discovery that glucose is a constituent of serum globulin. The paper, while of immediate interest to the physiologic chemist alone, is of interest for its bearing upon the normal metabolism of the body, and especially for its bearing upon abnormal metabolism, particularly as seen in diabetes mellitus. [J.E.S.]

The Hemolysins of Human Serum.—Halpern² finds a decided increase of hemolytic action of the blood serum from patients suffering from typhoid, while in the serum from a variety of other diseases no change could be found, except in the case of one patient suffering from septicemia, where a decided decrease was demonstrated. [J.E.S.]

The Behavior of the Blood in Measles and Scarlet Fever During Childhood.—There is but little agreement concerning the state of the blood in measles and scarlet fever, in spite of the large volume of literature on the subject. Reckzeh³ therefore has undertaken to make methodical examinations in 10 cases each of measles and scarlet fever. It is true that in but few cases will the differential diagnosis make any difficulty, but the behavior and state of the blood is such a constant one that in some instances it will clear up the diagnosis of a doubtful case. Probably the reason why there is so much disagreement in the results of the different authors is that each of them has examined only a very limited number of cases. Reckzeh's results may be summed up as follows: The number of the red corpuscles in general is but slightly altered, more, however, in scarlet fever than in measles. The same may be said concerning the character of the red cells and the amount of hemoglobin; in scarlet fever poikilocytes and normoblasts are occasionally found. The state of the leukocytes is much more characteristic. In measles there is either a normal number or a diminution of leukocytes; in scarlet fever there is hyperleukocytosis. In the former as the temperature falls the leukocytes gradually increase; in the latter the temperature and leukocyte curve run parallel. In both diseases, but especially in measles, is the number of polynuclear neutrophilic cells diminished, while lymphocytes, both large and small, are relatively increased. The eosinophilic cells are diminished in number in measles, reaching their normal state long after recovery; in scarlet fever they are constantly increased. [E.L.]

Primary Obliterative Inflammation of the Main Trunks of the Hepatic Veins.—This lesion is uncommon and rarely recognized, but its interest is more than that of a pathologic curiosity. Moore⁴ gives the history of a previously unrecorded case and reviews 12 others collected from literature. The clinical manifestations are those of portal obstruction, ascites and dilation of the superficial abdominal veins. After five or six weeks death generally occurs from cardiac failure and general exhaustion. In most of the cases the condition appeared suddenly in the midst of apparent health. In the specimens examined by the writer the lesion was a primary proliferative inflammation independent of any prior thrombosis. The absence of any local change which could be regarded as the primary focus from which irritation might have extended to the vein compels the assumption of some hematogenous factor and the limitation of its action must be sought in local susceptibility. The lesion occurs nears the seat of important postfetal changes. The processes leading to obliteration of the ductus venosa close by may be called into renewed activity by some irritant such as syphilis. [H.M.]

A Rapid Reaction for Bence-Jones Albumose.—Boston⁵ suggests the following method—depending upon the presence in the albumose of loosely combined sulfur: (1) 15 cc. to 20 cc. of

filtered urine are placed in a test-tube and to it an equal quantity of saturated solution of sodium chlorid is added, and the whole shaken; (2) 2 cc. to 3 cc. of a 30% solution of caustic soda are now added and shaken vigorously; (3) the upper one-fourth of the column of liquid is gradually heated over the flame of a Bunsen burner to the boiling point, whereupon a solution of lead acetate (10%) is added, drop by drop, boiling the upper previously heated stratum of liquid after each additional drop; (4) when the drop of lead acetate comes in contact with the liquid a copious pearly or cream-colored cloud appears at the surface, which becomes less dense as the boiling point is reached; and when boiling is prolonged for one-half to one minute the upper stratum shows a slight browning, which deepens to a dull black. This lessens in intensity toward the bottom of the tube. After standing the reaction becomes intensified, and a black precipitate falls through the clear liquid and collects at the bottom of the tube. [A.O.J.K.]

The Nature of Beri-beri.—Arthur Stanley¹ presents an etiologic study of this disease among Chinese prisoners in Shanghai, from which he draws the following conclusions: 1. Incidence of beri-beri in Shanghai on Chinese prisoners under municipal police supervision is markedly greater than on the general public. 2. The incidence in four widely separated prisons completely isolated in every respect was of approximately the same degree. In none of these places were the European and Indian staff affected, though they resided in the same compound with the prisoners. The cause of the disease, therefore, does not arise either from the soil or its immediate surroundings. 3. The simultaneous instance at the gaol and police stations would point rather to a general cause than to place infection, but would also be explained by diffuse infection among the native community generally; a case admitted to aggregations of susceptible units as in gaol and police cells spreading by contagion (intimate contact). 4. The figures show a progressive development of infectivity of beri-beri on all the four places where municipal prisoners are aggregated. 5. The fact that beri-beri mainly occurs among natives aggregated for periods of over one month favors the idea of its propagation by contagion. Given the presence of the infective agent, whether conveyed in food or by parasites or by contagion, its operation would be favored by aggregation of potentially infective units. 6. Inasmuch as apart from rice the food-supply of three out of four prisons was from different sources, and a change of rice for all the prisons to one of recognized good quality produced no well-marked effect on the prevalence of the disease in two months, food infection would not appear to be a factor in the cause. 7. Beri-beri being a peripheral neuritis, which is a pathologic condition usually associated with toxemia, food would, in the absence of a primary lesion (as in diphtheria) seem especially indicated as a cause. For the same reason the cause would be met with in specifically contaminated food rather than in either qualitative or quantitative changes in diet. 8. The marked and apparently primary degenerative action of beri-beri on heart-muscle like that produced by diphtheria² and to a less degree by influenza and alcohol and arsenic poisoning, all of which may also cause peripheral neuritis, and the remarkable clinical resemblance of beri-beri to diphtheria in the frequency of death from sudden heart failure, would indicate a form of chronic poisoning.³ 9. The identity of the pathologic changes in beri-beri, diphtheria and arsenic and alcohol poisoning, and the grouping of alcoholic poisoning with ergotism, pellagra, and lathyrism, which are caused by poisons produced by parasites in vegetable foods, suggest the possibility of the cause of beri-beri being a toxin derived from an extraneous parasite of some article of food. 10. In an outbreak in Richmond Asylum, Ireland, which is held to disprove the rice origin of the disease, it is impossible to eliminate from the diet such articles as rice, tapioca, sago, etc., which may have been derived from countries in which beri-beri is prevalent. Beri-beri seems to be markedly prevalent only in countries where rice is the staple food. 11. The oft-repeated statement that a beri-beri patient recovers quickly when removed to a fresh locality may not indicate that this disease is

¹ Münchener med. Wochenschrift, No 45, 1902, p. 1876.

² Berliner klin. Wochenschrift, Nos. 48 and 49, 1902.

³ Zeitschrift für klinische Medizin, 1902, Vol. xiv, p. 107.

⁴ Medical Chronicle, July, 1902.

⁵ American Journal of the Medical Sciences, cxiv, p. 567, 1902.

¹ The Journal of Hygiene, July 1, 1902.

² Metrop. Asylums, Bd. Rep., 1897, p. 180.

³ Jour. Trop. Med., September 1, 1901.

a place infection, but rather that the source of the toxin may be removed by change of residence. 12. Beri-beri does not seem to be associated with any particular trade or occupation. 13. Something more is required for the prevention of beri-beri than attention to general rules of sanitation, such as ventilation, cleanliness and diet. Moreover, isolation of cases as they arise, followed by disinfection, does not suffice to limit the disease. 14. The maximum incidence of beri-beri in Shanghai being at the end of the tropical summer (the remainder of the year being quite temperate) the liability to recurrence at this season in the same patient would be compatible with the elaboration of a toxin favored in its origin by the period of maximum atmospheric heat and moisture. 15. The blood in beri-beri is sterile. 16. The bacteria found by Pekelharing and Winkler¹ associated with beri-beri bear no causal relation to the disease. [C.S.D.]

Trypanosoma Occurring in the Blood of Man.—Laveran² read before the Academy a paper written by Duthen, of Liverpool, in which he reports finding trypanosoma in the blood of a European working along the Gambia river, and suffering from irregularly remittent fever. The organisms were especially plentiful during the stage of pyrexia. The symptoms included extraordinary weakness, edema of eyelids, injection of conjunctiva, enlarged and tender spleen, rapid pulse and respirations, without any organic basis. Malarial organisms were never found. Recovery took place under arsenic. The same organism was found by him in the blood of a native child. He describes this variety of trypanosoma very fully, considering it an entirely new species. It is smaller than any of the known members of the family; its method of propagation is unknown. He calls it *Trypanosoma gambiense*, and states that *Glossina palpalis*, a fly abundant along the marshes of the river Gambia, is the carrier of the infection. [E.L.]

Human Botryomycosis.—The observations of E. Bodin³ of two cases of this affection in human beings leads him to question the specificity attributed to the characters of this affection by Poncet and Dor⁴ and to regard it as entirely due to *Staphylococcus aureus*.

Primary Sarcoma of the Pericardium.—Pechere and Stordeur⁵ report a primary sarcoma of the pericardium, the patient in whom it occurred being a man of 38. Before death he exhibited marked edema of the neck, trunk and upper extremities. Physical signs showed that there was invasion of the anterior mediastinum by tissue that extended beyond the sternum and surrounded the heart. There was left pleural effusion. Autopsy revealed a tumor 22 cm. (9 inches) in length by 9 cm. to 14 cm. (3.7 to 5.4) in width occupying the anterior mediastinum. Microscopic examination showed the growth to be a spindle-cell sarcoma. The point of origin is believed to have been the pericardium covering the anterior part of the ventricles. [A.G.E.]

Examinations Concerning the Origin and Solubility of the Oxalic Acid Excreted in the Urine.—Klemperer and Fritschler⁶ have made extensive examinations into the derivation and solution of oxalic acid, and have formulated the following conclusions: It is derived chiefly from the vegetable constituents of the food. The oxalates are partly dissolved by water, partly by the hydrochloric acid of the gastric juice; from $\frac{1}{10}$ to $\frac{1}{5}$ of them are absorbed to be excreted by the urine as calcium oxalate. The remainder reaches the intestinal canal, to be destroyed by bacteria. A portion of the oxalic acid of the urine is derived from protoids; glycochol and its derivative, creatin, takes part in its formation. Urine is therefore never free of oxalic acid, even during starvation. A part of it may come from absorbed bile, inasmuch as glycochol is liberated in the intestine from glycocholic acid. That oxalic acid is not precipitated from urinary solutions depends upon its absolute and relative quantities. It is easiest kept in solution if 1 to 1½ mgr. of it is present for every 100 ccm. of water; high acid reaction,

large amount of magnesium salts and small amounts of calcium salts favor its being kept in solution. All these various conditions are best attained by using a diet composed of a mixture of meat, farinaceous food, leguminous vegetables and considerable water, with abstinence from milk, eggs and vegetables. Spinach, cocoa and tea are to be forbidden in cases of extreme oxaluria. If bitter salts are continued in small doses over a prolonged period of time, the magnesium salts of the urine will be increased and with them the solubility of the oxalates. [E.L.]

Bacterial Intoxication and the Fatty Degeneration of Organs.—O. Torri¹ presents the results of an extended anatomic-pathologic investigation of the organs of individuals whose death was the result of infectious diseases. The condition of the liver, kidney, and heart is stated as found in a series of autopsies, a series of similar observations made on experimentally inoculated animals. He concludes that poisoning by fungi gives rise to classic fatty degeneration of the liver, kidney, and heart, the degeneration being due to the direct action of the bacterial poisons on the cellular elements. [C.S.D.]

The Romanowski Method of Staining Cancer Cells.—Feinberg² gives the technic and describes the Romanowski methylene-blue-eosin staining method in differentiating the single-celled organisms of cancer. These cells have no nucleoli and stain entirely blue. The cancer cells have a nucleolus which stains red, while the body of the cell is colored blue. [W.E.R.]

The Gelo-diagnostic Method.—Chantemesse³ reports the results of the researches made by Decobert upon the bacteriologic examination of the stools of typhoid fever by the "Gelo-diagnostic" method. In 18 cases, 16 had passed the stage of invasion and presented almost all of the clinical symptoms of typhoid fever, and two presented the symptoms of the sixth and seventh day of infection, respectively. In the first 16 cases the Widal reaction was positive on the day of admission, and an examination of the stools showed the presence of the typhoid bacillus. In the other two cases the Widal reaction was not present until the third or fourth day after admission, but the "Gelo-diagnostic" showed the presence of the typhoid bacillus in the stools on admission. They come to the following conclusions: The bacillus is constantly found during the febrile period. In 8 out of 10 cases during convalescence in which there had been no fever for five or six days the bacillus of Eberth was almost always present in the stools. In one the examination was negative for three days, then finally became positive on the fourth and following days. In the two remaining cases one free from fever for 15 days showed the presence of a number of colonies, and 18 days later again the bacillus of Eberth in the stools. In the second case apyretic for 11 days the stools appeared entirely free from the bacillus. Thus it is proved that the typhoid bacillus may exist in the stools a month after the patient has recovered from the disease. [J.H.W.R.]

The Methods of the Conveyance of Yellow Fever.—H. R. Carter⁴ enumerates the arguments for the mosquito as a host and conveyer (if not perhaps the only one) of yellow fever, and sums up the evidence as follows: 1. The analogy of other diseases conveyed by insect hosts. 2. That all facts observed about the propagation of yellow fever agree with the necessary deductions of this theory. 3. No other theory explains all of the facts observed of its propagation. [C.S.D.]

Lymphangitis Saccharomycotica Equorum.—A. Dedyulin⁵ describes in detail the symptoms and pathologic changes produced by this disease, which is found under a number of names, including African glanders, trembling lymphangitis, epizootic lymphangitis and curable farcy. In some cases all forms of treatment were unsatisfactory, but in other cases colloidal silver preparations given in intravenous injections proved beneficial, while for the external application upon ulcerated areas caustic potash, iodine with glycerin, corrosive sublimate, naphthalene and iodoform gave fairly good results. [C.S.D.]

¹ Pekelharing and Winkler, "Berl-beri," 1888.

² Bulletin de l'Académie de Médecine, May 27, 1902.

³ Annales de Dermatologie et Syphiligraphie, April, 1902. La Semaine Médicale, August 27, 1902.

⁴ La Semaine Médicale, 1897, p. 377.

⁵ Journal Médical de Bruxelles, November 27, 1902.

⁶ Zeitschrift für klinische Medizin, 1902, xlv, 337.

¹ Il Pollicinico, November, 1902.

² Berliner klinische Wochenschrift, November 10, 1902.

³ La Semaine Médicale, December 3, 1902.

⁴ Yellow Fever Institute, Washington, D. C., Bull. No. 10, July, 1902.

⁵ Arch. Vet. Nauk. St. Petersburg, 31, 1901, No. 9; Experiment Station Record, Vol. xiii, No. 10, p. 966.

Tissue Proliferation and Tumor Formation.—Marchand¹ concludes that if a parasitic origin be excluded as the cause of the malignancy of epithelial tumors, it can only be explained by the acceptance of the theory of the formation of toxic substances in the cells during their life. The formation and accumulation of these substances is traceable to a degeneration of the cells through the abolition of the normal regulation of cell activity. This degeneration may vary both as regards degree and quality. An increase in proliferation may, especially in embryonal tissue, be independent of any degeneration, but even here the destruction of normal tissue by these proliferating elements presupposes the presence of toxic substances. [E.L.]

The Pathogenic Agents of Metadiphtheric Septicemias.—Deguy and Legros² having observed that in a certain number of deaths from diphtheria there were anatomic and clinical signs of septicemia, sought in the blood taken directly from the vein of a living infant and in the blood of the heart punctured immediately after death, for the microorganisms which caused death. They have isolated two closely allied species, *Diplococcus hemophilus pertucidus* and *Diplococcus hemophilus albus*, both mobile and very virulent. These are the agents in the production of metadiphtheric cardiac thrombosis. They possess very active hemolytic properties and may be examined directly from the blood in cover-glass preparations after the Gram method. [C.S.D.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended January 31, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths	
California:	Los Angeles.....Jan. 4-17.....	6		
	San Francisco.....Jan. 11-18.....	8		
	Denver.....Jan. 10-17.....	9		
Colorado:	Chicago.....Jan. 17-24.....	11	1	
	Galesburg.....Jan. 17-24.....	1		
	Evansville.....Jan. 18-24.....	1	1	
Indiana:	Indianapolis.....Jan. 10-17.....	37	6	
	South Bend.....Jan. 17-24.....	5		
	Lexington.....Jan. 17-24.....	4		
Kentucky:	New Orleans.....Jan. 17-24.....	2		
Louisiana:	New Orleans.....Jan. 17-24.....	2		
	Aroostook Co., Presque Isle included.....Jan. 20.....	150-400		
Massachusetts:	Biddeford.....Jan. 17-24.....	10		
	Boston.....Jan. 17-24.....	5	3	
	Cambridge.....Jan. 17-24.....	1		
Michigan:	Chelsea.....Jan. 17-24.....	1		
	Grand Rapids.....Jan. 17-24.....	21		
	St. Louis.....Jan. 18-25.....	17		
Missouri:	Omaha.....Jan. 17-24.....	6		
	Manchester.....Jan. 10-24.....	7		
	Nashua.....Jan. 17-24.....	1		
Nebraska:	Camden.....Jan. 17-24.....	1		
	Newark.....Jan. 17-24.....	8		
	New York.....Jan. 17-24.....	1		
New Hampshire:	Chilllicothe.....Jan. 17-24.....	1		
	Cincinnati.....Jan. 16-23.....	8		
	Cleveland.....Jan. 17-24.....	14	3	
New York:	Dayton.....Jan. 17-24.....	5		
	Hamilton.....Jan. 17-24.....	2		
	Erie.....Jan. 17-24.....	9		
Ohio:	Johnstown.....Jan. 18-25.....	2		
	McKeesport.....Jan. 17-24.....	5		
	Philadelphia.....Jan. 17-24.....	13	2	
Pennsylvania:	Pittsburg.....Jan. 17-24.....	23	4	
	Reading.....Jan. 19-26.....	1		
	Charleston.....Jan. 17-24.....	3		
South Carolina:	Memphis.....Jan. 17-24.....	8		
	Tennessee:	Memphis.....Jan. 17-24.....	8	
	Wisconsin:	Milwaukee.....Jan. 17-24.....	3	

SMALLPOX—FOREIGN.

Austria:	Prague.....Dec. 27-Jan. 3.....	9	
Belgium:	Antwerp.....Dec. 27-Jan. 3.....	6	3
	Ghent.....Dec. 21-Jan. 3.....	2	3
Canada:	Amherstburg.....Jan. 17-24.....	2	
Great Britain:	Birmingham.....Jan. 3-10.....	1	
	Dublin.....Jan. 3-10.....	1	
	Glasgow.....Jan. 9-16.....	1	
Russia:	Leeds.....Jan. 3-10.....	3	
	Liverpool.....Jan. 3-10.....	59	6
	London.....Dec. 27-Jan. 10.....	5	
Straits Settlements:	Manchester.....Jan. 3-10.....	6	
	Sheffield.....Dec. 27-Jan. 10.....	4	
	Odessa.....Dec. 27-Jan. 3.....	4	
Singapore:	St. Petersburg.....Dec. 27-Jan. 3.....	18	5
	Singapore.....Dec. 6-13.....	2	

¹ Deutsche medicinische Wochenschrift, September 25 and October 2, 1902.
² Gazette hebdomadaire de Médecine et de Chirurgie, No. 41, 1902.

YELLOW FEVER.

Colombia:	Panama.....Jan. 12-19.....	6	2
Mexico:	Tampico.....Jan. 10-17.....	2	

CHOLERA.

Egypt:	Alexandria.....Dec. 28-Jan. 4.....	9	6
Java:	Batavia.....Dec. 6-13.....	1	1

PLAGUE.

India:	Karachi.....Dec. 13-20.....	25	13
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Changes in the Medical Corps of the U. S. Army for the week ended January 31, 1903:

WOODS, O. W., contract surgeon, is assigned to the Base Hospital, Iloilo, Panay, for duty.
 BYARS, CASPAR R., contract surgeon, will proceed to his home, Columbus, Tex., for annulment of contract.
 LORD, LESTER W., contract surgeon, will proceed to his home, West Ossipee, N. H., for annulment of contract.
 BRANCH, FRIDERICK D., contract surgeon, now at East Springfield, N. Y., will proceed to Columbia Arsenal, Tenn., for duty.
 WALL, FRANCIS M., contract surgeon, leave granted December 29 is extended one month.
 BUFORD, OLIVER H., contract surgeon, leave for seven days granted January 21 is extended seven days.
 KEFER, Major FRANK R., surgeon, is granted leave for one month and fifteen days, from about February 10.
 FARR, First Lieutenant CHARLES W., assistant surgeon, is granted leave for three months, to take effect on or about March 1.
 FLETCHER, RICHARD M., JR., contract surgeon, is relieved from duty at Fort Niobrara and will proceed to his home, Huntsville, Ala., for annulment of contract.
 SCHUYLER, WILFRED H., hospital steward, now at Fort McDowell, will be sent to Benicia Barracks for temporary duty. When relieved by another hospital steward he will be sent to Manila, P. I., for assignment to duty.
 LOWELL, CHARLES H., contract surgeon, is granted leave for one month, from about February 3.
 TWEEDE, HEDLEY V., contract surgeon, is relieved from duty in the department of California and will proceed to his home, Jackman, Me., for annulment of contract.
 So much of orders of January 2 as relate to Hospital Steward William Lyon are revoked. Steward Lyon will be sent to the Army General Hospital, Washington Barracks, when able to travel, for observation and treatment.
 NEIL, MATTHEW, hospital steward, Columbia Arsenal, Tenn., upon expiration of furlough authorized January 26, will report to the commanding officer, Company of Instruction No. 2, Hospital Corps, Fort McDowell, who will send him to Manila, P. I.
 WAHLQUIST, CHARLES J., hospital steward, Fort Wingate, will be discharged from the Army by the commanding officer of his station, under the provisions of paragraphs 157 and 158 of the regulations.

Changes in the Medical Corps of the U. S. Navy for the week ended January 31, 1903:

ROSENBLEUTH, J. C., passed assistant surgeon, resignation accepted to take effect January 23, 1903—January 23.
 WINSLOW, G. F., medical director, retired from active service after 40 years' service, upon his own application—January 24.
 HAWKE, J. A., medical director, retired from active service, having reached the age of 62 years—January 24.
 Drs. H. L. BROWN, T. C. BLACKBURN, P. L. COCKE, C. F. DUNCAN, V. DABNEY, J. B. MEARS, P. S. ROSSITER, and P. F. MCMURDO, appointed acting assistant surgeons from January 23, 1903—January 26.
 STONE, M. V., assistant surgeon, detached from the Naval Training Station, Newport, R. I., ordered home and granted sick leave for two months—January 27.
 HIGH, W. E. G., assistant surgeon, ordered to the Naval Training Station, Newport, R. I.
 TAYLOR, J. S., assistant surgeon, ordered to report to the Surgeon-General of the Navy, Bureau of Medicine and Surgery, for duty—January 27.
 KAINES, A. W., acting assistant surgeon, ordered to the Gloucester—January 28.

Changes in the Public Health and Marine-Hospital Service for the week ended January 29, 1903:

GEDDINGS, H. D., assistant surgeon-general, detailed to represent the service at meeting of Ohio Health Officers at Columbus, Ohio, January 29-30, 1903.
 SPRAGUE, E. K., passed assistant surgeon, granted leave of absence for six days from January 15, 1903, under provisions of paragraph 151 of the regulations.
 FOSTER, M. H., assistant surgeon, to report to chairman of board of examiners at San Francisco, Cal., February 16, 1903, for examination to determine his fitness for promotion to the grade of passed assistant surgeon—January 27, 1903.
 LUMSDEN, L. L., assistant surgeon, to report to chairman of board of examiners at San Francisco, Cal., February 16, 1903, for examination to determine his fitness for promotion to the grade of passed assistant surgeon—January 27, 1903.
 WARREN, B. S., assistant surgeon, granted leave of absence, on account of sickness, for one month from February 1—January 29, 1903.
 HALL, L. P., pharmacist, granted leave of absence for seven days from January 9, 1903, under the provisions of paragraph 201 of the regulations.

American Medicine ²⁴¹

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The Marshall Bill attack on the Tenement House Reform in New York, according to all competent testimony, is a peculiarly vicious attempt to reintroduce the insanitary barbarism of olden times in the cities of the State. The bill has been called "a Bill for the Propagation of Tuberculosis," but it could be as aptly described as "for the encouragement of vice and prostitution," and "for the exploitation of the poor by builders and capitalists." A correspondent writes that 27 recorded deaths from tuberculosis have occurred in one old east side tenement house that should long ago have been torn down. The New York Academy of Medicine says that the Marshall bill would undo the great advances in reform and sanitation effected by the recent Tenement House law, and that lack of light and air is one of the chief causes of the 8,000 annual tuberculous deaths and 20,000 cases in the city. Resolutions were passed by the Academy requesting the legislature not to allow any lessening of the air and light in tenement houses. This protest of the academy should be followed by similar action of all the medical societies of the State. According to Commissioner de Forest 26,000 tenements built under the old law contain dark rooms, while of the 500 built under the present law there is not one dark room. The medical profession is solidly against a return to the old conditions.

Legislators Should Consult Their State Boards of Health.—One of the ridiculous, but at the same time, tragical illogicalities of our lawmakers is that they have, under not a little pressure, and also poorly, made laws to prevent quacks from practising medicine, while at the same time they allow the patent-medicine quack freely to sell his nostrums and carry on his frauds. Worse than this, by the copyright law they really protect the nostrum seller in his nefarious calling. In other words, the lay public is not capable of choosing medical advisers, but it is entirely capable of choosing medicines, especially on the say-so of a newspaper advertisement. We are glad to see that legislators are awakening to this scandalous condition of the law and are introducing bills to regulate the so-called patent, but really secret, medicine business. These bills spring from a sincere desire to lessen or eradicate the evil, but, as sincerity and desire alone do not equip one for any sort of reform, the faults of these bills are often so great that no practical progress

would or could result. They would not work when real administration should be attempted. In all such attempts at legislation on sanitary and medical matters the framers of bills should consult the experts. There is hardly any State in which the State Board of Health should not at least be asked for its advice.

The Treatment of Epilepsy by Labor and Exercise.—Dr. Spratling, of Craig Colony, New York, says that about 50% of patients admitted to the colony are able to do work of a remunerative kind; about 25% will be able to do light housework only, and the remaining 25% can do nothing at all. According to the chief physician of the Bielefeld Colony, of 1,771 epileptics under his care, 33% have diseased minds, 62% weak minds, and only 5% sound minds. The problem, therefore, of supplying these patients with work is a difficult one; but it may be added, a most necessary one, for labor is the greatest therapeutic agent in curing epilepsy. Idleness is a great handicap. Dr. Spratling, in a private letter, says that this fact is made evident by the record of seizures. On rainy days, holidays, and Sundays, when patients do no work, the fits are doubled and even trebled in number. Dr. Weeks, medical superintendent of the New Jersey State Village for Epileptics, says that when winter comes on, and out-of-door work ceases, there is a rapid increase in the number of convulsions and in the irritability and discontent of the patients. The obvious suggestion arises that thoroughgoing systems of gymnastics should be instituted under trained instructors, to replace and even to supplement other forms of labor. The epileptic fit is a tonic and clonic spasm of all of the muscles of the body. If the gymnastics could therefore simulate this extensive synchronous innervation of many muscles, the extensors and flexors simultaneously, as in "resistance exercises," would not this physiologic draining off of the innervation flood, all the more effectively, prevent the morbid overflow illustrated in the seizures?

Laboratory of Criminology.—The medical profession of this country have almost unanimously endorsed the plans incorporated in a bill now before Congress for establishing a national laboratory for the study of the criminal and other abnormal classes. This endorsement comes from six national medical societies and 22 State

medical societies. In addition to this, many scientific, legal, and religious associations have officially sanctioned the measure, among them the "International Congress of Criminology," the highest authority in Europe. The bill has been unanimously reported by the House Judiciary Committee and the Committee on Judiciary of the Senate. One would naturally suppose that a bill thus endorsed, fundamentally humanitarian in its character, and absolutely nonpolitical, would quickly be passed. But it seems that there are a few men who are aggressively opposed to it. As most bills that pass this session must be by unanimous consent, the opposition, even of a single man, may obstruct the most meritorious measures.

Crime alone costs this country several hundred million dollars a year. In this bill \$8,000 is to be appropriated for the study of the causes of crime. Thus our country pays out millions to catch, try, and care for criminals, and nothing to lessen this outlay by investigation of its sources. And yet it is reported that this bill is opposed on grounds of economy.

Many State institutions for the abnormal classes gather statistics annually, but little use is made of them; one State does not know what the other State is doing. These data should be summarized and made useful to all the States, thus also encouraging uniformity of method. Such work will not be done by one State, but naturally falls to the Federal Government.

It has been said that the government should not do laboratory work, and that it belongs to the university. But to gather statistics of sociologic, medical, and anthropologic nature would require a clerical force, etc., not undertaken by universities. The university prepares a man for his life work, but does not carry on this work.

Some think that the scientific study of the abnormal classes should be done under private munificence. There is no doubt that private endowment could do much. But to gather data from our State institutions of a more or less confidential nature would be much easier for the Federal Government than for any private institution, for the States have great confidence in our Central Government.

Another objection urged to the study of the relation of criminal propensities to physical signs is that if school children should become known "as possessing the bodily signs of degeneracy" it would discourage them in forming good habits and work injustice to them. A pupil with scarlet fever or diphtheria is required to leave school so long as it is liable to contaminate others, but if there is a morally diseased or degenerate pupil who is teaching the others bad habits and contaminating them with moral disease, which may be worse than any physical disease, this pupil should be allowed to remain in school unknown to the others, because it is thought this would be an injustice to one. As such degenerates are fortunately few what shall we say of the injustice done to the great mass of pupils by allowing them to be exposed to this moral contamination?

It is considered wise to study the causes and signs of physical disease in order to lessen its danger to others. It seems to us strange that any one should object to the

study of the causes and signs of moral disease or degeneracy, which are most pernicious and lasting in their effects upon the young.

When we consider that our government spends thousands for the erection of monuments and millions for the investigation of plants and animals and millions more for the study of their diseases it seems strange to hear objections to the spending of a few thousand dollars to study the greatest enemy of all government, crime.

The Misuse of Eponyms by Medical Writers.—Many lovers of medical lore find it pleasant to have the history of their favorite science recalled to mind by terms embodying the names of the masters of medicine, and they find it as convenient and safe to prescribe Fowler's solution or Hoffmann's anodyne as it would be to specify these preparations by their Latin official names. The designation of operative methods, special appliances, or peculiar affections by such names as Porro's operation, the Lorenz method, the Trendelenburg posture, Nelaton's probe, or Pott's disease cannot be improved upon by the substitution of any arbitrary combination of Greek or Latin derivatives in place of the name of the discoverer. In bacteriology the terms Petri-dish or Gram's method cause no confusion in the mind of the student. There is, however, among writers on bacteriologic subjects a custom that is reprehensible in the extreme, and for which there is no valid excuse, namely, the designation of specific bacteria by the name of some person connected with its isolation or description.

The following list gathered by a cursory survey of current literature will suffice to show the extent to which this custom prevails and the confusion to which it gives rise. The real names as determined by the rules of scientific nomenclature are added to show how little clue the eponymic term gives to the systematic relationships of the organisms referred to:

- Achard and Bensaude's bacillus: *B. paracolon* Gilbert.
 Bonome's streptococcus: *Str. weichselbaumii*.
 Bruce's micrococcus: *M. melitensis* Bruce.
 Cushing's bacillus: *B. paracolon* Gilbert.
 Danysz's bacillus: *B. murium* Löffler.
 Davaine's bacillus: *Bacterium anthracis* (Cohn) Migula.
 Demme's bacillus: *Bacterium erythematiss* (Kruse).
 Deneke's spirillum: *Microspira tyrogena* (Deneke) Migula.
 Doderlein's "Scheidenbacillus": *Bacterium vaginae* (Kruse).
 Ducrey's bacillus: *Bacterium cancrisi* Kruse.
 Dungern's capsule bacillus: *Bacterium pneumoniae* Zopf.
 Eberth's bacillus: *B. typhosus* Zopf.
 Emmerich's bacillus: *B. coli* Escherich.
 Fehleisen's streptococcus: *Str. erysipelatos* Fehleisen.
 Ferchmin's bacillus of red pus: *Bacterium pyocinnabareum* (Kruse).
 Finkler-Prior bacillus: *Microspira protea* (Buchner).
 Flexner's bacillus: *B. Shiga* (Chester).
 Fraenkel's pneumococcus: *Streptococcus pneumoniae* (Weichselbaum) Gamaleia.
 Friedlander's pneumococcus: *Bacterium pneumoniae* Zopf.
 Freire's micrococcus: *M. xanthogenicus* (Freire) Sternberg.
 Frisch's bacillus: *Bacterium rhinoscleromatis* (Trevisan) Migula.
 Gwyn's bacillus: *B. paracolon* Gilbert.
 Hansen's bacillus: *Mycobacterium leprae* (Hansen) Lehmann-Neumann.
 Hoffmann's bacillus: *Mycobacterium pseudodiphtherium* (Kruse).
 Kitasato's bacillus: *B. pestis* Lehmann-Neumann.

Klebs-Löffler bacillus: *Bacterium diphtheriæ* (Flügge) Chester.
 Koch's bacillus: *Mycobacterium tuberculosis* (Koch) Chester.
 Koch-Weeks bacillus: *Bacterium ægypticum* (Trevisan) Chester.
 Kochel's capsule bacillus: *Bacterium pneumoniae* Zopf.
 Kruse's bacillus: *Bacterium subtiliforme* Schröter.
 Kurth's bacillus: *B. paracolon* Gilbert.
 Kutscher's spirillum: *Sp. tenerrimum* Lehmann-Neumann.
 Löffler's bacillus: *Mycobacterium mælei* (Löffler) Migula.
 Lummitzer's bacillus: *Bacterium Lummitzerii* (Sternberg) Chester.
 Lustgarten's bacillus: *Mycobacteria syphilidis* (Schröter) Chester.
 Malherbe and Mounier's bacillus: *B. paracolon* Gilbert.
 Mallory-Wright's capsule bacillus: *Bacterium Wrightii* Chester.
 Mandy's capsule bacillus: *Bacterium pneumoniae* Zopf.
 Mannaberg's streptococcus: *Str. erysipelatos* Fehleisen.
 Miller's spirillum: *Sp. sputigenum* Kruse.
 Moore's bacillus: *Bacterium avium* Chester.
 Neisser's gonococcus: *Micrococcus gonorrhoeæ* (Buum) Flügge.
 Nicolaier's bacillus: *B. tetani* Flügge.
 Nicolaier's capsule bacillus: *Bacterium Wrightii* Chester.
 Obermeier's spirillum: *Spirochaeta Obermeieri* Cohn.
 Ogata's bacillus: *B. dysenteriae* Kruse.
 Pfeiffer's bacillus: *Mycobacterium influenzae* (Pfeiffer) Chester.
 Pfeiffer's capsule bacillus: *Bacterium capsulatum* (Sternberg) Chester.
 Sanarelli's bacillus: *B. icteroides* Sanarelli.
 Schottmueller's bacillus: *B. paracolon* Gilbert.
 Shiga's bacillus: *B. Shigæ* Chester.
 Tils' bacillus: *B. carneus* Kruse.
 Vignal's bacillus: *B. buccalis* Sternberg.
 Widal and Nobecourt's bacillus: *B. paracolon* Gilbert.
 Yersin's bacillus: *B. pestis* Lehmann-Neumann.

Poisonous Spiders.—The common people have generally believed that spiders are venomous, and the arachnologists have said the belief was false and the effects of the bites were the products of hypnotic suggestion. Notwithstanding the sweeping conclusions based upon the negative results obtained by experiments, a perusal of the work of Linstow¹ and that of Kobert² will afford abundant and authoritative evidence as to the secretion of venoms by many species of spiders, and that these venoms are, in the majority of cases, capable of producing serious disturbances, and at times even death in various species of animals as well as in man. The evidence usually adduced by writers on spiders, for the purpose, undoubtedly, of allaying the popular dread of these useful and interesting creatures, is entirely inadequate in view of the rapid increase which is taking place in our knowledge of toxalbumins; while recent discoveries concerning heterolysins and isolysins point to possible explanations of the apparently contradictory facts that many reputedly venomous spiders are immune to the bites of individuals of the same species or tribe, while other animals are affected more or less seriously by their venom. While Kobert was able to obtain poisonous extracts from the mouth parts of a large number of spiders, many of which are ordinarily regarded as harmless, as well as from species well known to be poisonous, and to cause the illness and death of animals intravenously injected with these extracts, his work leaves the field still open for further and more exact investigation, particularly of those species concerning which the consensus of popular

opinion as to their poisonous character is supported by the testimony of competent and reliable observers, not that of the "credulous doctors" to which the Rev. Henry McCook refers in his work on American spiders. The isolation of specific toxalbumins would definitely settle the exact cause and degree of toxicity of certain widely distributed species, and the southern and southwestern United States afford several which would serve as excellent material for an investigation in some of our new laboratories of experimental physiology and pathology.

Newspaper doctors are of two kinds, the sinners, and those sinned against. The sinners we all know. Those sinned against are they who despite their honest efforts to avoid yellow journal notoriety are quoted and reported by the conscienceless editors and reporters. Of course there are some newspapers which really try to respect the wishes of physicians, and who will not quote them except when permission is given. There are others, commonly called yellow, which say, "we will publish a poor, and perhaps false report if you do not give us the facts and allow us to use your name." All professionally minded physicians know that accounts of operations, cures, etc., by the yellow journals are harmful alike to the true physician, to the patient, and to the public. In spite of the most thoroughgoing precautions to prevent the reporter from getting any knowledge of a Lorenz operation recently performed in a large hospital of an Eastern city, what purported to be a full account with scare headlines, was sprawled in the columns of a paper the next morning. In excuse for the wrong the city editor cynically said, "How do we know that in your heart you do not wish us to advertise you in this way? You quote the great and famous Professor Blank as a hater of newspaper reports about himself. Bosh! I can prove to you that, while he is talking against these reports when made by others, and abuses us publicly when we tell of his opinions, lectures, operations, etc., we can at any time get his photographs and full accounts from the underlings of his 'literary bureau,' whom he supplies with all such information, well knowing, also, where it goes." It is strange, we may add, that the advertising professors are so stupid as to think their colleagues do not know of their "advertising departments" and "literary bureaus." After all it is a poor way to get practice and a mean advantage to take of honest rivals. It would be of the utmost benefit to the profession if the "liberty of the press" could be legally "muzzled" so that physicians should not be reported except when they wish, and only with signed permit in each case.

The morbid and stupid fear of hospitals on the part of some lay people when these institutions are to be located in their neighborhood is a strange bit of atavism long persistent in a civilized age. Twice recently this incongruous prejudice has appeared in Philadelphia, the last being as to the location of the Phipps Hospital, against which as many as 600 remonstrances were signed by citizens of the ward. Two of these remarkable persons are reported by the newspapers to have had the

¹ Otto von Linstow, Gifttiere und ihre Wirkung auf den Menschen. ein Handbuch für Mediziner, Berlin, 1894.

² R. Kobert, Beiträge zur Kenntniss der Giftspinnen, Stuttgart, 1901.

title "Dr." in front of their names, and to have spoken as follows:

Dr. Simon Dubin averred that the establishment of the Phipps Institute in a congested quarter of the city was against all precedent in this country or abroad. Dr. Samuel Stalberg commented on the slim attendance, and said: "If the residents of the ward are prepared to have it made the dumping ground for every squalid and dirty consumptive in the city, they will deserve it."

If these people were as wise as they are silly they would get up mass meetings and contributions to secure the location in their midst of these health-scattering and disease-killing institutions. The neighborhood of a modern hospital is the most *healthful* place in a large city.

The gap in the "Index Medicus" series cannot be filled. The publication was discontinued with the issue of April 30, 1899, so that the missing numbers will be those of nearly four years. The gathering of the data required could not be done except in the library of the Surgeon-General at Washington, as no where else in the world are the periodicals gathered. Even if workers could be secured to undertake the immense labor of collecting again the slips of four years, it would be very expensive, and at last the editorial supervision of Dr. Fletcher could not be obtained, and without that the work would likely be valueless. The profession is under great obligations to Dr. Fletcher for consenting to undertake the supervision of the new series. We have been at a great deal of pains to learn if a way could not be found to overcome the difficulties. The money could have been secured, we are convinced, but even Americans must learn that there are many things that money alone cannot do. Fortunately the missing literature of the four years may be found in the Index Catalog of the Surgeon-General, and bibliographers and researchers will have to govern themselves accordingly.

Shirtmaker and Optician.—As a consequence of the renunciation by the oculist of much of his true professional work for the benefit of the refracting optician, the latter gentleman naturally feels himself justified in taking on airs, and in fact, of seizing upon all the duties of the oculist, except perhaps a few surgical ones. Hence the riot of optical and ophthalmic quackery in every State and town of the land. The *Posted Graduate* even contends that there are no pathologic results of malfunction of the eyes, that errors of refraction can be diagnosed by machinery, and, if we understand our contemptuary correctly, advocates nickel-in-the-slot machines for furnishing spectacles. A similar condition of mind exists in a shirt-making company in one of our large cities, which writes to a physician as follows:

Dear Doctor:

We have added an optical department to our jewelry in charge of Dr. —. —, the wellknown optician, whose work we are in a position to guarantee. We especially desire to get patients from you, and by sending them to us we will reciprocate by mailing you a check for 15% of their purchases. We guarantee our prices to be as low as any representative optical house in the city.

Thanking you in advance and trusting to hear from you, we remain,

Very respectfully yours,

THE PALACE SHIRT CO.

AMERICAN NEWS AND NOTES.

GENERAL.

Army and Navy General Hospital, Fort Bayard.—A proposition is under consideration to enlarge this institution so as to provide accommodations for tuberculous patients from the Navy. The contemplated enlargement will provide for 100 patients, and it is estimated an expenditure of \$100,000 will be required.

Manila Free from Cholera.—It is reported that the United States quarantine officials have declared Manila free from cholera, thus ending the quarantine which has lasted nearly a year. The disease, however, is still epidemic in parts of the islands. Since the outbreak there have been 130,363 cases, with 82,955 deaths.

Inspection of Health Records.—Senator Gallinger has introduced a bill in the United States Senate providing for the inspection of records of the health office. According to its provisions the records of births and deaths in the health office shall be open to inspection by any person who in his own right or in the right of some other person in whose interest he may act, has a substantial interest in some matter contained or reasonably believed to be contained in such records.

Hospital Benefactions.—NEWPORT, R. I.: It is estimated that at least \$250,000 will be expended by Mrs. Vanderbilt on the ward which she is erecting at Newport Hospital in memory of her husband, instead of the \$27,000 which was originally planned. NORRISTOWN, PA.: Mrs. Alan Wood, Jr., of Philadelphia, has given \$5,000 to the Charity Hospital for a free memorial bed in memory of her husband, who died recently. BALTIMORE, MD.: Alexander Shaw, of this city, has bequeathed the sum of \$5,000 each to the Union Protestant Infirmary and the Home for the Aged of the Methodist Episcopal Church.

Plan for the McKinley Memorial Hospital Abandoned.—At a meeting of the managers of the McKinley Memorial Hospital for Contagious Diseases recently, it was decided to convert all property which has come into the hands of the committee into cash and abandon the project of a hospital for contagious diseases which was to receive pay patients only. The committee began its work several years ago, and has not met the financial success which it had hoped to achieve, and sufficient funds have not been forthcoming to carry out the plans of those who conceived the project. It is said that the property in the hands of the committee amounts to something over \$12,000, which when converted into cash will be deposited in a bank to be turned over to any committee which shall in the future have a similar project in view.

Diphtheria Among the Apaches.—Secretary Hitchcock has received a message from Governor Otero asking that troops be sent to enforce the quarantine laws of the Territory. Recently diphtheria became epidemic among the Apaches on the San Carlos Reservation. The health officers attempted to quarantine the Indians to prevent a general spread of the disease. They were unable to enforce the quarantine measures, and the Indians refused to remain on the reservation or otherwise respect the regulations prescribed in the quarantine; hence, the Governor's request for troops. The Secretary has ordered an inspector to be sent to the Reservation and make an immediate investigation, and report by wire. This is the second time diphtheria has become epidemic among the Indians in New Mexico within 14 months, and such outbreak invariably brings trouble.

Concealment of Plague.—Information has reached the State Health Officer of Texas that the bubonic plague reached Mazatlan, Mexico, from San Francisco, and not, as at first reported, from China. Much as one would wish to deny the accuracy of this charge, so terribly humiliating to us as scientists and sanitarians, there is something more than a possibility that it is quite true. For many months now the plague has been claiming its victims in the slums of San Francisco, and the municipal authorities, instead of frankly admitting the existence of the disease there and taking the vigorous but not difficult measures necessary for its extirpation, have preferred to follow the bad old policy of concealment and to do what they could without creating a "scare" or interfering with business. This course has been denounced by various medical associations and by the Marine-Hospital Service, but without avail, and its results have been just what were to be expected. The infection has been like a fire smothered, not extinguished. The deaths have been few, but they have been constant, and the city has been a danger center of exactly the kind that Havana used to be and that Vera Cruz is now. It may well be that Mazatlan owes its epidemic to the criminal folly of San Francisco, and the fact that this may be so very considerably weakens our right to be severe in teaching responsibility in such matters to our southern neighbors.—[*New York Times*.]

EASTERN STATES.

Scarlet Fever Closes Mount St. Vincent School.—The Academy of Mount St. Vincent at Riverdale-on-Hudson, one of the most popular Catholic institutions in this country for the education of girls, is now closed on account of an outbreak of scarlet fever. All but 40 of the girls attending the school were sent home. The Academy has about 200 pupils and nearly 40 teachers.

NEW YORK.

Mortality in New York.—The annual bulletin of the New York State Department of Health, which has just been issued, states that 124,160 persons died in the State during the year, making a death-rate of 17 per 1,000. This is about the average of the five preceding years, but is about 5,000 less than the mortality of 1901. Smallpox existed in the early months throughout the Adirondack region. During the year this disease has appeared in 135 municipalities throughout the State. It caused the same mortality as in 1901. There were 8,000 deaths from pneumonia, 5,500 from Bright's disease, and 4,000 from influenza.

Physician Vaccinators Dismissed.—Four physicians have been dismissed from their positions of city vaccinators by the commissioner of the Health Department of New York City for making false reports of their work. These vaccinators are required to make weekly statements to the Department of Health, giving the names and addresses of persons whom they have vaccinated. In order to check the reports of these vaccinators, inspectors are occasionally sent over the same territory to verify them, and by this means the commissioner has been able to detect those sending in false reports.

Shall the Whipping-post be Revived?—From an exchange we quote the following: "The merits of the whipping-post for wife beaters are once more under discussion, and the interesting statement is made that President Roosevelt, while in the Legislature several years ago, made a strenuous effort to provide this method of dealing with cruel husbands. After he had collected authenticated records showing the astonishing prevalence of this cowardly practice, he proposed a bill providing for the revival of the whipping-post 'for wife beaters only.' Nevertheless, the measure was defeated, the argument being that the revival of such punishment would be a return to barbarous methods. Present advocates of a whipping-post here claim that the results from that institution in Delaware have been excellent and wholesome."

Typhoid Epidemic in Ithaca.—The typhoid epidemic is said to be spreading with marked rapidity in the city of Ithaca. Forty new cases have been reported by the Health Board physicians in one day. The total number of cases now in the city is said to be 350. The City Hospital and Cornell Infirmary are filled with patients, and even churches are being utilized for hospitals to accommodate the increased number of patients. Dr. Curtis, of the State Board of Health, agrees with the City Board of Health that the source of the fever is in the water-supply, which is taken from a nearby creek. This source of contagion has only been recognized within the last few days, and now the health authorities advise all persons using the water to boil the same, and pure water is being brought from wells and springs of the surrounding country.

Bill to Abolish Coroners.—A special dispatch to the *New York Times* states that a bill has been introduced into the Legislature abolishing the office of coroner in the counties in New York City, the bill to take effect in September, 1903. It is proposed to substitute for the coroners, medical examiners, of which Manhattan will have 6, Brooklyn 4, Queens 2, the Bronx 2, and Richmond 1. These officers would be appointed by the Board of Health for a term of five years at a salary of \$3,500 a year. It is provided that all matters now subject to investigation by the coroners shall be first submitted to the Board of Health. The police powers now invested in the coroners would be vested in the district attorney, who would act in conjunction with the medical examiners in the investigation of all suspicious cases of death. The measure, which is said to be similar in all of its provisions to the present law of Massachusetts, is favored by the various New York medical associations.

The Craig Colony Prize Awarded.—The prize of \$200, annually given by Dr. Frederick Peterson for the best original essay on the etiology, pathology, and treatment of epilepsy, was awarded this year to Dr. Julius Donath, of Budapest, Hungary, for his paper on "The Presence of Cholin in Epilepsy and Its Significance in the Production of the Convulsive Attack." The award was made by a committee of the New York Neurological Society, consisting of Dr. Pearce Bailey, Dr. C. A. Herter, and Dr. George W. Jacoby, and the essay will be published as soon as possible. Dr. Peterson again offers a prize of like amount for the same purpose and under the same conditions, viz.: First, that the paper must show original research work. Second, that the subject matter of the essay shall not have been before published. Third, that all manuscripts submitted shall be in English and shall be sent Dr. Peterson, at 4 West Fiftieth street, New York City, before September 30, 1903, the successful manuscript becoming the exclusive property of the Craig Colony.

Fourth, each essay submitted must be accompanied by a sealed envelope containing the name and address of the author and bearing on the outside a motto or device, which is also to be inscribed upon the essay.

PHILADELPHIA, PENNSYLVANIA, ETC.

Smallpox in Pennsylvania.—During January there were reported 940 cases of the disease with 55 deaths, as against 506 cases with 36 deaths in December. A large proportion of the cases occurred west of the Alleghenies. Philadelphia, however, had 129 cases and 9 deaths.

Typhoid Fever in Philadelphia.—During the current week there were reported to the Health Department 329 new cases of typhoid fever with 23 deaths, making the total 1,632 cases and 84 deaths since January 1. The Board of Health has again issued a proclamation ordering all water boiled before it is used.

The Henry Phipps Institute Dispensary for the treatment of tuberculous was opened February 10 and 29 persons applied for treatment. The Institute will be open every morning, except Sunday, from 11 to 12 o'clock. Clinics will be held on Monday and Thursday by Dr. Irwin; Tuesday and Friday, by Dr. Walsh; and Wednesday and Saturday, by Dr. Hatfield. About 150 applications for treatment have been received, 50 of these being for beds in the Institute.

Free Medical Course Offered to Railroad Men.—The Jefferson Medical College and Hospital, of Philadelphia, through the president, Mr. Wm. Potter, has offered to the various steam railroads running into Philadelphia a free course of lectures on "first aid to the injured." All the employees of such railroads as desire may attend these lectures. The presidents and managers of the various railroads have replied, heartily thanking Mr. Potter for his liberal offer in behalf of the College and Hospital.

To Prohibit the Free Sale of Opium.—The City Council of Wilmington, Del., has passed an ordinance requiring that cocaine and opium shall be sold within the city's limits only on a doctor's prescription, except the sale be from wholesalers to retailers. The object is to break up if possible the practice of using these drugs by young men and boys in that city. It is claimed that this practice is steadily increasing and that one small drug store in an out-of-the-way place is selling 16 times as much as one of the large stores on a prominent street.

License to Practise.—A bill has been introduced into the Pennsylvania Legislature which it is asserted is designed to check osteopathy and eddyte teaching. The bill does not apply to nurses practising their profession, and it would so amend the law for 1893 for licensing and examining practitioners of medicine and surgery as to punish a person for "entering or continuing in the profession or occupation of treating disease or injury by the use of medicine or any other means or agency," either for or without pay or valuable consideration, unless licensed under the specified act. The penalty is any sum between \$200 and \$500, and imprisonment for from 30 days to 6 months.

"Sure Cures" and Tuberculosis.—The Committee for the Prevention of Tuberculosis of the Charity Organization Society recognizing the wrong which is done to patients suffering from tuberculosis by those advertising sure cures and nostrums galore, has made a public statement which says: "There is no specific medicine for this disease known, and the so-called cures and specifics and special methods of treatment widely advertised in the daily papers are, in the opinion of the committee, without special value, and do not at all justify the extravagant claims made for them. It is the unanimous opinion of the members of this committee that there exists no specific medicine for the treatment of pulmonary tuberculosis, and that no cure can be expected from any kind of medicine or method, except the regularly accepted treatment which relies mainly upon pure air and nourishing food."

Crusade Against Tuberculosis.—Two bills which will be introduced into the Pennsylvania Legislature are of interest as bearing on the fight against tuberculosis which it is hoped will be inaugurated in Pennsylvania with the assistance of the State government. The first bill asks for \$300,000, to increase the capacity of the Free Hospital for Consumptives, at White Haven, by 200 beds, to establish 100 beds for advanced cases at a location between Philadelphia and White Haven and five dispensaries for outdoor treatment of tuberculous patients in Philadelphia and other large cities in the State. The second bill, which will be introduced later by the Pennsylvania Society for the Prevention of Tuberculosis, petitions the Legislature for \$500,000 for building sanatoriums in various sections of the State, beginning with two institutions in the State forestry preserves, one in the Pocono region, in Lackawanna, and the other in Franklin county, near Palo Alto region. Each structure will have a capacity for from 200 to 500 persons. The sites are to be selected by a commission of three, appointed by the Governor.

SOUTHERN STATES.

Cigaret Prohibition.—The House of Representatives of Alabama has passed a bill by a vote of 61 to 35 to prohibit the sale or the giving away of cigarettes and cigaret papers in the State of Alabama. It leaves the smoker the alternative of having them shipped from abroad or doing without them, and even when he gets them he is prohibited from giving them away. Strong effort will be made to have the Senate likewise pass the bill.

To Suppress Plague.—A bill has been introduced in the House of Representatives by Congressman Slayden, of Texas, asking for an appropriation of \$50,000 to be used in suppressing bubonic plague in Mexico, and to prevent its dissemination into the United States. The bill authorizes and asks the President to send a commission of three medical officers of the U. S. Army and Navy to investigate and report conditions there found with reference to the plague.

The Virginia Conference of Charities and Corrections held its third annual meeting in Richmond, Va., February 10, 11, 12. An interesting program was rendered. The purposes of the conference are to educate the public mind to a proper conception of the needs of the indigent, defective and delinquent classes, to encourage a humane and philanthropic spirit; to create and foster a deeper and more general interest in charity and reformatory work; to procure data regarding the condition of the unfortunate classes, and to impress upon the people the advantages of organization in charitable and correctional efforts.

Sanitary Regulations.—At a recent meeting of the Washington Board of Trade a resolution was adopted authorizing its committees on public health to cooperate with the Board of Education of the District of Columbia in the matter of improving the sanitary conditions of the schools and the spreading of information concerning the various contagious diseases. The board recommends, that Congress provide for the medical inspection of schools in the District of Columbia and appropriate \$5,500 for such purpose. It recommends the establishment in the District of Columbia of proper hospital accommodations for persons suffering from tuberculosis. It asks the Board of Health to use its best efforts to obtain the enactment of a law prohibiting the spitting upon the sidewalks in the District of Columbia. It asks the committee on appropriations in the Senate to include in the amount necessary for expense in the District of Columbia \$35,000 for the collection and disposal of ashes and other refuse from hospitals, apartment houses, restaurants, etc., and also \$20,000 to provide for collecting a like refuse twice a week during the winter months from private residences instead of once a week as heretofore.

WESTERN STATES.

"Northwest Medicine."—The first number of this journal, which is edited by Clarence A. Smith, A.M., M.D., of Seattle, Wash., was published January, 1903. The publication, which is designed to assist in the improvement and strengthening of the profession in the Northwest, will be published monthly by the Washington Library Association. The subscription price is \$2.50 yearly; single copies, 25 cents.

Deaths From Pneumonia.—The Chicago Bulletin of the Health Department for the week ended January 24 states that for 12 successive weeks the deaths from pneumonia have largely outnumbered those from tuberculosis. During this period there were 630 cases of tuberculosis and 1,089 cases of pneumonia. These two causes account for more than one-quarter (26.12%) of all deaths during the three months, and of these there were 42% more from pneumonia than from tuberculosis.

Chicago School Board Bars Tuberculous Teachers.—A public school teacher of Chicago has been barred from her school room by the board of education on the recommendation of the city superintendent because it is believed that she has advanced pulmonary tuberculosis. The teacher is a Christian Scientist and asserts that she has no disease, though she is being treated by a Christian Science healer. Medical members of the board of trustees have been appointed a committee to draw up appropriate resolutions to be adopted by the board requiring all teachers suspected to be suffering from tuberculosis or other infectious diseases to submit to medical examinations by the board's physicians before continuing their school work.

The Blind Ask Aid From State.—Blind persons in the State of Illinois will ask that a bill be introduced into the Legislature which will grant to each afflicted person who is not a charge of a charitable institution and who has resided in the State for five years the sum of \$150 annually. A circular has been sent out to all senators and representatives of those interested asking that the bill become a law. The plea is made that while Illinois maintains an institution for the blind, no provision is made for them after they leave the school, that they are thrown upon their own resources without a chance to profit by what they have learned. Those unable to seek employment are forced to rely upon the almshouse, their friends, or public charity. It is hoped the bill will pass.

FOREIGN NEWS AND NOTES

GENERAL.

Plague is reported to be increasing in Tokio, Japan. It is stated that the germs were imported in cotton from Bombay. Dr. Yokota, the quarantine officer is among those who have succumbed to the disease.

Sanitation as Practised by the Japanese.—By the treaty of Shimonoseki in 1895 the eastern extremity of the great Malayo-Chinese continent, together with 3,000,000 of population, was acquired by Japan. The islands and people were in a deplorable condition. The *Medical Press and Circular* gives the following account of the work accomplished by the Japanese in placing this territory in a sanitary condition: "Malaria and dengue were endemic, dysentery was common and in many of the cities continued fevers were ever present. Under Japanese rule the use of opium was prohibited, except as a medicinal agent prescribed by a physician. The city slums were pulled down, the narrow streets widened, every house was after a given date to be unoccupied until its sanitary arrangements were approved of by the sanitary authorities. A very excellent drainage system was made compulsory in every city, artesian wells were sunk for drinking water, and the roadways kept in good repair. In the seven years of Japanese rule mosquitoes have become almost unknown, dysentery of the acute form has disappeared from the latest list of diseases; continued fever is the exception in the cities of the island. But this is not all—railways are being constructed, so as to form a network over the country; telegraphic communication connects the island with China on the one hand and Honshin on the other; and, lastly, free schools are established all over the country, and compulsory education is strictly enforced. In the schools every child is taught the rudiments of sanitary science. The whole rising population are indoctrinated with the belief that disease is largely due to want of cleanliness in the homes and persons of those attacked. The nearest approach to this thoroughness in enforcing sanitary laws occurred under the able administration of General Woods, United States Army, when he was placed in charge of Cuba after the Spanish war of 1898. In both cases disease was driven out by application of sanitary laws.

GREAT BRITAIN.

For Cancer Research.—Mr. T. Sutton Timmis, of Liverpool, has given a donation of about \$50,000 for the purpose of instituting systematic investigations into the origin and cure of cancer. The investigations will be carried on at the Liverpool Royal Infirmary and the new laboratories of experimental medicine in the University College in Liverpool.

CONTINENTAL EUROPE.

'Gift to Hospitals.—The directors of the Savings Bank of Milan at a recent meeting decided that as their profits for the past year were larger than usual the sum of \$1,000,000 should be distributed to the hospitals of Lombardy. The money is to be used to introduce the latest discoveries of science and to provide for the comfort and wellbeing of patients.

To Provide for Free Physicians.—It is reported that a movement is on foot in Zurich, Switzerland, advocating the imposition of a tax on every inhabitant who is over 16 years of age, of 80 cents a year, the State to add 20 cents. With the \$118,000 thus obtained annually it is proposed to pay 40 physicians to take care of the entire population of the city.

OBITUARIES.

Herman Mynter, the eminent surgeon, died at Buffalo, N. Y., February 9. Dr. Mynter was born in Denmark, and was graduated from the University of Copenhagen in 1871. He made the United States the country of his choice, and since locating in Buffalo, a number of years ago, has been a frequent contributor to medical literature, and has achieved an enviable reputation as one of the foremost surgeons of the country. His name has recently been brought prominently before the people of this country as being one of the physicians who attended President McKinley after his assassination at the Buffalo Exposition.

Professor Max Saenger, the eminent gynecologist, at Prague, January 12, aged 50. He began his professional career in 1878, when he was appointed assistant to Credé. He was the author of a monograph on Cesarean Section in the Treatment of Uterine Fibromata, and of about 150 publications on tumors, plastic operations, tubal pregnancy, laparotomy, retroversion and retroflexions of the uterus, etc. He was a pioneer of vaginal hysterectomy in Germany—an operation which he performed for the first time at Leipzig in 1881—and he was a strong advocate of antiseptic and aseptic methods in gynecologic surgery. In 1899 he accepted an invitation to succeed Roasthorn in the chair of gynecology in the University of Prague.

J. Frank Valentine, in Richmond Hill, Queens Borough, N. Y., February 5, aged 46. For many years he was visiting surgeon at St. Catharine's Hospital, Brooklyn. He also served as surgeon of the old Thirty-second Regiment, and for several years was coroner's physician in Brooklyn. He became chief surgeon of the Long Island Railroad in 1890, and also acted as visiting surgeon at St. John's Hospital, Long Island City, and as consulting surgeon to the Nassau Hospital, at Mineola, L. I. He was a member of the Queens-Nassau Medical Society, and an ex-president of the New York State Association of Railway Surgeons.

Eugene Foster, of Augusta, Ga., January 23, aged 53. He was graduated from the Medical College of Augusta, Ga., in 1872, and was professor of practice of medicine and sanitary science and dean of the faculty of the medical department of the University of Georgia. He was affiliated with many local medical organizations, and was a member of the American Medical Association, American Public Health Association, and the American Surgical Association. He was an acknowledged authority on municipal sanitation, and his contributions to medical literature are numerous and valuable.

John Hornans, of Boston, Mass., February 6, aged 67. He was graduated from the Harvard Medical School in 1862. He served as surgeon during the Civil war. He was also surgeon at the Boston Dispensary, the Children's Hospital and the Carney Hospital, and was also a visiting surgeon of the Massachusetts General Hospital, with which he has been especially identified, and was a lecturer in Harvard University. For many years his name had been especially associated with abdominal surgery. He was a contributor of much valuable material to medical journals.

Harrison A. Lemen, a retired physician, of Denver, Col., January 21, aged 62. He was graduated from the St. Louis Medical College in 1861. He was at one time president of the Denver Medical Society and of the Colorado State Medical Society, and was also emeritus professor of the principles and practice of medicine in the medical department of the University of Denver.

Thomas N. DeBowes, of Brooklyn, N. Y., February 6 aged 69. He was graduated from the New York University in 1858. He was also a graduate of Trinity College, Dublin, Ireland, and of Yale University. He was one of the founders of the St. Mary's Hospital in Brooklyn. During the Civil war he was surgeon in a Connecticut regiment.

Henry Tomboeken, in Terre Haute, Ind., February 7, aged 65. He was graduated from the Rush Medical College in 1866, and was one of the two members of the first graduating class of the Chicago College of Pharmacy. He practised his profession in Chicago for over 30 years, and retired about five years ago.

Eugene Davis, in Indianapolis, Ind., January 19, aged 30. He was graduated from the Medical College of Indiana, Indianapolis, in 1893. He was professor of ophthalmology at the Medical College of Indiana, and a member of the American Medical Association.

Patrick H. Conley, of Chicago, Ill., February 3, aged 43. He was graduated from the Rush Medical College, Chicago, in 1887. He was surgeon to the West Side Hospital, and professor of obstetrics and diseases of children at the Chicago Clinical School.

Caleb Hornor, of Philadelphia, February 7, aged 74. He was graduated from the Jefferson Medical College in 1849. He organized many hospitals and dispensaries throughout the Southern States and the District of Columbia during the Civil war.

Cyrus Allen, of Avon, N. Y., January 11, aged 65. He was graduated from the New York Homeopathic College and Hospital in 1864, and from the Berkshire Medical College, Pittsfield, Mass., in 1865.

Charles B. Leavitt, of Trenton, N. J., February 9. He was graduated from the medical department of the University of Pennsylvania in 1882. For two terms he held the office of county physician.

Adam T. Van Vranken, of Watervliet, N. Y., January 19, aged 55. He was graduated from the Albany Medical College in 1873, and was a member of the New York State Medical Association.

R. Otway Owen, of Kansas City, Mo., at San Bernardino, Cal., January 19, aged 38. He was graduated from the Medical College of Virginia, Richmond in 1889.

Samuel Gray, of Laurel, Md., January 30, aged 72. He was graduated from the University of Maryland School of Medicine, Baltimore, in 1858.

E. M. Chapin, of Washington, D. C., February 9, aged 82. He was a graduate of the medical department of the Columbian University.

C. E. Watson, of Conneaut, Ohio, January 18, aged 27. He was graduated from the Cleveland Homeopathic Medical College in 1898.

Earle E. Woolworth, of Brooklyn, N. Y., February 5, aged 30. He was graduated from the New York University in 1897.

Charles W. Virmont, of Chicago, Ill., February 1, aged 37. He was graduated from the University of Louisville in 1889.

John J. Manlon, in Charlotte, Ia., January 24. He was graduated from the Rush Medical College, Chicago, in 1895.

Samuel D. Sanders, at Georgetown, Tex., January 22, aged 80.

J. S. Crom, of Philadelphia, February 5, aged 75.

George Harris, of Bridgeton, N. J., February 10.

SOCIETY REPORTS

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninety-seventh Annual Meeting, Held in Albany,
January 27, 28 and 29, 1903.

[Specially Reported for *American Medicine*.]

FIRST DAY.

Officers Elected.—President, Dr. A. T. Bristow, Brooklyn; vice-president, Dr. Edward B. Angell, Rochester; secretary, Dr. F. C. Curtis, Albany; treasurer, Dr. O. D. Bzll, Albany. It was voted to hold a semiannual meeting in New York City next October.

President's Inaugural Address.—HENRY B. HOPKINS (Buffalo, N. Y.) speaking of the past history of the society, declared that its action in repealing the Code of Ethics was one of the most important steps that had been taken in many years, for it had brought the society into closer touch with the State government and had been indirectly the means of giving to the State its beneficent laws regulating the practice of medicine. This same action had been the means of securing the enactment of a law, by which the society was enabled to regulate its membership and increase the number of its delegates five fold. Commenting upon the movement just inaugurated, by which it was hoped that the registration of trained nurses under rules prescribed by the Board of Regents would be secured, Dr. Hopkins said that this action seemed to him wise and timely, and he hoped it would receive the support of this society. The hope was expressed that this country would imitate Great Britain in the matter of giving special instruction in sanitary science to those who assayed to be health officers, and that the new degree, D.P.H., of Doctor of Public Health, would be conferred on such as were properly qualified. With regard to the question of the hour in this State—that of securing unity of the medical profession here—the speaker expressed the hope that this would be attained before the society should reach its approaching centennial anniversary, but added that, although the rights of all should be given due consideration, the State society could never agree to sacrifice those principles for which it had so long contended.

Report of Committee on Hygiene.—JOHN L. HEFFRON (Syracuse), on behalf of this committee, stated that there had not been so many victims of typhoid in the past year as in previous ones, and that attention had been directed to other sources of typhoid infection than water. Smallpox had gradually increased during the past 10 years, and in the past year had been more prevalent than ever. If the people had not yet learned the value of vaccination it was certain that they could not be convinced on this point by any amount of argument. As scarlet fever had assumed a severe type, more than usual precautions should be taken by the health authorities to secure efficient and prolonged quarantine of these cases. With regard to tuberculosis, the report stated that this disease still continued to be the most prevalent of the preventable communicable diseases. That it was possible to effectually control it by appropriate measures was shown by the fact, that in recent years the deathrate from tuberculosis had fallen 45% in Great Britain, and in New York City there had been a reduction of nearly 40%. Moreover Dr. Bowditch had pointed out that at the sanatorium at Rutland, Mass., the disease had been arrested in 79% of those received in the first stage. Popular literature bearing on these points should be disseminated among the masses, and in this work it was probable that much help could be derived from enlisting the aid of the industrial insurance companies. The society should endeavor to maintain intact the present tenement-house laws, and should cooperate with the health authorities in securing the registration of every case of tuberculosis. This report was reinforced, in the matter of the tenement-house laws, by a resolution, introduced by Dr. George B. Fowler, of New York, and adopted by the society, which urged the Legislature not to permit any changes to be made in the present tenement-house laws which would lead to a decrease in the light and air available in such houses, or which would be a step backward in regard to their sanitary condition.

Report of Committee on Legislation.—ARTHUR G. ROOT (Albany) read this report, which stated that of the 78 medical bills presented to the last Legislature, 19 had become laws and 44 had died in committee. The others had either failed to receive the Governor's signature or had been vetoed by mayors of cities. A peculiarly vicious bill was that designed to relieve hospitals of responsibility for the acts of their officers and employes.

Report of State Board of Medical Examiners.—WILLIAM WARREN POTTER (Buffalo) presented a review stating that of the 7,034 candidates appearing since the establishment of the board, 5,528 or 78.5% were successful. Last year 685 applied for a license to practise medicine, and to 558 a license was issued. The yearly average for this board was 586; that for the homeopathic and eclectic boards, 46 and 16 respectively.

Report of Committee on Unification of the Profession.—HENRY L. ELSNER (Syracuse), the chairman of the

joint committee of conference, presented this report. The correspondence that had taken place between the two State committees was submitted, together with a detailed account of the labors of the committee. As might have been expected, the rock upon which they split was the Code of Ethics of the American Medical Association, but another by no means unimportant obstacle had been the method by which reorganization was to be effected. It was freely conceded that both committees were sincere in their desire for unity and that both State organizations were now powerful bodies, and the inference was plain that both were jealous of the rights already obtained. This was particularly so with the State society, for there was interwoven a very natural sentiment in favor of an unbroken existence for their society which had now nearly completed its first century. Although the State society's committee had agreed at one time to the proposition of the State Association that the latter should give up its name and charter and that both should take the title of the State society and apply jointly to the Legislature for a new charter, embodying the present organization of the State Association, the committee changed its opinion after learning from legal counsel that by applying for a new charter the old State society would end, and that moreover, such a step was not necessary. According to this legal opinion the State society possessed the power to amend its by-laws without applying to the Legislature so that members of the New York State Medical Association could be admitted to its membership. Various plans had been proposed for effecting the reorganization. The one which would probably come up for consideration at the meeting of the American Medical Association in New Orleans next June was, that by which members of county societies paid a single fee to the State treasurer and thereby became members of both the State and national bodies. With regard to the Code of Ethics, the committee reported that it had been informed by Dr. Billings, the president of the national organization, that this code was still in existence, and hence the committee was averse to recommending any action by the Medical Society of the State of New York until the American Medical Association should make it possible for that society to subscribe to its constitution and by-laws consistently and without sacrifice of principle. The committee was continued, with instructions to continue its labors.

Arguments for the Existence of a Separate Cortical Center for Writing.—HERMAN C. GORDINIER (Troy) reviewed the few cases already reported, including one case of his own, of glioma at the base of the second left frontal convolution. He insisted that there was now available sufficient pathologic and clinical data to prove that destruction of Broca's center did not necessarily cause agraphia.

Medical School Inspection in the City of New York.—HENRIETTA P. JOHNSON (New York) presented not only a brief review of the comparatively new work of medical inspection of the schools of the city, but described in an interesting manner many of the peculiar racial and sociologic problems that were encountered in the prosecution of this work in a cosmopolitan city like New York. The system of medical inspection of the schools inaugurated by the Board of Health originally comprised a division of the city into 35 districts and the appointment of 150 inspectors. The examinations made the first year amounted to 108,638, resulting in the exclusion of 6,829 children from the schools. Last fall a new system went into operation. This called for daily morning observations as before, but in addition a weekly examination of every pupil.

The Care of the Insane.—CHARLES G. WAGNER (Binghamton) contrasted the old, prison-like asylums, with their crude and often cruel modes of so-called treatment, with the modern hospital for the insane, where the keynote was the greatest personal liberty consistent with safety and the necessity for cheerful surroundings and suitable occupation. During the acute stage of mental disease, quiet was secured and proper nutrition maintained largely through the employment of skillful nurses.

Differential Diagnosis of the Familiar Forms of Spinal Disease.—FLOYD S. CREGO (Buffalo) said that, generally speaking, hemiplegias were due to brain disease. A very common diagnostic error was the confounding of functional and organic disease. This often resulted from the fact that the functional or hysteric element was so prominent as to obscure the organic basis. In the common form of acute myelitis, transverse softening in the mid-dorsal region of the cord, there was complete anesthesia below the level of the lesion, with gradual muscular wasting and exaggeration of the reflexes. In lumbar myelitis there was loss of the reflexes instead of exaggeration. In that form of acute ascending paralysis, known as Landry's disease, there was gradual loss of power, whereas in myelitis this loss of power was rapid, and was associated with a loss of sensation. Autopsies on such cases had yielded uniformly negative results.

Erythrophloium: A Clinical Study.—REYNOLD W. WILCOX (New York) described some of the properties of this drug. Its action is similar to that of digitalis, but is more rapid. It was indicated in cases characterized by a rapid, but not extremely weak, heart action, associated with low tension.

Observations on American Climates and Localities in the Treatment of Pulmonary Tuberculosis.—JAMES K. CROOK (New York) expressed the belief that the climatic treatment of this disease had been hampered by the habit of physicians, of restricting themselves to the selection of two or

three regions, apparently ignoring the important fact that within the confines of the United States could be found typical examples of all the best forms of climate possessed by the Old World. Dr. Crook then briefly outlined some of the available climatic areas, calling attention to the fact that many of them, though hardly utilized in the past, were just as good as the more widely known of the old health resorts, and moreover, that some of them were quite accessible from New York. As an instance, special mention was made of the remarkably favorable climatic conditions now known to exist on Long Island, and of certain localities in Westchester county, only a few miles beyond the limits of New York City. The author said he was a firm believer in the very great importance of appropriate climatic treatment, but it should be a first, instead of, as was too often the case, a last resort. If resorted to early and with due discrimination, the results were most salutary; if employed late in the disease, it might be confidently expected that the disease would continue to progress in 99% of the cases. While thus earnestly advocating the climatic treatment, he was far from being unmindful of the benefit to be derived from good food and proper hygiene, and it was only when these were combined and the patient was under skillful medical supervision that the best results could be expected. As it was not possible to find proper air in large cities, it became necessary to resort to properly equipped sanatoriums in the rural districts, and he firmly believed that philanthropists who would give of their abundance for the establishment of such sanatoriums were more worthy of esteem and lasting remembrance than those who embellished costly churches, built libraries, or founded universities.

Retinoscopy.—D. H. WIESNER (New York) presented this paper, because, as he said, the method was simple and well adapted to the needs of the general practitioner. The instrument employed for retinoscopy consists of a plane mirror of glass, about 1½ inches in diameter, having a central aperture and a long handle. With a suitable light the background of the eye is illuminated, and then by observing whether or not the movement of this spot of light is with or opposite to the motion of the mirror in the vertical and horizontal meridians, a very good idea is obtained of the refractive condition of the eye. Thus, when the illumination moves with the rotation of the mirror in both meridians the eye is hyperopic. When the movement is opposite to that of the mirror, it denotes myopia.

The Physician and the Ophthalmoscope.—FRANCIS VALK (New York) was of the opinion that the rarity with which the ophthalmoscope was used in general practice was to be explained by the fact, that the practitioner who essays to use this instrument became discouraged at the outset by certain difficulties which, with a little instruction, might be readily surmounted. To this end the following method of procedure was advised: The source of illumination is arranged so as to allow of illumination of the background of the eye. If the orange-red reflex ordinarily observed is not visible under these circumstances, a +6 glass should be brought before the aperture in the mirror, as this would enable the observer to secure a good view if no opacity were present. In order to make it easy for the observer to adjust his eye to the rays of light reflected from the eye under examination, it would be found a very great help to make use of the concave lenses, or those marked in red. These should be brought successively before the aperture until the best result was obtained. Sometimes it was necessary to dilate the pupil, and then by the use of a little cocaine or homatropin this could be done without special inconvenience to the patient.

Incomplete Transverse Congenital Occlusion of the Vagina.—SAMUEL M. BRICKNER (New York) presented in abstract a report of four cases of this kind. He was of the opinion, from a study of this subject, that transverse vaginal septums were due to embryonal folds, and that the condition was really an example of a reversion to a former type.

Some Scientific and Practical Details Regarding Vaccine and Vaccination.—PETER H. BRYCE (secretary of the Provincial Board of Health of Ontario) at the outset made the statement that vaccination conferred complete protection against smallpox in all persons for ten years, and in many individuals for double that period. He pointed out that the investigations carried on by certain French scientists pointed to the bacterial nature of vaccinia, though the specific micro-organism had not been isolated. The continued opposition to vaccination, even at this late day, he endeavored to explain on the ground that it was compulsory, and expressed the opinion that the same fate would have been meted out to the antitoxin treatment of diphtheria had it, too, been made obligatory on the people. Nevertheless, he was a firm believer in compulsory vaccination, and gave the following cogent reasons for the faith that was in him: (1) The theory of immunity conferred by vaccination is based on indisputable scientific evidence; (2) the infectiveness of smallpox had been shown repeatedly to be uncontrollable by the best sanitary organization, though yielding readily to vaccination; (3) vaccination can afford complete protection against smallpox after exposure to that disease, even if done so late as the fourth day, and can so reduce its severity as to avert a fatal issue when vaccination is done concurrently with exposure. With regard to vaccine and vaccination he said that the effectiveness of glycerinated lymph had been demonstrated by a record of 126,000 vaccinations with 98% of successful vaccinations. There was evidence to show that

multiple insertions afforded better protection than a single scarification.

Treatment of Purulent Conjunctivitis.—EDGAR S. THOMSON (New York) while expressing the opinion that the only sound guide to the treatment was a bacteriologic examination of the discharge, advocated prompt treatment by energetic measures when there was reason to suspect a virulent infection, such as from the gonococcus. Under such conditions there was no better application than a 2% solution of silver nitrate applied to the upper culdesac, as well as to the other parts of the conjunctiva. For the abortive treatment a 3% or 4% solution should be used, following this, strong application by sodium chlorid to neutralize the effect. In the treatment of ophthalmia neonatorum a 6% solution of protargol was recommended, as it was efficient and nonirritating, but for gonorrhoeal ophthalmia it was decidedly inferior to silver nitrate. Of course, in addition to the use of the applications already mentioned, the eye should be irrigated with boric acid solution sufficiently often to keep it free from the discharge.

Transportation and the Ophthalmic Referee.—JUSTIN L. BARNES (New York) considered the means employed by our transportation companies to detect color-blindness among their employes. He had ascertained that about one-third of the railway companies relied upon laymen for these examinations, whereas the public safety demanded that they should at least have an ophthalmic referee for the doubtful cases. The eyes should be tested singly, otherwise color-blindness in one eye might escape detection, and it was conceivable that an engineer might at any time have the good temporarily disabled while at his work. Some color-blind persons were able to distinguish colors quite well by differences in the degree of illumination, but such a method could not be relied on under the ever changing atmospheric conditions present in actual practice.

Discussion.—PERCY FRIDENBERG (New York) said that while this question was of much practical importance, there were two sides to it. From the standpoint of the railroad men it was obviously unfair to subject them to tests in matching colors and picking out slight variations in shades when in their work they were only called upon to decide between two or three widely different colors. Persons having defective color sense at the macula were able, by moving the eye, to distinguish correctly the colored wools, whereas with a single point of illumination the result was very different.

Eye-strain and Headache.—LUCIEN HOWE (Buffalo) presented an explanation of how eye-strain caused headache. By the term "eye-strain" he meant the pain experienced by some persons when reading, sewing or doing other near work. This pain was referred to the eye itself, the forehead or some part of the head, or possibly even to the shoulders. The proposition which the author sought to prove was, that this pain was due directly to some muscular contraction. According to the theory of Helmholtz, the ligament of Zinn was tense when the eye was at rest, and relaxed more and more in proportion to the degree of accommodation. A better explanation had been offered recently by Professor Tscherning. This observer contends that the act of accommodation is not altogether passive, as Helmholtz believed, and that on looking at a near point the ciliary muscle is contracted. This draws the edges of the lens bends the central portion of the anterior surface further forward, and makes the lens more convex. On this theory that near vision was entirely an active muscular effort it was not difficult to explain the pain in the eyes, which constituted the first feature of ocular headache. Moreover, a certain amount of accommodation always meant a certain degree of convergence of the visual axes, which implied tension of the internal recti and also, to a certain extent, of the superior and inferior recti. The accessory muscles of the forehead and head were called into action when any special effort was required to maintain accommodation, and it was the tension of these accessory muscles which gave rise to the headache. The occipitofrontalis was an important muscle in this respect, and both the anterior and posterior portions were subjected to strain in connection with a special effort to maintain accommodation. This explained the frontal and occipital headache.

Hydrops Tubae.—HENRY D. INGRAHAM (Buffalo) reported two cases.

Sterilized Milk, Pasteurized Milk, or Clean Milk.—C. W. M. BROWN (Elmira) showed the advantages of pasteurization over sterilization, and the dangers arising from entrusting pasteurization to careless or ignorant persons, or of relying upon it in hot weather when there was not an ample supply of ice for the storage of the milk.

The Examination of Milk by the General Practitioner.—HENRY L. K. SHAW (Albany) exhibited and described the apparatus employed. He advised the use of Farrington's alkaline test tablets as a ready and reliable means of determining the acidity of milk. For the determination of the specific gravity of as small a sample of milk as half an ounce—a desideratum in the examination of breast milk—he made use of a small Quvenne lactometer, to which he had added a thermometer in order to facilitate the making of the corrections for temperature necessitated when the milk examined was not at 60° F. He preferred to obtain the percentage of fat by the well-known Babcock method, but to make the method more suitable for physicians he recommended a small hand centrifuge, manufactured by D. H. Burrall & Co., of Little Falls, which was so constructed that it could not only be used for bacteriologic and

urinary work, but could be used with the large regulation size bottles for making the fat test. By means of a convenient device known as Richmond's sliding milk scale, the corrected lactometer reading and the total solids could be read off without the use of mathematical formulas. The amount of proteids could be determined approximately by subtracting the percentages of fat, sugar and salts from the total solids.

Blood Examination in General Practice.—IRVING P. LYON (Buffalo) introduced the symposium on hematology by this paper, which showed by a number of illustrative cases how such examinations could be made of service in general practice.

The Eosinophiles: Their Etiology and Value in Diagnosis and Prognosis.—THOMAS R. BROWN (Baltimore) the author, was unable to be present. He pointed out the value of eosinophiles as a means of diagnosing trichinosis and of differentiating certain forms of leukemia, and stated that the presence of eosinophiles in a number of the acute infectious diseases was also occasionally of assistance to the clinician.

Degeneration of the Erythrocyte.—J. C. D'ACOSTA, JR. (Philadelphia). The paper will appear in a future issue of *American Medicine*.

The Iodin Reaction and Its Diagnostic Significance.—EDWIN ALLEN LOCKE (Boston, Mass.) exhibited some illustrative photomicrographs. The method of making the test was to make an ordinary blood smear on a cover glass, dry it in the air and then apply an excess of the iodine solution. The preparation could be examined immediately or after a long time, but the examination should be by daylight, using an oil immersion lens and strong light. The reaction was shown in several ways, viz.: (1) By the presence of brownish granules in the protoplasm; (2) by a diffuse coloration of the cells, and (3) by the presence outside of the cells of round or oval masses of a brown color. The intercellular reaction was never observed in health, and, in general, it might be said that the iodine reaction was associated with some form of toxemia. In doubtful cases the examination should not be put down as negative until at least 100 white cells had been counted.

SECOND DAY.

The Surgeon's Enemy, the Skin.—ROBERT H. M. DAWBARN (New York) considered as the three main topics, "chemical shaving," "mending rubber gloves," and "a method for excluding perspiration from the operative field." With regard to the first, he recommended as a substitute for the razor in certain hairy regions of the body the application for 10 minutes of a 25% aqueous solution of Merck's sodium sulfhydrate. This would remove the hair as if a razor had been used, and the hair would grow out again after this method just as after ordinary shaving. For mending rubber gloves he advised the use of several test-tubes, two flat-irons and a cautery set such as is employed in burnt leather decoration. When it was required to put in a new finger tip, the tip from the finger of an old rubber glove should be used as a cap. The edges of the rubber having been softened by the cautery, and a test tube inserted into the glove finger bottom up, to serve as a form, the repair is readily made, and the parts are held together by twine until firmly united, when they will stand sterilization by boiling. Flat surfaces are mended in a similar manner, using one flat-iron for laying the work upon and the other flat-iron as a weight to hold the mended parts together. To prevent perspiration in the operative field, the author recommended dusting this area, one hour before operation with a powder composed of lycopodium, talc or zinc stearate, with 20% alum, previously sterilized by heat. The powder should be allowed to remain on the skin until removed by the usual cleansing applications at the time of beginning the operation. Such an application would effectually prevent sweating in this area during the time necessary for the performance of any ordinary operation.

The Technic of Prostatectomy.—RAMON GUITÉRAS (New York) advised opening the membranous urethra, inserting the forefinger and separating the prostate from its capsule, meanwhile holding and controlling the prostate by means of an instrument that he had devised for this purpose. This resembles a urethral sound with a sharp double curve. Having removed the gland, artery forceps should be fastened on either side of the wound until the drainage tube had been inserted.

Periduodenal Abscess Secondary to Perforative Ulcer of the Duodenum.—WILLIAM SEAMAN BAINBRIDGE (New York) stated that he had found 26 cases of this kind on record, and in 22 cases death had occurred without the diagnosis having been made. One case of his own was reported together with the autopsy findings. There was usually a history of previous gastrointestinal disturbance, the onset was sudden and the chief symptoms were vomiting, pain, tenderness and resistance in the epigastrium and right hypochondrium.

Some Points Regarding the Treatment of the Functional Disorders of the Sexual Organs in the Male.—FREDERIC R. STURGIS (New York) said that while he did not pose as an apologist for masturbation, his experience had taught him that masturbation was a comparatively infrequent cause of loss of sexual power, and was no more debilitating than natural sexual intercourse indulged in to the same extent. A more important etiologic factor in the class of cases under consideration was "withdrawal" at the time of coition, and

another was excessive sexual indulgence. In perhaps 50% of the cases the cause was an uncured urethral stricture produced by gonorrhoea. A frequent cause of trouble was the presence of granulations in the urethra. Internal medication was only useful as an adjuvant in these cases; local medication was far more important, and the keynote of success was the use of sedatives. Stimulants should be avoided; in some instances, even coffee should be interdicted. The proper local use of silver nitrate produced an effect which was sedative rather than stimulating. Not much could be done for the relief of sterility in the male, for it was usually dependent upon some obstruction to the mixing of the spermatozoa with the semen, and the ejaculation of the usual quantity of semen was no proof that the person was not sterile, for the semen was largely made up of other secretions.

Discussion.—R. H. M. DAWBARN advocated circumcision as means of aiding those who are sexually weak by retarding the orgasm. The tying off of a few of the veins at the base of the penis would also increase the vigor of the erection. A. JACOBI (New York) also thought circumcision was useful, but chiefly because of the profound mental impression which this operation created, and the self-confidence thereby engendered.

In Memoriam: Rudolph Virchow.—CHARLES A. L. REED (Cincinnati, O.) delivered this address. He was followed by A. JACOBI, who spoke of Virchow's love for Americans.

President's Address: Progress, Unity, Liberty.—HENRY R. HOPKINS (Buffalo) said that unity in medicine was essential to satisfactory progress in that all-important department, State medicine, and naively added that medical unity was not made easier of attainment by dwelling upon the limitations and imperfections in the practice of professional brethren. An epoch-making event in the history of the profession had been the establishment of the system of State licenses, but unfortunately there yet remained that relic of the past, the three examining boards constituting a cumbersome legal machinery wholly unworthy of the twentieth century.

Plasmiodiophora Brassicæ.—HARVEY R. GAYLORD (Buffalo) presented a communication on this subject, embodying some preliminary studies of this organism.

Primary Carcinoma of the Vermiform Appendix.—ARTHUR W. ELTING (Albany) reported three cases which he had studied. He had succeeded in collecting 40 cases from the literature. The condition was probably more common than would appear from this record, for in several instances the carcinoma had been only accidentally discovered at autopsy, so that many cases were doubtless overlooked. The disease showed a tendency to develop early, but the symptomatology was exceedingly vague.

The Early Recognition and Symptoms of Arteriosclerosis.—DELANCEY ROCHESTER (Buffalo) presented this paper as an introduction to a symposium on arteriosclerosis. He classified the cases of arteriosclerosis into: (1) those dependent upon the strain incident to occupation; (2) those resulting from the introduction into the system of poisons from without, *e. g.*, syphilis, lead and alcohol, and (3) those resulting from the poisons generated within the body through faulty metabolism.

Arteriosclerosis and the Heart.—GLENTWORTH R. BUTLER (Brooklyn) divided these cases into two groups, depending upon whether or not the coronary arteries were sclerosed. In senile arteriosclerosis, he said, the heart was often not enlarged or the arterial tension increased. Cardiac hypertrophy in connection with arteriosclerosis was usually most marked in cases occurring in middle life. When dilation followed cardiac hypertrophy, the train of symptoms were hardly distinguishable from those observed in connection with ordinary organic heart disease. In advanced cases anginal attacks were common, but true angina pectoris was somewhat rare and was usually associated with sclerosis of the coronary arteries and of the myocardium.

Arteriosclerosis and the Kidney.—IRVING P. LYON (Buffalo) discussed, for the most part, those cases arising from syphilis, alcoholism, lead poisoning, and gout.

Arteriosclerosis and the Digestive System.—CHARLES G. STOCKTON (Buffalo) said that arteriosclerosis was indirectly a common cause of digestive disturbance, and the opinion was gaining ground that it was more often a direct cause than had formerly been believed. Among the direct effects were attacks of severe abdominal pain simulating gastralgia.

Arteriosclerosis and the Nervous System.—WILLIAM BROWNING (Brooklyn) described a very large and varied symptomatology dependent upon arteriosclerosis, but by no means distinctive.

Arteriosclerosis and Mental Disease.—ADOLF MEYER (New York) said that arteriosclerosis of the brain was apt to be associated with loss of memory of the immediate past, with transitory delirium and with mental confusion. Persons so affected were sometimes guilty of arson, theft, or of sexual misconduct. There was, however, no justification for speaking of arteriosclerotic insanity, and there was no special treatment for cases of mental disease in which one element was arteriosclerosis.

Pulsus Infrequens.—THOMAS E. SATTERTHWAIT (New York) considered this title more accurately descriptive than the more usual terms denoting infrequent pulse. Thus he objected to bradycardia on the ground that in some cases of infrequent pulse the heart was not slow, and indeed, might be quick. The infrequent pulse might occur at almost any period of life, but in

his experience it was more apt to be in middle life or after that period. By common acceptance a pulse below 60 was held to be infrequent. It was rare to meet with a pulse below 40, though most practitioners of long experience had seen instances of it. There were two principal varieties, the physiologic and the pathologic. A French writer had reported a case in which the pulse never exceeded 20. The infrequent pulse was five times more common in males than in the opposite sex. The pathologic variety was subdivided into the temporary and the chronic. They were chiefly due to poisoning by infections, lithemia, digestive disturbances or cerebral disease. The chronic variety was uncommon. The explanation of the infrequent pulse was unsatisfactory because we did not understand thoroughly the physiology of cardiac action, particularly the innervation of the heart. Because of the bearing on prognosis and treatment it was important to determine whether the infrequent pulse was physiologic or pathologic, and whether it was intermittent or deficient. The relation of these cases to mitral disease, especially mitral stenosis, as well as to arteriosclerosis, brain disorder, diabetes and chronic nephritis were commented upon and the danger of giving large doses of digitalis was pointed out. Milder cardiac remedies to the almost total exclusion of digitalis should be employed, and this treatment should be supplemented by hydrotherapy, massage, exercises and electricity.

Discussion.—J. J. WALSH (New York) reported a case, occurring in a theatrical dancer, in which, although the pulse was constantly at 30 or less, she experienced no inconvenience from it.

Some Points Pertaining to the Therapeutic Management of the Uremic State.—HEINRICH STERN (New York) said that diaphoresis was indicated under certain restriction, in every instance of acute uremia, and as early as possible. Its action was more lasting in cases of chronic parenchymatous nephritis. Venesection produced its best results in uremia following acute nephritis. In children from 100 cc. to 250cc., and in adults from 300 cc. to 500 cc. should be abstracted. The improvement resulting from the withdrawal of this comparatively small quantity of blood appeared to be due to the relief of vasoconstriction in the kidneys and central nervous system. The effect of hypodermoclysis and infusion was more transitory, but might prove useful in certain crises. Morphine was innocuous when given in small doses in the uremia of acute renal disease and chronic parenchymatous nephritis, but was not indicated, and was likely to do harm in the uremia of chronic interstitial nephritis.

Hepatic Ballotement.—A. L. BENEDICT (Buffalo) described under this title a method of bimanual palpation of the liver.

THIRD DAY.

Cancer of the Cervix Uteri Treated by the X-ray.—THOMAS S. SCULLY (Rome, N. Y.) said that he had had his interest awakened in this subject by the wonderful relief that he had been able to give an old woman suffering from advanced malignant disease, by three or four applications of the x-ray. Three cases were reported in which the results had been quite satisfactory from the use of an elongated x-ray tube which could be introduced into the vagina or rectum, and exposures of about 15 minutes on alternate days.

An Operation for Cicatricial Contractures of the Upper Extremities.—A. H. TRAYERS (Albany) reported a case of very extensive cicatricial contraction, in which a useless arm had had its function restored. The contractions were freely divided, and then repair was effected by a series of flap operations.

Recommendations to the Advisory Board of the Carnegie Institution.—Some of the eminent scientists of America have submitted recommendations to the Advisory Board of the Carnegie Institution in reference to certain subjects which they believe should be more thoroughly investigated. Professor Langley, of the Smithsonian Institution, advises the establishment of two laboratories, preferably close to the equator, at the greatest possible difference of altitude, yet within sight of each other where under like atmospheric and other conditions simultaneous observations with reference to the solar constant, the unit of heat exerted by the sun's rays on a given surface at a given time, concerning which there is much discrepancy, could be accurately determined by records. Dr. David Jordan, of Leland Stanford University, recommends a special expedition to study ichthyology in the Pacific Ocean, especially in the vicinity of Peru, Chili, Patagonia, China, Okotsk Sea, and some of the islands of the East Indies and Polynesia. Professor Ladd, of the Yale University, makes recommendations in the realm of psychology. He advocates a bureau of information not only of definite results but of partial results, and attempted investigations in the subject of psychology, with a view to keeping all scientists devoting themselves to this particular branch posted as to what others are doing and have done, thus preventing duplication. Dr. Whitman, professor of zoology in the University of Chicago, recommends a biologic farm as a means of studying heredity, variation, and evolution. Professor Johnson, of the University of Wisconsin, urges the establishment of a biologic experiment station for the study of evolution.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

ALBUMIN IN THE URINE: A PLEA FOR THE EMPLOYMENT OF MORE ACCURATE TESTS.

BY

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This article is written as a result of recent study, my aim being to present a brief review of this important subject.

In quantity the urine varies from 1,200 cc. to 1,800 cc. in each 24 hours, the amount depending on the blood pressure and the condition of the renal epithelium.

Polyuria may be due to any of the following conditions:

(1) Diabetes mellitus and diabetes insipidus; (2) all forms of contracted kidneys; (3) after acute infectious diseases, post-infectious polyuria is a favorable prognostic symptom, and when associated with bradycardia has a special significance in scarlet fever, typhoid fever, and pneumonia; (4) in heart affections, when compensation is established; (5) hydro-nephrosis (here the change from a minimal to a maximal amount is of diagnostic aid); (6) in exudates and transudates of the pleuras and peritoneum, when the fluid has been absorbed; (7) after hysteric and epileptic attacks.

Oliguria is associated with the following conditions: (1) Fevers, in which the blood pressure is lowered, there being usually a slight dilation of the heart and increased cutaneous transudation; (2) heart affections in stages of disturbed compensation (valvular lesions, myocarditis and emphysema); (3) in acute nephritis and acute exacerbations of chronic forms; (4) in obstruction of urinary passages, as stricture of the urethra, hypertrophy of the prostate, atony of the bladder, and stones in the bladder or pelvis of the kidneys.

Anuria is seen in the following conditions: Asiatic cholera, uremia, lead colic, kidney stones, cholera infantum, severe cases of dysentery.

The reaction of the urine is faintly acid when the conditions are normal. This normal acidity is due to ingestion of albuminous foods which are changed to acids (phosphoric, sulfuric, hippuric and uric). After a strictly vegetable diet, the reaction is neutral or alkaline. We find an increasing acidity in conditions in which albumin from the body is oxidized as in diabetes mellitus, in cancer, and in fevers.¹ Alkaline reaction is seen in cases in which there is cystitis or atony of the bladder. These conditions permit a fermentation of urine, the urea being decomposed into ammonium carbonate. This is a volatile alkalinity, and is due to the action of ammonia. The litmus paper turns blue, but returns to a red color on heating. Fixed alkalinity is due to an increased alkalinity in the blood, as seen in cases in which exudates and transudates are absorbed, and in stomach disorders when hydrochloric acid is diminished. Albumin may occur in the urine in one of four forms: Serum albumin, nuclealbumin, albumoses, peptone. Each form has a special clinical significance. So long as the renal epithelium is normal, no albumin can pass its barriers, any alteration of it by irritation or otherwise causes presence of albumin in the urine. This change may be only temporary. We may have a physiologic albuminuria, which is met under the following conditions: 1. After excessive muscular exercise. 2. After exposure to cold, especially after a cold bath. 3. After drinking strong alcoholics. These conditions cause temporary injury to the kidneys, a continuation of which will lead to nephritis.² Diseases in which we have albuminuria are the following: 1. Acute infections (here we have the febrile albuminuria due to a cloudy swelling of the renal epithelium. The albumin leaves when the fever abates. In the sediment we find urates). 2. In anemic states, especially pernicious anemia, leukemia and chlorosis. This form of albuminuria is due to a fatty degeneration of the bloodvessels. 3. In jaundice we have mostly nuclealbumin present. 4. In heart affections, in the stage of disturbed compensation. When the urinary amount increases the albumin disappears, which is a good prognostic point. 5. After the use of certain drugs, such

as salicylic acid, pyrogallic acid, carbolic acid, chloroform, ether, turpentine, phosphorus, arsenic, etc., which produce renal hyperemia which if continued will lead to nephritis. 6. In pregnancy albuminuria often occurs in primipara, but usually disappears after parturition. A persistence of the albuminuria after the birth of the child points to a nephritis. This form is due to an autointoxication; the organs having extra work an accumulation of toxins occurs, which produces a temporary insufficiency of the kidneys. 7. In the various forms of nephritis.

A consideration of the clinical significance of each form of albumin is now necessary: (1) Nuclealbumin is not found in normal urine. It is the product of desquamating epithelial cells, and is found in all catarrhal conditions of the urinary passages, such as pyelitis, cystitis, urethritis (chronic or acute). Nuclealbumin is one of the constituents of bile, hence in cases of jaundice its presence in urine may be expected.³ In suspicious cases of gallstones, when but a small quantity of bile enters the blood, we can get the nuclealbumin reaction, and we can get this reaction when the ordinary bile tests are negative; (2) albuminose are intermediate products of albumin digestion in the stomach. Albuminous food is changed by the action of HCl into acid albumin, then to albumoses, and lastly to peptone. This peptonization is necessary to render albumin absorbable. The moment peptone is absorbed and taken up by lymphatics into the blood it is changed to serum albumin, otherwise the entire amount of peptone would be excreted by the kidneys. Albumoses in urine are readily confounded with serum albumin. Its presence does not indicate renal affection at all. We find it present in scarlatina, leukemia, and stomach and liver disorders; (3) peptone is never present normally in the blood, hence it is not present in normal urine. Whenever there is a destruction of tissue and the destroyed tissue is absorbed, peptone is present in the urine. In phosphorus poisoning, in the absorption of amniotic liquor from a dead fetus, in ulcerating carcinoma and in acute suppurations, peptone is present in the urine. The presence of peptone in the urine is of great diagnostic importance in cryptogenic suppurations, and together with polynuclear leukocytosis, is often the only symptom present; (4) serum albumin is the end-product of albuminous food, and is one of the chief constituents of the blood. When the integrity of the renal epithelium is unimpaired there is no leakage of serum albumin. Any irritation of the kidneys produced by cold, chemic, mechanic or toxic irritants, will cause the presence of serum albumin in the urine. In various forms of nephritis this is the form in which albumin appears in the urine, and when associated with casts, blood and kidney elements, points to one of the forms of Bright's disease.

Having now considered separately the forms of albumin present in the urine, we must look into the methods of detecting each form. There are five tests in active use: 1. The heat test: A small quantity of urine is boiled slowly in a test-tube, a cloudiness may be due to albumin or phosphates. Add a few drops of acetic acid and the cloud disappears if due to phosphates. The disadvantage of this test is that in any of the four forms of albumin it will produce a reaction. 2. Nitric acid test: To a small quantity of urine in a test-tube add a similar quantity of nitric acid. A grayish ring appears on the line of contact if the urine contains albumin. This test is not accurate as bile causes a similar reaction. 3. Potassium ferrocyanid, 10% solution: Take two test-tubes and place a small quantity of urine in each. Dilute the urine one-third with water. Now add a few drops of acetic acid to one tube (using the second tube for a comparison of colors). Now mix the two tubes several times and divide again, having some acidulated urine in each tube. Now, to one tube add one or two drops of potassium ferrocyanid solution. This test is positive if a grayish cloud appears and is accurate and delicate. 4. Add to the urine one-third its amount of a 10% solution of sodium hydrate. Now add a few drops of a 2% solution of copper sulfate. If a purple color appears, the urine contains peptone. Normal urine shows a bluish green color. 5. Add to a small quantity of urine twice the amount of a solution composed of equal parts of diluted HCl and sodium chlorid solution (30%). If albumoses are present, a cloudiness appears and disappears

on heating the solution. When allowed to cool the cloudiness reappears.

Urine containing nuclealbumin reacts to the first and second test. On making the third test we get a characteristic cloudiness after the addition of acetic acid that does not increase on addition of ferrocyanid solution if nuclealbumin alone be present. Should serum albumin also be present, the cloudiness increases. Should we desire to examine a specimen of urine containing serum albumin for peptone we must first remove the serum albumin by heating and filtration and then employ the fourth test. In examining urine for albumin begin with the third test. If it is negative, we have excluded all forms of albuminous substances except peptone and by making the fourth test we can prove its presence or absence. For general office work the third test is sufficient. When reaction from the third test is positive, in the majority of cases we are dealing with serum albumin, but as albumoses alone could be confounded with it, by making the fifth test we can be positive. The great majority of physicians rely upon the heat and nitric acid tests. That they are unreliable and unscientific, is self-evident.

REFERENCES.

- ¹ Strümpell, 1902 edition, page 669.
² Landois and Sterling, Physiology, page 456.
³ Strümpell, 1902, page 540.

PELVIC ABSCESS CONSEQUENT TO OSTEOMYELITIS OF THE PELVIC BONES.

BY

W. H. MORLEY, PH.B., M.D.,

of Ann Arbor, Mich.

To the Editor of American Medicine:—In your issue of December 6, 1902, Dr. H. A. Wilson, in a paper entitled Pus in the Pelvis as a Result of Bone or Joint Necrosis: Diagnosis and Treatment, calls attention to the difficulty of making a diagnosis of disease of the pelvic bones when the pus incident thereto has burrowed its way downward into the pelvis. Through the kindness of Dr. Peterson I am able to report a pertinent case that was admitted to the gynecologic service of the University Hospital, April 30, 1902.

The patient, aged 22, was single. Her family history was negative. Menstruation appeared at 13, and was regular as to duration and amount up to the time of her present illness. A sharp pain in the left side and back usually marked the onset of her periods. A yellowish offensive leukorrhœal discharge existed for six years prior to her admission to the hospital. The patient had one child with a normal puerperium, and one abortion at two months. Her appetite and digestion have always been poor; bowels and bladder negative.

The present trouble began about seven weeks prior to entrance, when a sharp, shooting pain of great severity in the back and left hip compelled the patient to go to bed, where she has since been confined. She first noticed a lameness in her left leg in May, 1899, a few days before the birth of her child. This lameness was more severe at night, and has existed, with periodic exacerbations, since its onset, being much less severe during the warmer weather. The left leg at entrance was flexed on the thigh, and the thigh flexed on the hip. The patient has had to wear a truss for a left inguinal hernia since the birth of her child, three years ago.

Pelvic examination at entrance showed a stellate laceration of the cervix and the uterus apparently crowded to the right by a large fluctuating mass on the left side. Owing to extreme tenderness the boundaries of the mass could not be outlined, nor was palpation of the adnexa possible. Examination of the blood showed 2,600,000 reds, 20,881 whites, with a hemoglobin of 60%. The urine was negative. Her temperature on the day of admission was 102°, and her pulse 150. Both continued high until a vaginal incision was made two days later, when about 2,500 cc. of a very foul-smelling pus escaped. This was followed by a drop of the temperature to normal, and the patient felt and looked better. Four days later the opening in the culdesac was dilated to afford a freer drainage, as the temperature again rose to 102°. This operation gave no apparent relief, and no marked fall in the temperature was observed. The patient complained at this time of pain in her left side, and lay on her right side for relief. Examination disclosed a semifluctuating mass just above the left iliac crest about the size of an orange. Tenderness could be elicited on pressure over the upper part of the ileum and extended over to and included the left half of the sacrum. Examination of the blood showed 27,000 whites.

On May 9, 1902, an incision over the crest of the ileum, at the juncture of its middle with its posterior third, gave exit to about 2,000 cc. of very foul-smelling pus. A uterine sound with some manipulation was passed over the iliac crest down through the opening in the vaginal culdesac. Examination showed an extensive necrosis of the iliac bone with the usual honeycombed appearance. After a thorough irrigation of the wound with salt solution, a perforated rubber drainage tube was passed from the iliac incision down through the opening in the culdesac. The temperature fell to 98° the next morning. The patient made an uninterrupted convalescence until her discharge, June 30, 1902, 52 days after her admission. At the time she left the hospital the opening in the vaginal culdesac was entirely healed and a small granulating wound marked the site of the former incision over the left iliac crest.

The interesting features of this case were: the enormous size of the pelvic abscess and the absence of signs of bone disease, except the extreme flexure of the leg and thigh on the hip. These latter signs were attributed to the effects of the pus in the pelvis, and it was only after the appearance of the tumor near the left iliac crest that the location of the suppurative process was suspected. The lameness in the left leg about the time of her confinement, its acute onset, and the subsequent flexure of the corresponding leg and thigh on the pelvis, are not the usual symptoms that accompany chronic disease of the appendages. The amount of pus that escaped through the vaginal opening was too large for an ordinary pus-tube to contain. Although free drainage was secured through the culdesac, yet the iliac abscess formed, demonstrating by its rapid onset that the primary pyogenic focus was extra-pelvic, because with good vaginal drainage the pus could not have worked its way upward. Incision of the iliac tumor, the passage of the uterine sound down into the vagina, and the necrosis of the iliac bone, confirmed the diagnosis of pelvic bone disease.

HEMORRHAGIC PANCREATITIS.

To the Editor of American Medicine:—The accompanying is a copy of a letter written by my father to his brother in the year 1810, when both were medical students. As describing the lesions of a hemorrhagic pancreatitis it may interest your readers.

G. M. SWIFT.

New York City.

LANCASTER, July 10th, 1810.

Dear Brother,

Last Friday died in this town a Mr. Aaron Rugg, about 50 years of age, whose death was supposed to have been occasioned by a tape worm or tenia, as he had once expelled a part of one & as some of the circumstances attending his sickness and death seemed to favour this opinion. For the satisfaction of the last attending physician, & of the family & friends of the deceased, Saturday morning Dr. Atherton and myself, after preparing the necessary instruments, went to ascertain the fact. We found the family in tears—expressed our sorrow for their affliction—diverted their attention by questioning them about the circumstances of the man's death &c.—got them to furnish us with water, cloths, thread for ligatures, &c. & then entered upon our business. (We had two men in the room with us). The cavity of the abdomen being laid open, its contents exhibited a very morbid appearance. The omentum, mesentery and pancreas were very much decayed. There were two Introsuptions in the ileum, both were judged to be not less than six inches. After this discovery the Dr. gave me the scalpel—we took out the intestine, ran out the canal—found seven common worms, but no tenia. There was a small induration in the liver—the gall bladder was large—the spleen small. Being satisfied, the viscera which had been taken out were replaced; with a large, crooked needle, I stitched up the dissection & we left the body, as nearly as possible, in the same state in which we found it. We then washed and scrubbed in water, vinegar, &c.; & assafœtida that day, for the first time smelt sweet.

When we got to the house we found a sponge had been forgotten; but it proved to be of no consequence as the vessels seemed to be almost entirely free from blood. The Dr. said he could not have a gill in his whole body. It seems that young Dr. Carter, who had been attending Mr. Rugg, & at length confessed he did not (know) what was the matter with him; about three months since, finding him with a flush in the face, "said he had too much blood in his brains"! & accordingly most *injudiciously* diminished its quantity, when there was already too little to keep up a proper circulation! The patient felt himself weakened, said it was wrong and continued to say it, while he retained the use of his reason, which he lost about three weeks before his death. Nos cavemus.—

Yours &c.

W. SWIFT.

ORIGINAL ARTICLES

DIFFERENTIAL DIAGNOSIS OF CERTAIN DISEASES OF THE LIVER.*

BY

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of Buffalo, N. Y.

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In presenting this paper I do not attempt a full discussion of each of the subjects considered, nor do I dwell upon the differential diagnosis in a general sense. It is my aim to bring before you the consideration of certain familiar diseases of the liver and its appendages, so arranged as to contrast most sharply the clinical picture of one as compared to that with which it is, in my experience, most commonly confused.

First, Between Cirrhosis of the Liver and So-called Syphilitic Cirrhosis of the Liver.—Some obscurity exists in the current use of the term cirrhosis of the liver. In the broadest sense a liver may be said to be cirrhotic when the connective tissue is present in relative excess. So it happens that the liver is by some called cirrhotic because of the connective tissue ingrowth that follows chronic congestion from stasis in the hepatic veins, or, when it becomes small as a result of chronic perihepatitis and contraction of the capsule and consequent atrophy of the parenchyma; or when the interstitial elements are multiplied in consequence of chronic obstruction of the biliary ducts. In a more specific sense, the term is employed to describe a condition in which the connective tissue increases either within the lobules, or in the perilobular spaces, which follows either infection or the long-continued irritation produced by toxic substances that reach the liver through the portal blood.

No little discussion has ensued relative to the use of the term hypertrophic and atrophic cirrhosis. Histologically, when the round-celled infiltration is especially intralobular, it is said to be characteristic of hypertrophic cirrhosis, and clinically, in such cases, one would expect to find the liver increased in bulk and ascites absent. On the other hand, when the connective tissue grows for the most part in the interlobular spaces around the radicals of the portal veins, and to some extent cuts off the supply of portal blood to the liver, it is said to be characteristic of atrophic cirrhosis, and clinically, one would expect to find in such cases the liver decreased in bulk and ascites present. When one comes to study the subject at the bedside, and later in the dead-house, he finds that this distinction between atrophic and hypertrophic cirrhosis is, for the most part, an academic question. This is so for the reason that in the average case abnormal connective tissue is found in excess both within and without the lobules, and clinically, there may be marked intralobular connective tissue without the liver being appreciably increased in size, and on the other hand, when there is marked increase of the perilobular connective tissue and great obstruction of the portal radicals, the liver may be considerably enlarged as the result of an accompanying fatty infiltration.

I shall use the term cirrhosis of the liver in the more specific sense, applying it to those cases in which the connective tissue ingrowth results from the infections or toxemias, whether this leads to change of intralobular or perilobular tissue. In point of fact, as has been said, both states are actually met, and in both there is found, as Councilman has pointed out, an atrophy of the parenchyma of the organ quite proportionate to the connective tissue increase, and there is strong reason for thinking that the parenchymatous atrophy takes place before the ingrowth of interstitial tissue. Having said this in the interest of a better understanding, I will now make

some comparison between the disease as one ordinarily encounters it—coming about from causes that cannot be isolated or labeled—and a form of chronic hepatitis which occurs in the later stages of syphilitic infection. In the latter condition we have a diffuse round-celled infiltration of the liver in which the new formed elements replace, to a considerable extent, the parenchyma, and at the same time result in increasing the connective tissue about the portal branches. Frequently there is augmentation of the process in a particular area and a gumma is formed. Clinically, the liver is, in my experience, always enlarged; in a few exceptional cases much enlarged; occasionally, when a gumma exists in a region of the liver accessible to palpation, a protuberance may be felt. Ascites may be present or not, and the same is true of jaundice, but the latter is encountered in the majority of cases. Often there is a slight, and sometimes marked, elevation of temperature, and usually there is a decline in weight at times accompanied by an increase in the elimination of urea. In some cases the cachexia of late syphilis is clearly evident, but in others one searches with little success for the familiar late syphilitic stigmata.

Now, if we compare so-called syphilitic cirrhosis of the liver with ordinary hepatic cirrhosis we shall see that there are many points of resemblance. Even when the history of syphilis is undoubted it is generally impossible to exclude simple cirrhosis, for one cannot be sure that the factors which lead to the latter affection may not be operative in a syphilitic patient either with or without an accompanying syphilitic infiltration of the organ. How, then, is one to make the differential diagnosis? To begin with, the fact that the liver is large, that it is frequently bosselated, or at least has an irregular contour, that it is sometimes accompanied by a friction rub would excite suspicion. Moreover, the history of syphilis is always a matter of importance, especially when there are arterial sclerosis, periosteal nodosities or characteristic cutaneous lesions; a history of fever not easily accounted for, the temperature following a course that suggests sepsis, or malaria, or typhoid; but the blood examination excluding all of these should lead one to inquire as to syphilis; and, finally, comes the therapeutic test—the administration of mercury and the iodids. This criterion is altogether the most important, but one must not be too hasty in forming conclusions. It is a wellknown fact that mercury and the iodids occasionally produce a transient beneficial effect in cases of simple cirrhosis of the liver, and on the other hand, cases of syphilitic cirrhosis fail to respond to treatment as promptly as one might expect; also, one finds not a few cases in which there is a blending of the two elements of simple and syphilitic cirrhosis acting at the same time. A careful record of a case before and after the resort to drugs, in a great majority of cases, would settle the diagnosis; and in the syphilitic an apparent cure will ensue in a large proportion of cases. Sometimes the liver is too thoroughly diseased to admit of great benefit no matter how thoroughly the treatment is applied. There may be improvement, but the liver will remain incompetent. In other cases the patient will be restored to comparative health and remain in this condition for some years, when the disease will recur and may remain very resistant to treatment. I have now under observation such a case which I have not hitherto reported.

The patient, a woman of 46 years, entered my clinic in November, 1900. She had drunk freely of whisky for a number of years, denied syphilis, but had suspicious lesions of the skin. The liver was uniformly enlarged two fingers' breadth below the free border of the ribs, slightly irregular and somewhat tender to pressure; she had lost considerable flesh, had ascites, edema of the lower extremities and jaundice. Urea was eliminated in relative excess; there was slight albuminuria, with granular and hyaline casts; the arteries were somewhat sclerotic, and the left heart was slightly enlarged. Mercurial inunction was applied for a period, followed by a similar period of the internal administration of potassium iodid in large doses. Improvement was

* Read before the Rochester Academy of Medicine, January 7, 1903.

noticed after the second week, and at the expiration of one month there was a marked change for the better. In the early part of February, 1901, the patient considered herself well. The jaundice and ascites had disappeared, the liver had resumed its normal size, and she had regained her flesh. She returned home to resume arduous household duties, and continued well until October of the present year, when she again appeared in the ward with the return of her old symptoms in a more aggravated form. During the past two months she has been under the old plan of treatment; the first month without appreciable result. The ascites became so embarrassing that she was tapped on the first of December.

At the present time she is improving slowly, but it seems to me improbable that she will be restored to a condition such as followed her first course of treatment. In this case we likely have to deal with a mixed form of cirrhosis, partly alcoholic and partly syphilitic. I have met several such cases.

This amount of space has been given the subject for the reason that it calls attention to a group of cases which is amenable to treatment and which is likely to be overlooked. In a paper on syphilis of the liver,¹ which I read before the last meeting of the American Medical Association, there followed a discussion which showed that the subject possesses more than usual interest, and is worthy of still further study.

Between Cholelithiasis and Cancer of the Liver.—A frequent and important question in differentiation arises between cholelithiasis and cancer of the liver. The careful study which has been given to cholecystitis and gallstone during the past few years has placed us in a position where we can identify the affection more easily. Formerly the question of differentiation offered at times very serious difficulties, and these are not altogether removed as yet. We have learned that gallstone cases are common, and in their history we find great variation. The liver at some stage of the process of development of gallstone shows at least transient enlargement, but when the patient appears for diagnosis, the enlargement may have disappeared. When there is active cholecystitis, angiocholitis, or obstruction of the biliary ducts by calculus, the liver will be found enlarged. In the absence of these, and with a calculus present in the gallbladder, or movable in the ampulla of Vater, no enlargement of the liver may be found. Jaundice also is frequently absent. Of 720 cases in which laparotomy for gallstone was performed by Hans Kehr, jaundice was absent in 80% or more. In some of these there was a history of past attacks of jaundice. When inflammation of the gallbladder extends into the biliary passages and obstructs these by swelling, jaundice results, as it generally does, from angiocholitis from any cause. Jaundice is to be expected in an intermittent form when the gallstone is at the outlet of the common duct causing transient obstruction. Exceptionally, a stone is so firmly incarcerated that the jaundice is persistent, but this is rare. A more continuous jaundice, and yet one usually attended with periods of remission, is produced by a concretion held in the cystic duct near its junction with the hepatic duct caused by an accompanying inflammatory swelling. A stone thus located is usually accompanied by at least an icteric appearance which, from time to time, is intensified. A stone thus located is more likely to be accompanied by jaundice than when it is passed onward into the common duct.

In the early stages of cholecystitis, with or without the presence of gallstone, the gallbladder is likely to be enlarged. If the inflammation has been prolonged or repeated, one or more concretions are almost invariably present in the gallbladder. As a result of thickening of the walls of the gallbladder and subsequent contraction, the gallbladder is frequently small and entirely covered over by the right lobe of the liver. Only exceptionally in these cases do we find hydrops or empyema of the gallbladder. When a stone is held at the juncture of the cystic and hepatic ducts, the gallbladder is even less likely to be enlarged, and when the concretion is retained at the outlet of the choleductus, enlargement of

the gallbladder is almost invariably absent. Courvoisier first called attention to this fact. Whether jaundice is present or absent under these conditions, the gallbladder is not increased in size. This is contrary to the teachings in the older editions of our textbooks, and for that reason is here emphasized, as was admirably done by Cabot's² recent paper. The presence of jaundice, with enlargement of the gallbladder, suggests cancer. On the other hand, with the history of gallstone and with the gallbladder not palpable, it suggests stone in the common duct. This practically is Courvoisier's law.

With acute cholecystitis we often find severe fever, not infrequently accompanied by chills and a marked leukocytosis. This is illustrated in the post-typhoidal cases which I reported at the State Medical Association in 1901.³ We should not forget that intermittent fever, which suggests a quotidian malaria or marked septiciemia, may arise from a gallstone present in the cystic or common duct. This latter form of fever is not apt to be seen when the stone is in the gallbladder, save in the early stages when there is acute cholecystitis. Even then the fever differs somewhat in character. In a case of cholelithiasis in which a stone becomes incarcerated in one of the biliary passages, fever may be excited, and this is sometimes unaccompanied by leukocytosis. Such attacks of fever are characterized by the suddenness of the onset, the severity of the rigor, sometimes by high temperature followed by profuse sweating. The disappearance of the febrile attack is often prompt, and it may recur at regular or irregular periods. Such attacks of intermittent fever are rarely seen in this disease except when the stone is engaged in one of the biliary passages.

Gallstone is usually accompanied by pain. This is sometimes inconspicuous, yet is rarely altogether absent. It frequently is located in the epigastrium, but tenderness is usually found in the region of the gallbladder, at the juncture of the ninth rib and cartilage, and, as Boas has pointed out, at a certain point just to the right of the twelfth dorsal vertebra. Vomiting commonly forms a part of the symptom-complex of gallstone.

When cancer affects the liver, it is usually secondary, and some information may be gained by locating the primary growth. In rare cases in which the liver is primarily affected, the organ is usually large before our attention is called to it. More often the gallbladder or biliary ducts are involved, and not infrequently some of the larger branches of the portal are obstructed. As a result, we expect in cancer of the liver to find jaundice, perhaps ascites, and the gallbladder is usually enlarged. The history of the characteristic hepatic colic of gallstone is lacking except in those cases in which cancer is super-added to cholelithiasis. There is also the history of loss of weight, absence of fever and the presence of the cachexia of cancer to assist us in differentiation. In cancer there is often very little evidence of inflammatory reaction, which state is so commonly observed in cholelithiasis. We must not expect to make a positive diagnosis in all cases, even when one of the affections is unaccompanied by the other; but if we remember what has been said about the diagnosis of gallstone, and recall that in cancer we generally find the liver large, jaundice present, the gallbladder increased in size and palpable, a marked secondary anemia and cachexia present, fever and biliary colic absent, we should usually be able to distinguish between the two affections.

Between cholecystitis with angiocholitis and abscess of the liver one of the most trying questions in differential diagnosis is occasionally encountered. When a case of cholecystitis, accompanied or not accompanied by gallstone, is complicated by angiocholitis, the symptom-complex may very closely resemble certain cases of suppurative hepatitis. When we come to analyze the subject carefully, we will see that the embarrassment really lies in the fact that in either case there is present an inflammatory process in the region of the liver; and

the difficulty is to locate the seat of the inflammatory reaction. With acute cholecystitis, the fever may be of the continuous type, although accompanied by remissions. If there is a stone engaged in the biliary passages, the fever may be characterized by periods of brief and marked rise in the temperature, to be followed by a stage of sweating. Still there is usually a little difficulty, as has been seen, in understanding the nature of the process when angiocholitis is present. When the latter process appears the liver increases in size, and sometimes the enlargement is relatively localized; over this area there is usually some tenderness upon pressure and often a limited perihepatitis, in which case pain is to be expected, especially on deep respiratory movements. As a matter of course, in case of angiocholitis, jaundice would be an ever-present symptom, but, occasionally, when the inflammation is limited, the jaundice is slight. In angiocholitis, associated with disturbance of the gallbladder or with obstruction of the larger ducts, the enlargement of the liver would appear for the most part at the lower border, so that this region would become palpable. When one meets abscess of the liver it is likely to be single; or, if multiple, there is one which far outranks the others in point of size. The location of such an abscess is usually near the upper, rather than the lower, border of the organ; more often in the right than in the left lobe. As a result, the liver is enlarged upward rather than downward, and there are signs of the invasion of the right pleural cavity, either in the ascent of the diaphragm and the consequent retraction of the lower border of the lung, or in extension of inflammation through the intercommunicating lymphatics, and the setting-up of a diaphragmatic pleurisy with its characteristic signs. This difference in the location of the enlargement of the liver is of importance in the differentiation in question, although it must be remembered that the rule is far from invariable. The fever which occurs in abscess of the liver follows no constant rule; while sometimes of a severe grade it is occasionally surprisingly mild in character, and while it is sometimes marked by remissions and intermissions, it is, on the other hand, sometimes continuous and resembles typhoid. Jaundice is less frequently encountered than might be expected; it may be present as a result of pressure upon some of the larger bile ducts, but more frequently from an accompanying angiocholitis. The pain in abscess of the liver is not usually great unless perihepatitis is present, and even when that is the case, it in no way resembles the pain of cholecystitis. Occasionally it radiates to the right shoulder, but that is equally true of cholelithiasis; in either condition a leukocytosis will be found, and in proportion to the other symptoms it is likely to be greater in hepatic abscess; but even the acute, nonpurulent cholecystitis often gives rise to a marked leukocytosis, and the patients sometimes have a septic appearance even when there is no pus in the gallbladder. The symptoms of acute cholecystitis, owing to the extreme tension which accompanies the inflammation of the viscus, are of a more acute character than those of hepatitis, unless the infection should happen to be of an unusually virulent type. The history of the case should be of assistance because in one we may have an account of previous attacks of pain and the other phenomena of cholecystitis, whereas in the other we may have the history of some antecedent trouble as, for instance, dysentery, from which a hepatic abscess would be likely to spring. When an abscess becomes so conspicuous as to cause edema or bulging of the superficial structures, the nature of the process becomes almost self-evident. It is then not likely to be confounded with anything else, unless it be with suppurating hydatid cyst. Finally, when we suspect abscess, we may have recourse to puncture, and the point of selection would show that we had to deal with abscess of the liver and not empyema of the gallbladder. Aside from the pain which it occasions, I have not seen

any injury come even from repeated punctures of the liver, but when the abscess happens to be small, it is not always easy to find. Still, when available, this diagnostic measure is so valuable that it should not be omitted. On the whole, in reviewing the subject of abscess of the liver, we should array before us these facts: enlargement of the upper rather than the lower border of the liver; inflammation of the pleural cavity, jaundice possibly severe, more likely slight, or absent; tenderness, possibly perihepatitis; fever of varying type; leukocytosis; the history as to causation; and finally, the outcome of puncture.

Between Sclerosis of the Liver Following Chronic Biliary Obstruction and the So-called Hanot's Cirrhosis of the Liver.—The question of biliary cirrhosis of the liver, as described in the textbooks of the day, is practically left in inextricable confusion. Osler's Practice presents a distinct picture of Hanot's cirrhosis, and from his description one is able to form a reasonable concept of the condition. Most writers, while possibly implying that a difference exists between the ordinary biliary cirrhosis described by the French and the cirrhosis of the Hanot type, nevertheless discuss these two conditions as though they were speaking of a common disease, and the impression is left upon the reader's mind that the diseases closely resemble each other, if, indeed, they are not identical. In reviewing the literature of the subject one almost comes to feel that the reason for this confusion lies in the fact that the writers depend for their views upon the descriptions which they have found in the French. A few years ago very much was written in France on *Cirrhose hypertrophique avec ictere*, and we have not quite recovered from the results of the foreign discussions concerning the nature of different types of enlarged cirrhotic livers accompanied with jaundice. Undoubtedly the confusion was worse confounded by Charcot's discussion of Hanot's cases in which he attempted to account for the change in the liver by the angiocholitis that existed, and explained the increase in size of the liver and the fatal termination by the retention of bile which resulted. It is a remarkable fact that there is no uniformity in the several textbook accounts either as to the morbid anatomy or the clinical history of the conditions in question. It is possible that this is explained by the fact that many clinicians feel what Eichhorst unhesitatingly acknowledges in these words: "The classifications suggested therefore scarcely indicate more than that every case of cirrhosis of the liver may possess peculiarities of its own and should be carefully examined. Upon what these peculiarities depend has, however, not yet been explained." While there is some truth in this bold avowal it does not do justice to our present knowledge of the subject, and at any rate there can be no doubt as to the separateness which exists between so-called hypertrophic cirrhosis of the liver and Hanot's cirrhosis of the liver. In the former we have to deal with a condition which results from obstruction to the bile ducts from any cause whatsoever: from obstructing gallstones, adhesions, pressure from tumors or long continued inflammatory processes involving the biliary channels, and no matter from what cause we have a resulting stasis of bile, moderate enlargement of the liver, jaundice, with the usual symptomatology of cholemia. Some cases are complicated by connective tissue changes, such as occur in simple atrophic cirrhosis, and in such instances ascites appears. On the other hand ascites may be absent while the jaundice remains intense. The features that are characteristic are continued jaundice, usually marked in character, moderate enlargement of the liver, with little or no change of the spleen.

Compare this now with what is observed in uncomplicated cases of Hanot's cirrhosis of the liver. The disease is usually seen in the young, often in children. The history of alcoholism is generally absent, the onset is

often acute, although the disease is usually protracted. In the beginning there is pain, often severe, in the region of the liver, and probably a temporary elevation of temperature. The patient is found to be moderately jaundiced, the liver is very large; the spleen is also very large, and pigmentation of the skin may be present over and beyond that occasioned by jaundice. There are intervals without pain, but pain recurs without apparent reason, lasting sometimes a few hours and perhaps a few days, usually attended with temporary exaggeration of the jaundice, occasionally accompanied by an elevation of temperature. In the intervals, aside from a sense of hypochondriac pressure, perhaps occasioned by the weight of the liver, and the symptoms of moderate cholemia, the patients make little complaint, and are sometimes for months exempt from all acute symptoms. Eventually, although, perhaps, not for five or ten years, the jaundice deepens, the temperature rises, and the patient ultimately dies from icterus gravis. It is only necessary to see and study a case of Hanot's cirrhosis in order to feel certain that one is dealing with a condition quite distinct from the ordinary hypertrophic biliary cirrhosis of French, and following them of English, German, and American observers. I hope hereafter to report some cases of Hanot's cirrhosis in which the details of the affection may be dwelt upon more fully. For the present it will be necessary only to recall these facts: That a young person is suddenly attacked with abdominal pain, with a very large, sharp-edged, smooth liver, having at the same time a very large spleen and accompanying jaundice, but no ascites; that he afterward improves, but the liver and spleen continue increasing in size, the jaundice never quite disappearing, but increasing from time to time, usually synchronously with elevation of temperature. Observe that this is a very chronic condition, that it is free from a history of alcoholism, or other known cause of disease, and that though it may persist for several years, the fatal outcome in *icterus gravis* is assured, if we are to be guided by the history of recorded cases.

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THE SIGNIFICANCE OF THE PRESENCE OF STREPTOCOCCI IN MARKET MILK.

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The infectious properties that are alleged to be possessed by milk containing streptococci warrant an inquiry into their significance in comparative pathology. Of particular importance are facts concerning their presence in the cow's udder in health or disease and concerning the etiologic relation of streptococci to gastrointestinal disorders in children.

Moore¹ has found streptococci associated with suppurative cellulitis in the feet and legs of cattle and sheep, in fistulous withers, omphalophlebitis, septic pneumonia, strangles, and brustseuche in the horse, and in sporadic and rapidly-spreading infections of the cow's udder. Moore also called attention to the fact that streptococci exist in the water, the soil, and on the normal mucosa of the mouth, throat, nares, intestines, and vagina. One of us has isolated streptococci from the bronchioles of the horse.

The task of differentiating the streptococci and of

determining their true pathologic significance constitutes one of the great problems which confront the comparative pathologist. Moore^{1a} has defined the problem as follows: "1. Are the streptococci which are encountered in different kinds of lesions, such as acute inflammatory processes, abscesses, septicemia and the like, different species? 2. Is a single species of pathogenic streptococcus capable of producing disease in different species of animals, or different kinds of disease in the same species?" The classification of streptococci is far from satisfactory, for there are not yet discovered sufficient characters to differentiate satisfactorily the species of this genus. Klein,² von Lingelsheim,³ Kurth,⁴ Pasquale,⁵ and Moore⁶ have made attempts to place the classification upon a firm basis.

The role of streptococci as the cause of mammitis in the cow and the probable relation of this affection to digestive disorders in infants are both of vital interest to the sanitary dairyman. Mammitis, commonly called garget, is undoubtedly the most common disease of dairy cows. The investigations of Nocard and Mollereau⁷ first, and later those of Hess,⁸ Nencki,⁹ von Freudenreich,¹⁰ Guillebeau,¹¹ Zschokke,¹² and Moore,¹ all lead to the conclusion that streptococci stand in a causative relation to infectious mammitis. Inflammatory conditions of the udder apparently due to organisms other than streptococci have been observed by workers in Switzerland, but this fact does not concern the subject under consideration.

The affection may occur in isolated cases with or without recognizable sources of infection and with little or no tendency to spread to adjacent animals. In other cases the outbreak may spread to a large proportion of the cows in the stable. In view of the widespread association of streptococci with affections of the domestic animals, the occurrence of cases of sporadic infectious mammitis is not to be considered as surprising.

Infectious mammitis appears without specific symptoms. Sometimes white caseous masses are noticed in the otherwise normal milk, and often the milker first becomes aware of the existence of udder inflammation by noticing the masses of casein lodged on the milk strainer. Sometimes the disease is recognized by the disagreeable salty taste of the milk, caseous masses in the teat canal interrupting the milk stream. Pus is always present in the milk of cows suffering from this affection, but it is not always present in sufficient amount to impart its characteristic appearance to the fluid. The general condition of the animal is not usually disturbed, although the quantity of milk secreted is lessened in the more serious cases. The udder is sometimes swollen and hard, but not always. The congestion of the udder after parturition causes an appearance readily confused with that noticed in cases of streptococcus infection.

The infected milk possesses no constant appearance by which the disease may be diagnosed without a microscopic examination. The streptococci in a sample of such milk adhere to the pus cells and are therefore present in the purulent sediment precipitated from a sample after standing. A microscopic examination is necessary for the certain diagnosis of this infection. The salty taste of the milk is due to an admixture of blood plasma and is not characteristic, for it is also noted in other sorts of udder catarrh. The color may be normal or present a variety of shades due to the presence of a variable quantity of pus or of red blood-corpuscles. A deficient amount of fat brings about the watery appearance frequently noted.

The chemic reaction of the milk varies. The streptococci themselves bring about an acid reaction of the fluid in their vicinity while the serum may be neutral. That is, the streptococci adhering to the pus may cause an acid reaction in the purulent sediment alone. If the sample has stood for some time at a temperature favorable for the multiplication of the streptococci, the whole may become distinctly acid in reaction.

The insidious onset of infectious mammitis renders it exceedingly difficult for even the most conscientious milk dealers to exclude infected milk from the product marketed by them. One of us has repeatedly observed in the Cornell University dairy ephemeral cases of mammitis in which its existence was first called to attention by the presence of white shreds on the milk strainer. In several such instances bacteriologic examination of a sample collected at the next milking when the secretion was apparently normal, showed the presence of streptococci. Slight catarrhal conditions of the udder mucosa without implication of the stroma of the gland, may thus readily pass unnoticed.

Physicians are inclined to designate streptococci as an important cause of infantile digestive disorders. The allusions to streptococci are generally indefinite, no effort being made to differentiate the species of this genus. In the cases in which streptococci have been charged with inciting intestinal disorders in infants, the assertion is based upon the fact that streptococci have been isolated from the milk. This lack of information concerning the association of streptococci with the morbid processes is unavoidable except in cases coming to postmortem examination.

G. Leslie Eastes¹³ writes as follows: "I have also not the slightest doubt that unboiled milk containing streptococci is also to be held responsible for some of the cases of infantile diarrhea and mortality." Holst¹⁴ observed a series of cases of acute gastric catarrh which he attributed to the ingestion of milk containing streptococci. He reports cases of gastric disturbance in four families, apparently caused by raw milk, for only those members of the families that partook of the raw milk were affected. In each instance he found that the patients had partaken of milk from cows suffering from inflammation of the udder.

Niven¹⁵ reports extensive poisoning among the patrons of a single milk dealer. The patients suffered from "diarrhea, sickness, and abdominal pain" and only those persons who had partaken of the milk were seized. A bacteriologic examination revealed the presence of *Bacillus coli communis* and streptococci. It was ascertained that one of the cows in the dairy supplying the milk had been suffering from garget for some time, and on the day when the milk which caused the sickness was produced, the inflammation of the udder of that cow was most marked. While the author considers streptococci to be the cause of the trouble, yet he does not present conclusive evidence in support of that belief.

Wm. Royal Stokes¹⁶ writes: "The prevalence of the acute intestinal disorders among children using cow's milk is well known and many of these conditions are caused by the organisms of suppurative. It would seem therefore that milk from diseased cows, containing these germs, might often be the cause of intestinal troubles especially in young infants.

Busey and Kober¹⁷ hold similar views based upon the authority of Kruger,¹⁸ Nocard and Mollereau,⁷ Bang¹⁹ and others.

Bergey²⁰ observed sickness in an infant fed on milk from a first class dairy and an examination revealed the presence of streptococci in the milk. "This result led to the employment of milk from other first class dairies and the examination of each yielded the same results, viz., the presence of large numbers of streptococci."

Nothing definite can, as yet, be stated with regard to the significance of the presence of streptococci in the milk of healthy cows. Beck²¹ believes that they are closely related with the streptococci which Escherich found in infantile enteritis.

Hirsch²² has described in minute detail the progress of a fatal case of gastroenteritis in an infant, in which streptococci was the etiologic agent. He found the organism like *Streptococcus involutus*, described by Kurth, and found it to be pathogenic to white mice only. Lib-

man,²³ Tavel and Eguet,²⁴ and de Cerenville²⁵ have made similar observations.

Apart from gastrointestinal disorders, streptococci have been found associated with various widely differing affections in man. Among these are erysipelas, phlegmonous inflammation, septicemia, puerperal fever, the various forms of angina and tonsillitis. They are constantly found on the mucosa of the upper air passages in health, a fact of interest in connection with our observations concerning their presence in the healthy udder.

In the winter of 1897-1898 one of us²⁶ while studying the bacterial flora of the udders of several of the cows in the Cornell University dairy noticed the constant presence of streptococci in the freshly drawn milk of one cow. The fact that she was not suffering from mammitis and that she had not so far as known shown symptoms of that affection, lent special interest to the observation. Moreover no streptococci were found in cultures made from the milk of the other seven cows under observation.

The cow under consideration had during the years 1895-1896 headed the University herd in butter production. The fact that the milk record of this cow shows a steady increase since 1892 indicates that she has never suffered a serious attack of infectious mammitis.

Since the presence of streptococci in the udder of this cow was first noted in 1897 their persistence has been observed at varying intervals up to the time of her slaughter. Cultures were made from the milk of the four quarters on November 4, 9 and 23, 1897. On the first two occasions streptococci were observed in overwhelming predominance. On the third examination some micrococci, which had been observed to be present in small numbers on the previous occasions, were found in relatively greater numbers. Agar plate cultures made from the fore milk of all of the quarters on February 2, 1898, showed streptococci in great numbers, almost to the exclusion of other forms. They were found again on several test examinations in 1899.

Samples of milk collected March 27, 1900, showed streptococci to be present in the strippings of all four quarters, as well as in the fore milk.

On April 12, 1900, a sample of the strippings from one quarter was plated in agar for a quantitative determination. On the following day, after incubation, 360 streptococcus colonies were seen, no other species being present. A culture made later in the same manner from another sample of the strippings from the same quarter showed about 150 colonies.

The cow was milked the last time on April 30, 1900, turned out to pasture until July 19, when she was slaughtered. The killing of the cow offered opportunity to study the bacterial flora of her udder²⁷ by means of cultures made directly from the glandular tissue. At the abattoir the udder was carefully dissected off without laying bare the glandular tissue and was taken to the laboratory, where the cultures were made.

The bacteriologic work upon the udder was carried on under conditions that accorded special assurance of freedom from contamination. For the sake of convenience in recording results, it was decided to designate arbitrarily three regions of the udder and teats to be known as A, B, and C. Region A includes the teat and milk cistern. Regions B and C include equal portions of the glandular tissue. The different quarters, right fore, right hind, etc., were abbreviated RF, RH, etc.

In one of the quarters an incision several inches deep was made, extending from the region farthest from the teat down to the base of the teat. From the sides of this gaping incision bits of the glandular tissue were detached with scissors and transferred to tubes of cool liquid agar which were shaken and the contents poured into petri dishes. Two agar plate cultures were made from each of the regions A, B, and C. One bit of tissue from each region was placed in bouillon also. The same procedure was repeated in each quarter in succession.

Examination of the cultures after incubating over night revealed the presence of streptococci in overwhelming predominance in all the cultures. While the color and general appearance of the streptococcus colonies on the agar plate cultures were sufficiently characteristic, yet at least two bouillon subcultures were made from each plate. Numerous coverslip preparations were made directly from the colonies. The bouillon subcultures after 24 hours' incubation were all slightly clouded by flakes distributed throughout the medium, and showed a grayish-white, viscid sediment. Microscopic examination of each of these 50 cultures revealed the presence of streptococci growing in long chains. Direct microscopic examination of the bouillon tubes that had been implanted with bits of glandular tissue detached from the udder, revealed the presence of long chain streptococci, together with a few other micrococci.

Besides the streptococci, the plates showed a few orange-yellow colonies of micrococci and some growing in white colonies. Their presence is not regarded by us as indicating an abnormal condition of the udder. One of us²³ has examined 16 healthy udders in the manner just described, and these chromogenic micrococci have been found in every case. Moreover these same species are practically always present in milk drawn under conditions that exclude the presence of organisms from other sources than the interior of the udder.

All the cultures except those on gelatin were incubated at 37.5° C.

Morphology.—The individual micrococci measure about one micron (1μ) in diameter. In bouillon and other fluid media the chains consist of 10 to 50 or even hundreds of units. Upon agar the chains are short; that is, consist mostly of less than 10 units. The streptococci stain readily with the anilin dyes in ordinary use in the laboratory. They also retain the Gram stain.

Action of Disinfectants.—Potassium permanganate in a 1% solution and boric acid in a 2% solution failed to kill after an exposure of 30 minutes. Carbolic acid 5%, mercuric chlorid .1%, lysol 2%, and Marchand's hydrogen peroxid, diluted one-half, all killed in one minute.

Effect of Sunlight.—Sterile cover glasses smeared with a drop of a 24-hour bouillon culture were exposed to the bright sunlight for one hour in a sterile petri dish. These cover glasses placed in bouillon failed to develop cultures of the streptococcus. Cover glasses treated in the same manner, except that they were kept in the dark, retained living streptococci after 48 hours, a fact demonstrated by introducing them into bouillon.

Inoculation Experiments.—The small experimental animals uniformly failed to succumb to inoculation with this streptococcus. The effect of this streptococcus upon the udder of a dry cow was determined by injecting a bouillon culture through the teat canal. A bacteriologic examination of the fluid contained in her udder showed the presence of a white micrococcus only. After thoroughly disinfecting the udder and teats, a sterilized milking tube was inserted into the teat of the right hind quarter. Five cc. of a 24-hour bouillon culture were introduced by means of a sterile hypodermic syringe inserted into the milking tube. After 48 hours the right hind quarter was enlarged to twice the size of its opposite. Tenderness and local hyperthermia were marked, the lactiferous ducts contained a turbid yellowish fluid, samples of which, upon standing, showed a purulent sediment. Microscopic examination of the pus failed to reveal streptococci, but inoculation of media with pus yielded pure cultures of the organism.

The infection ran a short and mild course, a fact not surprising in view of the absence of functional activity. The contents of the affected quarter, at first purulent, gradually approached the normal until on the tenth day no difference could be noted between it and that of the healthy quarter. However, 20 days later this quarter still retained a slight induration, determined by comparison with its neighbor. Cultures of streptococci

were obtained from the contents of the udder on the third, fourth and sixth days after the cow was inoculated. Fourteen weeks after inoculation the cow was slaughtered and her udder subjected to a bacteriologic examination.

At the same time that we were studying the character of this streptococcus, we were so fortunate as to obtain a sample of milk from a cow belonging to a dairy in which a number of others were also suffering simultaneously from mammitis. This infection had also appeared the previous year in the same herd, and a bacteriologic examination was made at the time by Dr. V. A. Moore,¹ to whom we are indebted for the sample examined by us. No cultural or morphologic characters were discovered by which this virulent streptococcus No. 2 could be differentiated from the one isolated by us from the healthy udder, which we designate as streptococcus No. 1. A rabbit was not visibly affected by the injection into the ear vein of $\frac{1}{2}$ cc. of a 24 bouillon culture of streptococcus No. 2. Nevertheless this culture injected into another quarter of the same cow, which we had previously inoculated, induced an attack of mammitis identical, clinically and bacteriologically, with the attack caused by the injection of streptococcus No. 1.

We also availed ourselves of an opportunity to study a streptococcus from a so-called sporadic case of mammitis occurring in a cow belonging to the Cornell University dairy. It will be remembered that it was in a cow belonging to this herd that we first noticed the persistence of streptococci in the healthy udder. This streptococcus could not be differentiated from the first two studied. It was not pathogenic to the rabbit, but induced mammitis in a third quarter of the udder of the dry cow which had already been inoculated in two other quarters with the other two streptococci. The symptoms and course of the mammitis induced were identical with the other two attacks.

The behavior of the udder of this dry cow in response to the injection of these three cultures from widely different sources presents some interesting and significant facts. It was somewhat surprising to observe mammitis in a quarter of the nonfunctioning gland induced by the injection of the streptococcus isolated from the healthy udder. Ten days later, after the inflammation had subsided, two diagonally opposite quarters were inoculated with the two streptococci obtained from the diseased udders. Nevertheless these cultures failed to induce a type of mammitis more severe than that caused by the first one. It is interesting to note that the attack first suffered did not confer immunity upon the other two quarters subsequently inoculated.

The presence of streptococci in the healthy udder has its parallels in the case of other organisms. Among these are: the Klebs-Loeffler bacterium, the organisms of pneumonia in man, and the septicæmia hæmorrhagica group causing pneumonia in the various animals, all of which may be harbored in the upper air passages of individuals ordinarily susceptible to the diseases produced by these organisms without themselves suffering from the disease. However, these organisms when communicated to a susceptible individual may produce the disease in question.

It is a matter of common observation that the use of a sterilized milking tube with aseptic precautions in cases of teat obstruction is liable to induce inflammation of the udder resembling that caused by streptococcus infection. One of us has observed a severe case of streptococcus mammitis induced in a milk-fever patient by the injection of potassium iodid solution into the udder, in spite of the fact that the udder was washed in 1:1,000 mercuric chlorid solution and that the milking tube had been boiled. In another case we have observed that a sterile milking tube used after carefully disinfecting the teat occasioned a mammitis associated with streptococci.

These observations concerning the presence of strep-

tococci in healthy udders and concerning the appearance of mammitis after slight irritation, as the careful passage of a sterile milking tube, suggest an interesting field for future investigation.

CONCLUSIONS.

The classification of streptococci is still in an unsettled state on account of the lack of reliable differential characters. At the present time the species of streptococci are largely designated by the lesions with which they are found associated, a fact which causes the greatest confusion in the study of this genus. It is noted with regret that many writers refer to streptococci rather loosely without apparently recognizing the necessity for a more specific nomenclature.

The common prevalence of mammitis in the cow constitutes an important source of streptococci in market milk. The insidious onset of the disease is responsible to some degree for the marketing of infected milk by dealers with innocent intentions. The results of the common method of milk handling in the stable deserves mention. The milk, directly after drawing, is usually strained into a 40-quart can, or even larger receptacle. The existence of udder inflammation is frequently first brought to notice by curd-like masses lodged on the strainer after the infected milk has been mixed with the wholesome milk. The ignorance or greed of the milker, or both, may prevent the rejection of the infected lot.

From the references available to us, it is evident that the medical profession regards the presence of streptococci in market milk as dangerous to public health.

The transition from the condition in which a few streptococci remain after a mild attack of mammitis to one in which streptococci are found in a healthy udder is a slight one. We have been unable to discover characters by which the streptococci found in the healthy udder can be differentiated from those associated with active inflammation of that gland.

We believe that recent investigations indicate that streptococci are found in the healthy udder more frequently than was formerly believed to be the case.

In order to understand the conditions under which these streptococci harbored in the healthy udder may become virulent will require a further study of the pathology of mammitis.

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TUBERCULOSIS OF BRONCHIAL GLANDS; TUBERCULIN; CHEST PAIN.¹

BY

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The extensive prevalence of tuberculosis in all civilized countries makes every question connected with its diagnosis and treatment of paramount importance. The germs of tuberculosis are ubiquitous and are probably inhaled by every member of every civilized community in the world, but susceptibility and immunity are the factors which determine the results of infection in individuals. Immunity is perhaps for the most part practically synonymous with the high resistive power incidental to a first class nutritional state, and this may be either natural or acquired. While it is of the utmost importance that this acquired immunity should exist in time to prevent the initial infection, yet it is not too late in many cases, probably in most cases, after such infection has occurred, provided that the primary local infection has not progressed too far. Herein lies the vital importance of early diagnosis. In order that this acquired immunity may be bestowed upon the tissues, the individual must have ample nutrition, outdoor life, and all other suitable auxiliaries early enough to limit the tuberculous process to its original site, and make of it a purely local and, to a large extent, innocuous process.

The difficulty of early diagnosis, together with our therapeutic impotency in the very late stages of the disease, constitute the *bête noir* of tuberculosis. In order to afford a reasonably fair prospect of limiting the disease by the measures just indicated it is desirable to make the diagnosis long before either physical signs or constitutional disturbances are available for diagnostic purposes. Tuberculin affords the only means of establishing a diagnosis sufficiently early to meet these indications. In spite of the demonstrations of its usefulness along this line it is neglected altogether too much in dealing with obscure cases of nutritional disease. In the last two or three years I have been making tuberculin injections for diagnostic purposes in a considerable proportion of such cases referred for diagnosis. Whenever the pathology is obscure and the case refractory from a therapeutic point of view, the advisability of using tuberculin to clear up the diagnosis is always considered, and is frequently resorted to. In quite a number of such cases it has given most gratifying results. The initial dose depends altogether, in my own practice, upon the character of the case. I rarely give so small a dose as 1 milligram,

¹ Read before a joint meeting of the Wabash and Miami County Medical Societies, at Peru, Ind., September 3, 1902.

and when the patient is robust and the evidences point to a circumscribed area of involvement, I begin with 5, 7, and exceptionally in cases in which time is important, 10 milligrams. On the other hand, if the constitutional disturbance is marked and the indications point to an extensive morbid process which may possibly be tuberculous, I then begin with 2 or 3 milligrams, repeating the injection if no decisive reaction is obtained in three or four days, increasing the dose as rapidly as circumstances seem to warrant, until the maximum dose of about 30 milligrams has been given, or somewhat less for patients who are not very strong, when, if no reaction has been obtained, tuberculosis is confidently excluded from the case. There is, in my opinion, absolutely no danger if the same discrimination and clinical judgment are used in dealing with this as with any other potent chemic factor which is to be introduced into the circulation. Care must be taken that successive doses are not sufficiently close together to produce immunity instead of reaction. The increase in dosage, however, can be made so rapidly in most cases as to make this extremely improbable. It is needless to say that active syphilitic disease should be excluded in estimating the value of the febrile reaction.

The other point to which I desire to call attention is the treatment of certain types of tuberculosis with tuberculin. During the initial stage which exists when this early diagnosis has been made, I believe tuberculin to have a positive value as a therapeutic agent. Later, when extensive disease has occurred, with the usual mixed infection, it is irrational, and can only add to the number of chemic poisons which the circulation has to dispose of. These points were clearly defined and insisted upon by Koch, but too generally ignored by his reckless, if not dangerous, followers.

The following case, the report of which is the principal motive of this paper, is presented because of its bearing on these points, and also as an illustration of a form of tuberculosis the early recognition of which is rare:

Mrs. E., aged 41, was first examined May 22, 1901. She complained of substernal pain together with dyspnea on slight exertion which had become quite extreme. The patient was mildly cyanotic at the time of her first visit to my office. Some of the paroxysms of dyspnea had been alarmingly severe, and were undoubtedly due to attacks of acute dilation of the heart, during which she felt as "though her chest would burst." There was a history of slight dyspnea on going up stairs for a period of ten or twelve years, indicating some chronic weakness of the heart.

Her bowels were obstinately constipated, never moving without laxatives. There was also marked distress after meals with extreme gaseous distention of the stomach, especially severe if she was careless with her diet.

Physical examination showed a very weak heart, vascular tension as estimated by Gaertner's tonometer being about 40 mm. of mercury. The heart sounds were correspondingly weak, and the left border of the heart extended about two inches too far to the left. The pulse was weak, and about 100 per minute. There was, however, no evidence of valvular incompetency, the heart weakness being apparently due to the atonic state of the myocardium.

The liver was considerably enlarged and easily palpable. Examination of the fasting stomach showed the usual debris of chronic gastritis, and the Ewald test-breakfast revealed the absence of free hydrochloric acid although there was a total acidity of 100 degrees. There was also severe chronic colitis with large quantities of mucus, epithelium, and leukocytes. Urinary examination: total quantity in twenty-four hours, 1,000 cc.; urea, 3%; chlorids, 0.4%; phosphates, .15%; no albumin or sugar but a considerable quantity of "indican."

On the basis of this examination the symptoms were supposed to be the result of myocardial atony and probable degeneration resulting from chronic toxemia of gastrointestinal origin, and the patient was placed upon a line of treatment based upon this diagnosis. She was given local stomach treatment, including intragastric faradism, together with colon lavage and faradism, and was, in addition, placed upon a course of Nauheim baths, which resulted in a cure in about three months so far as the principal features of the case were concerned. The heart gradually improved in tonicity (Gaertner's

tonometer indicating 100 mm. of mercury), and at the end of three months its area was nearly normal. The gastrointestinal atony had been largely overcome, stomach digestion was improved and the bowels were acting without laxatives a part of the time, which had not been the case for years. The dyspnea had also ceased to be troublesome. The patient could walk up stairs without any marked discomfort.

At this point, however, improvement ceased, and certain symptoms remained which at first were regarded as due to pressure of the dilated heart, but which now that the heart had practically resumed its normal relations and tonicity still persisted. These symptoms consisted for the most part of diffused pain in the upper part of the chest and a very slight irritative cough; and, in spite of the improvement in other respects, they seemed to grow progressively worse. Moreover, physical examination of the chest repeated again and again revealed nothing whatever by auscultation or on percussion so far as the lungs were concerned. The patient's temperature having been taken every three hours for a number of days and once or twice during the night was found to be strictly within the normal range. Tuberculosis was suspected and 4 milligrams of tuberculin were given at the first dose. No reaction ensued. At intervals of about three days the dose was increased by 5 milligrams each time until a little over 20 milligrams had been reached. The third dose produced a slight reaction and the fourth a temperature of 103°. As there was no other apparent explanation of the febrile reaction—lues being positively excluded—the existence of tuberculosis was assumed, and on the basis of the clinical history (slight dulness over bronchial glands and absence of pulmonary signs) was thought to be located in the bronchial glands, and probably limited to them.

Treatment by tuberculin injection was then instituted beginning with 0.05 milligram and carried out systematically over a period of about six weeks. It is unnecessary to enter into the details of dosage, but several times during the course of treatment, if the dose was increased a little too rapidly, fever ensued, thus further corroborating the primary diagnostic test. Guaiacol carbonate with a tonic, and suitable diet and hygiene, constituted the balance of the treatment. At the end of this time the symptoms had not improved materially, although the failure on the part of the system to react to large doses of tuberculin showed that immunity had been established. It was not long, however, before symptomatic improvement occurred, and now, eight or ten months after cessation of treatment, there is no indication of tuberculous disease. The chest pain and cough have disappeared. It is not supposed, of course, that the tuberculous glands have disappeared, or that they have ceased to be tuberculous, but they have probably become somewhat smaller (a change which Birch-Hirschfeld and others admit), and the tissues have become adjusted to their presence. They still constitute, however, so many foci of latent tuberculous disease which may remain latent or may become a source of metastatic infection, depending on circumstances; in other words, depending on whether the patient's resistive power is able to maintain the artificial immunization which was apparently produced by the tuberculin.

CHEST PAIN.

The diagnostic value of superficial chest pain in its relations to disease of the thoracic viscera may well arrest our attention for a moment. The incipient stage of many intrathoracic diseases is shrouded in obscurity. In some of them, notably those involving the contents of the general mediastinal space, there often exists pain in the distribution of the intercostal nerves. Such pains are so commonly the expression of diathetic states that they are too likely to be summarily dismissed with that label attached. That this is often an error, and a costly one to both patients and physician, needs to be empha-

sized. The earliest manifestation of a serious intrathoracic lesion may consist of a pain of this character, and if to this we add the possibility, or even probability, of associated disturbances, the difficulty of assigning such pains to their proper source becomes sufficiently apparent.

The "expression" of a pain at a considerable distance from the irritative lesion which causes it is a familiar fact in the physiology of disease. A detailed consideration of these phenomena would lead me too far, and I will only remark that the "transfer" may take place along the direct line of a nerve trunk, as in the knee pain of hip-joint disease, or in commissural paths in the spinal cord or elsewhere, as occurs in the superficially referred pain of visceral disease.

The accompanying diagram (Fig. 1) is intended to schematically express the neural paths through which such painful impressions could be referred to the spinal nerve routes and thence to the spinal cord and the sensory areas which are represented in it. There are perhaps other relations of the sympathetic and vagus of equal interest and importance with those in the diagram, but these are sufficient for our purpose, and, besides, have a special bearing upon the case herein reported. It will be seen that the various nerve filaments passing between the structures at the root of the

irritative cough, pain, disturbances of cardiac rhythm, etc. The pain of cardiac disease, which we know is not located in the heart but in the distribution of superficial sensory nerves, is explained somewhat similarly by Gibson.

It is not at all surprising that the bronchial glands should be the primary seat of tuberculosis. The fact is

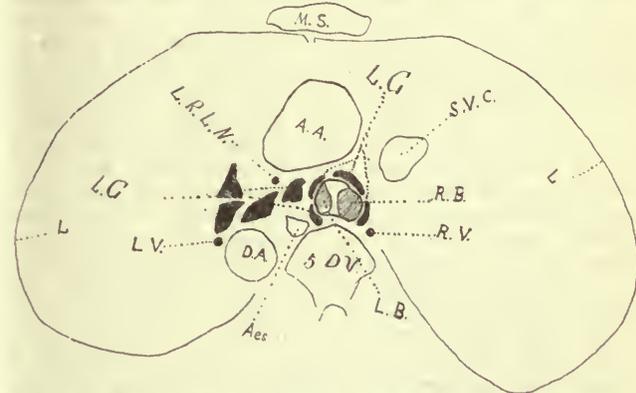


Fig. 2.—Modified from Symington's cross section of human body, showing relations of bronchial, principal neural and vascular trunks, and lymphatic structures at level of bifurcation of trachea. M.S., Manubrium sterni. L., General outline of lungs. A.A., Arch of aorta. D.A., Descending aorta. Es., Esophagus. R.B., Right bronchus. L.B., Left bronchus. R.V., Right vagus. L.V., Left vagus. L.R.L.N., Left recurrent laryngeal nerve. L.G., Lymphatic glands. (All irregular heavily shaded areas, not otherwise designated, are lymphatic glands.)

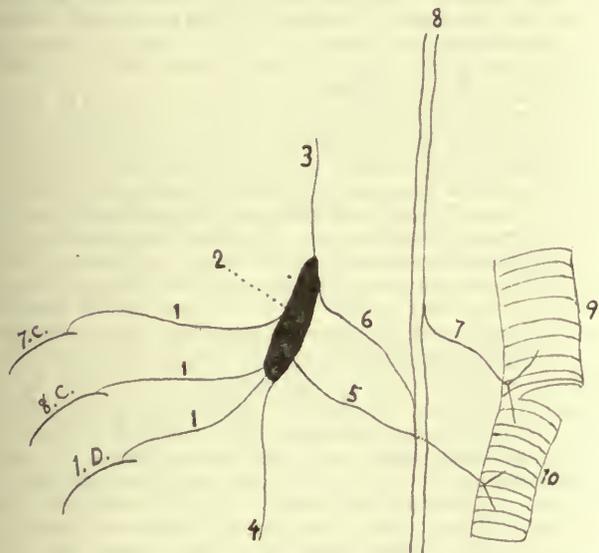


Fig. 1.—Diagram illustrating the neural relations of bronchi, vagus nerve, cervical sympathetic, and spinal cord. 1, 1, 1, Filaments connecting cervical sympathetic with spinal cord segments. 2, Cervical sympathetic ganglion. 3, 4, Filaments connecting ganglion with others above and below. 5, Sympathetic fibers to bronchi. 6, Fibers connecting sympathetic with vagus. 7, Vagus fibers to bronchi. 8, Pneumogastric nerve. 9, Trachea. 10, Right bronchus.

lungs, and the vagus and sympathetic are related to the anterior roots of the spinal nerves by filaments from the sympathetic ganglion. Irritative lesions implicating the visceral nerve fibers referred to may, and probably do, produce impressions not primarily painful in character, but passing through the spinal cord they are transmitted into painful impressions, which, in accordance with well established physiologic laws, are referred to the sensory areas, which find their representation in the segment of the cord thus related.

The next diagram (Fig. 2), modified from Quain (Symington), shows the relation of the various structures concerned in the case reported, by a transverse section of the thorax at the level of the bifurcation of the trachea. It will be seen at a glance that enlargement of the bronchial and neighboring lymphatic glands can easily produce in the nerve trunks referred to irritative or paralytic phenomena, either by direct pressure upon them or indirectly by encroachment upon the bronchial walls, hence

well known that in adults they are commonly found blackened by the interception of carbonaceous matter which is taken up by bronchial lymphatics and carried to the glands. Specific infection can reach these glands in precisely the same manner, and probably does so very much more frequently than is recognized. Their close relationship to other mediastinal lymphatic structures makes extension of the disease easy.

It must always be difficult to recognize such processes unless they have involved some of the structures to which attention has been called in such a way as to produce symptoms that are somewhat characteristic. This, however, is very apt to occur in the progress of the disease. In one case reported by Olliver and Ranvier the vagus and recurrent laryngeal nerves were involved in a mass of glands weighing 700 grams. The early diagnosis of this condition is of the utmost importance, and my principal object in reporting the case is to call attention to the early symptoms which may lead to their recognition and proper treatment.

THE NERVOUS CARDIAC SYMPTOMS DUE TO HIGH ALTITUDES.¹

BY
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It was my privilege last year to present the subject of the Influence of Climate upon Nervous Diseases Considered from a Physiological Standpoint,² in continuation of a series of studies begun during extended travel through New England, Canada and the West, which observations were first brought together in a paper entitled The Climatology of Neurasthenia³ and presented before the Medical Society of the State of Pennsylvania, September, 1900. It has been satisfactory to see that the

¹Read before the American Climatological Association, June 9, 1902, at Los Angeles, California.
²New York Medical Journal, October 5, 1901, and Transactions of the American Climatological Association, Vol. 17.
³Medical News, January, 1901, and Transactions of the Pennsylvania State Medical Society, 1900.

line of thought presented has met some approval by the profession. The interest of the subject is only surpassed by the difficulty in determining accurate scientific facts. Nevertheless we feel that certain physical conditions, as regards atmospheric pressure, winds, altitude, etc., do influence materially the normal human body and very much more pronouncedly the sufferer from disease, particularly of the nervous system, functional or organic.

The Effect of Altitude Upon the Heart in Normal People.—The physiology of the normal person is so nicely adjusted and resilient, so to speak, that changes of altitude in healthful countries when not made suddenly and to too great height, say up to 5,280 feet, about that of Denver, will certainly not cause the least disturbance. I have noted this from personal experience and from that of many others. Even at the altitude of Las Vegas, New Mexico, which is 6,398 feet above sea level, I have known normal people who experienced no discomfort whatever. At the altitude of Pike's Peak, over 10,000 feet, we all know that many do experience disagreeable sensations and palpitation of the heart. However, as we ascend, the increasing altitude tends to produce a more easily excitable heart in normal persons, owing in a measure to the increased peripheral circulation through the lessened vis-a-fronte, and this continued through generations may be the cause of dwarfism as shown in the Thibet men, probably on account of the fact that the important organs of body metabolism, such as the liver, are less constantly kept flushed with fresh blood and that therefore the important chemic changes necessary for bodily growth do not occur. *A priori*, it seems patent that the best type of physique will be produced by individuals whose ancestors have for many generations lived by hard manual work associated with acute mental calculations and on moderately high plains as of our Western States at the foothills of the Rocky Mountains. The theory recently promulgated by Loeb and Matthews tending to prove an electric energy as nerve force, if found to be correct, may awaken renewed investigation toward solution of this perennially interesting problem of functional nervous disease and consequent functionally perverted action of the heart herein considered.

The Effect of Altitude Upon the Heart in Functional Nervous Disease.—While the successful treatment of disease of the mind and nervous system depends so much upon remedial measures to which drugs are important adjuncts, it is likewise true that changes of season, climate, etc., are fundamental conditions controlling many diseases. In a consideration of possible affection of the heart due to altitude, we must bear in mind at the outset that the "nervous heart" so-called is entirely dependent upon the condition of the nervous system; *e. g.*, in neurasthenia the rapid irritable heart is a frequent accompaniment. As this form of cardiac disturbance frequently occurs in nervous exhaustion, it follows that the favorable or unfavorable effect of altitude in disease of the mind and nervous system, especially in this particular disease, neurasthenia, will also be coincident with an effect upon the disturbed heart. "It is almost axiomatic that an altitude of over 2,000 feet is unsuitable for the neurasthenically disposed or convalescent patient. Any very 'stimulating' climate should be avoided. Other conditions to be avoided are districts menaced by high winds and frequent fogs; cloudy saturated atmospheres with but slight movements of air current, low country (sea level) with continuous nonvarying although moderate heat, as where the effect of the Gulf Stream is strongly felt. Thus the Bermuda Islands and Florida are enervating localities. Ideal conditions for the neurasthenic include sea-air in a well-wooded country far enough from the coast to avoid its fogs. A sea voyage is, as a rule, an excellent preliminary to other climatic measures. Provided the voyage be not stormy, it acts both physically and psychically in soothing the nervous system. In order to obtain the full benefit of correct climatic conditions

the patient must have good food. Without this important adjunct the desirable climatic change may be entirely defeated in its effect on the patient."¹

A paper on the Blood Count in High Altitudes, by Dr. W. A. Campbell, assisted by Dr. H. W. Hoagland, read before the American Climatological Association at Niagara Falls, gives some further clue to the solution of the effects of high altitudes upon the cardiovascular system, and as stated in the discussion of that paper I still believe that the sensible perspiration carrying off much of the waste products of the body produces great benefit to nervous individuals when autointoxication is coexistent. Also that at high altitudes increased sensible and insensible perspiration occurs according as the air is moist or dry, and that as a rule, therefore, cases of idiopathic nervousness or essential neurasthenia will do better at the lower altitudes suggested. The decrease of atmospheric pressure at altitudes above 6,000 feet certainly does in some as yet unknown way tend to weaken the inhibitory ganglions of the cardiac muscle. Yet it is not fair either to compare physical experiments with actual facts as determined by clinical observation in the effect of heat loss, since the human body is entirely different from any inorganic mass; *e. g.*, if in a phial of water it is found that the liquid loss is more rapid at sea level, then the human body will likewise lose; the element of complete metabolism is so interwoven with health that the effect of height with its associated winds and temperature will prove of value only as they are constant and active agents toward aiding better internal absorption of food products.

Nor does it necessarily follow that an irritable heart which the patient describes to us will ultimately prove to be a truly irritable heart by the *continuance* of the same climatic conditions, among them altitude, which latter seems to be and often is the etiologic factor for this condition. In some cases it may be that this disagreeable affection of the cardiac muscle will have to be tolerated until the patient can come to a fundamental condition of otherwise good nervous health. I have a case at the present time, that of a young lady suffering from hysteroneurasthenia with a disagreeable and at times dangerous herpetic eruption upon the vocal bands, in which Dr. E. B. Gleason excluded any organic disease of the throat, and in which the rest treatment associated with mental therapeutics had greatly bettered the condition. We sent the patient to Las Cruces, New Mexico, at an altitude of 3,730 feet above sea level, where an irritable condition of the normal heart muscle was shown to have been produced within a week; although her general nervous health, it may be stated, was definitely improved, probably due to the dryness of the atmosphere itself. A letter received May 26, 1902, gives a better report, namely, that the heart symptom has abated, the condition of general nervousness is much improved and the attacks of laryngismus almost ceased. It took about ten weeks for the young lady to become accustomed to the great physiologic change in her system, and I advised her to continue for a year or so in the climate and altitude which seem to be doing her such great good. An analysis of this case would seem to justify the conclusion that the neurasthenic condition was an *essential* one, *i. e.*, not due to any tangible toxic or other cause, and that the altitude of over 3,000 feet which as I have stated is not as a rule good for the nervous individual or his cardiac symptomatology, must have in this patient through the dry atmosphere favored better metabolism and lessened the expenditure of nerve energy in that direction. It is true, however, that in a simple case of neurasthenia with irritable heart, a patient will usually experience considerable palpitation and cardiac distress when ascending above 2,000 feet; but if high winds do not prevail the patient will be ultimately benefited if the general nutri-

¹ Climatology of Neurasthenia, Med. News, January, 1901.

tion improves as shown by gain in weight taken in actual week-to-week records.

In hysteria alone, the effect on the heart will depend therefore very much upon the said condition of tendency toward normal metabolism produced at high, dry altitudes. It has been my experience in partial proof of this that among people living at moderate heights in the coast region or mountains in the north-western United States, that a moderate altitude of say 1,000 to 1,500 feet has more quickly and permanently produced palpitation and tachycardia, owing undoubtedly to less active metabolism in this moist climate. In comparison, at an altitude of 2,000 feet, as at Tim Pond, Franklin county, Maine, the dryness of the climate produces the better effect in nutrition, and nervous people there do not experience any cardiac distress; while the same altitude in the Adirondacks associated with greater moisture is unfavorable to nervous disease and the irritability of the heart action which I have found to be a prominent feature in the cases studied in the Empire State. The pine regions of Georgia and North Carolina back from the coast and at an altitude of somewhat less than 2,000 feet do not cause any nervous cardiac symptoms; while the damp, low country in Florida will produce both mental distress and at least a subjective feeling of cardiac weakness.

Effect of Altitude Upon the Heart in Organic Disease of the Nervous System.—The affection of the heart in organic diseases will depend upon the site of the lesion in the brain or cord, with reflex implication of the cardiac muscle or endocardium in association. Taking first the sclerotic diseases of the cord, it is certain that the heart will be more profoundly disturbed in these diseases, particularly in ascending scleroses, such as in amyotrophic lateral sclerosis, glossolabiolaryngeal paralysis, or even in cases of chronic multiple neuritis; in which latter, by continuity of the inflammatory process, the pneumogastric or phrenic nerves may be susceptible to the continuance of inflammation to them, and therefore pneumocardiac control.

Any change of altitude, therefore, should be considered very carefully in relation to the rhythm of the heart, absence of cardiac disease, etc. With a normal heart and degeneration of the lower cord as in tabes, a moderate altitude, as 2,000 feet, will do good only in relieving the heart from overwork, through the increased peripheral circulation; therefore, in any organic disease of the brain or cord, in my opinion, high altitudes should be avoided. It seems to me that altitude will have a favorable effect on the heart in cases of hypertrophy when due to resistance in the course of the circulation peripheral to the capillaries, as in Raynaud's disease and angioneurotic edema. In disease of the endocardium, as in valvular disease without loss of compensation, moderate altitude should be insisted upon. In cases in which there is loss of compensation, as shown by edema, chronic gastritis, renal congestion, etc., an altitude of 2,500 feet or more in a dry climate will undoubtedly prove of value in the vast majority of cases. Cyanosis, therefore, is not always a counterindication to moderate altitudes.

It is not necessary to urge here the importance of the hygienic bearing of the case of heart disease in any altitude, and especially should this be kept in mind by the physician when the patient changes his environment. Emphysema, particularly if associated with asthma, will often be benefited by a high dry altitude, since the interchange of oxygen by the more rapid respiration induced will the better oxygenate the blood and in this way relieve the over-acting heart muscle.

To Prevent Child Insurance.—A bill to be introduced in the New York Legislature in the near future prohibits the insurance of children under 16. Statistics have been gathered showing why such a bill should be enacted, and it is believed favorable action will be taken.

REPORT OF 250 ADDITIONAL CASES IN WHICH NITROUS OXID WAS USED ALONE OR AS A PRELIMINARY TO ETHER OR CHLOROFORM ANESTHESIA.

BY
DAVID H. GALLOWAY, M.D.,
of Chicago

Over a year ago I reported to the Chicago Medical Society 50 cases in which nitrous oxid was used as a preliminary to ether anesthesia. Since that report I have used this gas in 250 cases and can speak with greater confidence of its advantages. My experience with it has been so favorable that I think writers on the subject have underestimated rather than overestimated its value. If found, the ideal anesthetic will be devoid of danger to the patient; will produce profound anesthesia without producing any unpleasant sensations to the patient in the administration, and will cause no bad after effects. Nitrous oxid is not an ideal anesthetic, and I do not believe such an anesthetic will ever be discovered, but it approaches these conditions more nearly than any other drug known at present. There has been one death from nitrous oxid in about 600,000 administrations, this indicating that it is about 100 times safer than ether. It is my opinion also that ether is safer when preceded by this gas, for then the complications which arise at the beginning of ether anesthesia are practically absent. The question of safety is of course the paramount one, but there are other things to be said in its favor: 1. Nearly all patients have heard of "gas" and regard its inhalation as having little if any danger; they are therefore less apprehensive when taking it. This attitude of mind is itself a powerful factor for safety. 2. It produces no distressing symptoms and is so quick in its action that there is little time for the patient to become frightened after the administration is begun, and there is no delay in getting ready for the operation. This element of time is particularly valuable in clinics where under the method commonly in vogue the second patient is anesthetized almost as soon as the operation is well started on the first. If, as often happens, the first operation is unexpectedly prolonged the second patient is kept anesthetized an unnecessarily long time. 3. Less anesthetic is used and therefore recovery takes place quicker and the after effects are correspondingly less.

The time required to prepare the patients for operation in these 250 cases was as follows:

30 seconds.....	1 case
45 ".....	2 cases
50 ".....	1 case
1 minute.....	10 cases
1 1/4 minutes.....	3 "
1 1/2 ".....	34 "
1 3/4 ".....	3 "
2 ".....	126 "
2 1/4 ".....	22 "
2 1/2 ".....	2 "
2 3/4 ".....	36 "
3 ".....	1 case
3 1/2 ".....	3 cases
4 ".....	3 "
5 ".....	1 case
10 ".....	1 "
11 ".....	1 "
13 ".....	1 "

The average time being 2 1/4 minutes.

In no case, when ether followed, was gas continued for more than three minutes. In the case requiring 10 minutes the patient had a heavy beard, and this probably admitted air under the inhaler sufficient to produce the excitement and struggle during which the patient partly revived and had to be anesthetized with ether as if no gas had been used.

In one case it seemed impossible to relax the patient with ether, though there was no outcry or struggle, and after trying for 12 minutes I changed to chloroform with the result that anesthesia was quickly completed. In one case the patient, a woman, knocked off the inhaler before she was unconscious and it required 13 minutes to get her completely anesthetized with ether.

The calls for these 250 anesthetics were from 44 operators and I have demonstrated the method in 19 hospitals in Chicago.

When an operator has experienced or even witnessed the distressing effects which are often produced when a struggling patient is being anesthetized with ether, particularly if the patient is being "stified," as so many anesthetizers do it, and then has seen the quick and quiet way in which gas does its work, one would expect that he would never again allow ether to be used alone in his practice when it was possible to get gas.

I believe it was Dr. Joseph Price who defined an anesthetic as "an agent with which the patient is carried to the edge of death and held there while the surgeon does his work." To be carried to the edge of death is sufficiently terrifying at best and no pains should be spared to rob the process of as much of this terror as possible. Nitrous oxid is a potent agent for cutting short if not abolishing this agony.

I cannot refrain from carrying Dr. Price's figure of speech further and urging that the anesthetizer should not hold the patient too far over "the edge of death" by the use of an overwhelming amount of the anesthetic. He should not relax his attention or vigilance an instant lest the patient slip from his grasp and fall into the abyss from which no power can rescue him. Furthermore the patient should not be brought into this perilous position until the operator is ready to proceed with the operation and he should not be maintained there one minute longer than is necessary to perform the operation expeditiously. Every minute the anesthesia is prolonged the danger increases both from the immediate and the remote effects. I do not consider it justifiable for the operator materially to delay or suspend the operation, after the patient is anesthetized, in order to lecture to a class of students. The lecture would be just as impressive if delivered on a previous or later occasion. I was once obliged to keep an old man lying on a wet table and covered with wet towels, under the influence of ether, for 25 minutes while the operator talked to a class of students about the operation to be performed.

If the anesthetizer could be made to realize that he is holding a fellow being in a slender grasp over the brink of a precipice down which he may be hurled by any lapse of attention or slip of judgment, surely he would have little heart for assumed or real indifference or for idle gossip with those around him.

CARE OF THE EYES OF SCHOOL CHILDREN.

BY

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The most potent factor in preventive medicine is the education of the public. This, of course, must be done by the medical man, but along certain lines it seems that the medical profession itself must first be educated before its members can or will perform their duty to society.

I refer particularly to the much-discussed subject of the eyes, more especially those of school children.

When we consider the fact that Risley found in the schools of Philadelphia but 11% of children with normal vision, is it surprising that specialists on diseases of the eye look with disfavor on the inattention and even ignorance of the general practitioner regarding this subject? Exhaustive papers are read by able men before our various society sections, but the topic is so broad and so manifestly within the sphere of the specialist that reports are seldom read by the busy general practitioner, to whom the topic is of so little interest.

Since an appeal to the public by the specialist would be taken as the act of one with an ulterior motive, it

becomes his duty to excite the interest of those who are in the best position to bring these facts before the public, viz., the medical profession in general and the teachers in our public schools.

Not only should every opportunity be taken to address the profession, but effort should be made to obtain cooperation of boards of education, so that lectures setting forth means of detecting ocular disorders may be given to the teachers at the beginning of each school year. In many of our larger cities where school inspection is in force, little or no attention is paid to the condition of eyes or ears, but the physician's entire duty seems to be to discover the appearance of acute infectious diseases; and while this is absolutely essential, he should go further. One unable to distinguish between trachoma and ocular infection due to eyestrain should never be made a medical inspector of schools.

There are about 18,000,000 boys and girls of all ages in the various schools of this country today. In two or three decades the affairs of the nation will be administered very largely by these same pupils. The time is rapidly approaching when the tradesman and mechanic will be required to have more than a "common school" education. Many a bright, energetic young man has found when his opportunity for promotion presented that he was unable to fill the position offered him because of insufficient education. Why did he leave school at an early age to take employment in some shop or factory, or behind the counter? Simply because he did not seem to take to his books. Other children in the family got along rapidly in school, but he just could not learn. It made his head ache to study, and when he tried to study at night it made him so sleepy that he had to give up and go to bed. So much concentration being required to fix his mind on his book, his interest could be maintained for a short time only. Soon his mind wandered to the out-of-door sports in which he excelled, and when recitation came he was unprepared. To the oculist is not this the typical picture of a case of uncorrected hyperopia or astigmatism? The same may be said of girls in this sphere of life, but as much less education is required of them, it is passed unnoticed.

These are cases of facultative hyperopia in which little or no danger is done to the organ of vision, but we find even in this class cases of intractable headache, and neurasthenics of the most pronounced type. Of cases of hyperopia in which convergent strabismus ensues, and astigmatism of high degree is left uncorrected until puberty or later, resulting in permanent amblyopia, little need be said, as the resulting condition is too manifest to necessitate further comment.

While the pernicious results of uncorrected hyperopia are not to be gainsaid, how much more deplorable are the results of myopia. While in myopia asthenopia is not so often present as in hyperopia, how much more terrible are its ravages when it results in divergent strabismus, nystagmus, keratoconus, posterior staphyloma, detachment of the retina, intraocular hemorrhage or cataract.

Unfortunately moderate grades of myopia in the young often cause little inconvenience. Never having had perfect vision for distance the visual acuity possessed by others is not realized, and they go on for years choosing the occupations, recreations, and pleasures to which their short sight best adapts them.

Myopes who reach adult life never having worn correcting lenses seldom take kindly to glasses. When given correction their sense of orientation is impaired, their undeveloped ciliary muscle prevents working at short distances with comfort, and in many cases I have seen glasses thrown aside even when the patient was aware of the danger involved in so doing. The time for the correction of myopia is before the tenth year, and in many cases much earlier. If at the beginning of school life these congenital anomalies of refraction could be carefully corrected by suitable glasses we should hear

much less complaint of the harmful influence of school upon the eyesight. No organ of the body is so easily injured by inappropriate or excessive work, and no organ has less power of readjustment.

M. Le Roux, a French lecturer, speaking of his American audiences, says: "I had but one regret as I looked down into their faces, I saw too many spectacles. They have worked so hard that their sight is failing. They should not let their love for knowledge impair their vision." In comment one of our leading medical editors, himself an ophthalmologist of international reputation, says:

Americans have not worked their eyes harder than other nations, their love for knowledge has not impaired their vision, and their sight is not failing. *Tout au contraire* our eyes are far less diseased than those of Europeans, who have yet to learn that proper spectacles prevent more serious ocular and also systemic disease. Our people have good leather shoes instead of going barefoot or wearing sabots, but the fact is not proof that our feet are weaker or more diseased than those of the French peasant. . . . They also have secured scientific care of the teeth, but that does not prove that carious teeth are superior to filled ones or that no teeth are preferable to artificial ones.

Unfortunately the opinion prevails to a large extent among the laity, and I blush to say to a considerable degree in the medical profession, that the eyes of the present generation are not so good as those of former generations; and what is still more deplorable, that the use of glasses is excessive, and perhaps we oculists are in a measure responsible for this last named state of affairs.

Why a young person with a hyperopia of 1.00 D. or less, or a hyperopic astigmatism of .50 D. or less, who suffers from asthenopia only while at his books should be burdened with glasses for constant use during the balance of his life is beyond my comprehension. While I am aware that many oculists of reputation and ability insist on the full correction of any and all errors of refraction manifest during cycloplegia, I am constrained to say most emphatically that many cases of refractive error of moderate grade need be given correction for close work only. Many patients when chided for delay in seeking relief reply: "Well, doctor, every one who consults an oculist is given glasses, and I feared you would give me glasses." Is this a desirable state of affairs?

A young adult under stress of college life or similar ocular strain breaks down with accommodative asthenopia. He consults an oculist, who finding a moderate grade of hyperopic astigmatism consigns him to the use of glasses for the balance of his life. The patient completes his work which has been the exciting cause, and then leading a less strenuous life and finding the glasses disagreeable, throws them aside and goes for years never feeling the need of them. Is it surprising that his confidence in the oculist is impaired, or that when some other member of his family (who perhaps has absolute need of glasses) is advised to wear them that the advice goes unheeded.

Hotz, of Chicago, in a recent communication calls attention to the misuse of glasses, their being prescribed in cases of asthenopia with associated blepharitis in which the asthenopia is entirely due to the pathologic condition of the conjunctiva and lids. In the minds of most public school teachers glasses are the panacea for all ocular disorders, and many children are sent by their parents to incompetent opticians, by whom glasses are given when local treatment is all that is required.

In the recent investigations carried out by the Board of Health of New York, two public schools taken at random showed 15.5% and 19.2% respectively of communicable eye diseases. While this percentage may seem large, let us console ourselves with the thought that this class of cases has been reduced 47% during the past 30 years, largely because of improved sanitation and medical school inspection.

It is my firm belief that there should be an examina-

tion of the eyes of all children applying for admission to the public schools, and the following facts ascertained, so far as possible, from each individual pupil:

1. Does the child fail to read a majority of the letters on the XX (20) line of the Snellen test types with either eye?

2. Do the eyes and head habitually grow weary and painful after study?

3. Are the lids or eyes habitually inflamed?

4. Is the child cross-eyed, or do the eyes diverge?

Upon an affirmative answer to any of these questions a letter of warning should be sent to the parents.

SPECIAL ARTICLES

VITAL STATISTICS: A PLEA FOR ACTUARIAL ADMINISTRATION AND CONTROL OF THE GREAT RESOURCES OF PREVENTIVE MEDICINE.

BY

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of Baltimore, Md.

[Continued from page 223.]

MUNICIPAL REGISTRATION.

In respect that the practice of registration in cities is more general and is rapidly spreading, and that municipal registration ordinances are usually effective, this phase of the subject is more encouraging. There is nevertheless somewhat to criticize. The worst faults of State registration grow out of neglect, but registration in cities is subject to positive abuses. The extreme diversity of methods and practice which we noted in State registration is less apparent in city registration, but in the mathematics of municipal registration we find vagaries of every sort, insomuch that the statistics of hardly two first class cities in the country are comparable, and many cities cannot safely compare their own records for different periods.

Popular interest in the vital statistics of cities has grown so far as to demand the publication in the daily press of yearly, monthly, and even weekly summaries, bringing their so-called rates into comparison with the similar statements of other cities, and with their own earlier statements. The confiding public assumes that the figures are as trustworthy as the market reports. The uninitiated citizen cannot be expected to know that the deathrate is affected by several ever-active and variable factors besides the mortality; but he knows how to calculate interest, and he believes that the deathrate is obtained by counting the deaths in a given period and dividing their sum by the population for the same period. It is a pity to disturb this ingenuous faith in municipal arithmetic, but the people ought to know how the deathrates are obtained. The city registrar's arithmetic is seldom so simple. His permutations and combinations are perhaps not usually dishonest in intent, but the results are nevertheless misleading. If one will examine the death certificate of a city it will almost invariably be found that more space is devoted to the place of death than to any other single item. Certain apparently subsidiary data are required under this head, *e. g.*, "Place of former or usual residence;" "How long resident at place of death;" "If in a hospital or institution, give its name." These are proper inquiries. It is quite right that a great city should keep a separate account of the deaths which do not diminish her population, and almost all city registrars count off the deaths of transient visitors and of those who are brought to the city for medical treatment. There is no agreement among city registrars, and a wide diversity of practice is followed in solving the question between resident and nonresident. At the pleasure of the city registrar one may be counted out of the death register if he die within a week, or a month, or a year after coming into town. In a true registration area, where every death must be counted somewhere, the solution of this question may be effected with fairness and without appreciable

vitiation of local statistics; for the proposal to exclude a death from record at one place invites consent to admit it to record at another. But in a nonregistration area there are not two parties to the question.

When, on the other hand, bona fide residents of the city die outside the corporate limits, what shall become of the record? If the death happens in a nonregistration area and the body is not brought into the city, the occurrence never comes to the knowledge of the city registrar at all. If the body is brought into the city, the certificate is presented to the city registrar and the death may or may not go into the home mortality account, as the registrar decides. If he counts off the intra-urban deaths of nonresidents he should, by parity of reasoning, count in the extraurban deaths of those who at the time of death were component units of the population. But under existing conditions the city registrar's own sense of honesty must direct him in this course. The matter lies in his own undivided confidence.

Most large cities maintain outside their corporate limits large institutions where dependent citizens are cared for, and among them a considerable annual mortality occurs. These extraurban deaths enter into the mortality accounts of some cities, but is that the practice in all large cities? One looks in vain through the health reports for information on this point.

But the number of the dead is only one factor of the death-rate. The population is the other, and the modes of estimating population for intercensal years are likewise subject to curious variations. The statistical reports rarely contain a word of explanation on the subject. Some registrars take the difference between the results of the last two decennial enumerations and find its ratio to the population of the earlier year. One-tenth of it is said to be the ratio of annual increase over the population at the beginning of the new decennium. The assumption that the ratio of the last completed decennium will govern is perhaps reasonable, but the yearly ratio is not one-tenth of the decennial ratio, for the increment is compounded each year. One should find, therefore, what rate will yield the ten-year increment at compound interest, and apply this each year to his new principal.

Another plan of estimating the population is to multiply the number of children attending school in each successive year by a constant factor. In the same way the number of inhabited houses is sometimes used as a basis, the other factor being the average number of persons per house as determined by the preceding census. Again, the number of registered voters is multiplied by an assumed factor, the result being taken as the population for the year. In Southern cities the voters are divided according to color, the number of colored voters being multiplied by a higher coefficient than is applied to the white voters. In conversation with city registrars I have learned that there are yet more curious modes of arriving at estimates of population; *e. g.*, to ask the publisher of a city directory or the inquiry department of a daily newspaper.

The first named method is the best, but every chance to correct it or to test it should be availed of, and when a new census shows that the estimates for intervening years were too large or too small, the corrections should be applied to all the ratios which are brought forward from year to year for purposes of comparison. It very seldom happens that official estimates of the population of large cities are too small, and the federal census has once or twice been almost persuaded that its own enumerations have been too large.

From what we have said it seems clear that one of the factors of a deathrate is never exactly ascertainable and that the other factor is not the sum total of the deaths that occur in the population or in the political bounds of a city, but is a derivative of this sum total. Moreover it is derived not according to a fixed rule, but by various methods at the unchallenged and often inconstant discretion of individual registrars.

There is not in the country a single city which has not two mortality lists for every year, and a few, very few, of them publish an account of both lists. That an account of the deaths which do not enter into the rates is so seldom published seems rather significant. The people, who trust too much in death-rates, and whose interest in the subject is far too little enlightened, have a right to know how the factors of the deathrate are

determined, and what rate of increment is assumed in the population, and what proportion of the deaths happening in the geographic limits of the city and among its enumerated citizens has been considered to represent the net mortality justly chargeable upon the population. If the people have the right to know so much, still more are the 400 municipal registration offices entitled to this information, for if units of weight, volume and value should be familiar and of common use, no less should the balance sheet of life and death conform to a sealed standard.

Of the many cities whose published statements concerning mortality stagger one's faith, not all, possibly, are grossly erroneous, but whether right or wrong, all ought to display the elements of their computations. In every American city of 100,000 population whose claimed or imputed deathrate is below 17 per 1,000, the rate has been obtained by some avoidable error such as (*a*) discounting too heavily the gross registration deaths on account of intraurban deaths of nonresidents; or (*b*) failure to debit the mortality account with the extraurban deaths of residents; or (*c*) overestimating the population; or (*d*) combining all or any two of the foregoing errors.

Or else the deathrate is explained by (*e*) a peculiar age distribution which reduces the influence of infancy or of old age, or of both upon the gross mortality. The city may be too young to have acquired a considerable population above 60 or normal marriage and birth rates; or (*f*) with a normal sex distribution, the birthrate may be excessively low, the population being recruited chiefly by the immigration of young unmarried adults; or (*g*) a continuous high birthrate may have given the city an unusual proportion of population between 10 and 40 years of age; or (*h*) the low general deathrate may be due in a normal population to an extremely light infant mortality.

It is just possible that one or two large municipalities may owe a deathrate of 17 per 1,000 to natural advantages plus good sanitary administration, but without a single probable exception all deathrates below 17 per 1,000, in cities 40 years or older, are delusions, and a percentage of them are statistical fictions.

In one or two large cities the official registrars have such skill in marshaling figures to prove what is untrue that one might infer equal ability to demonstrate the truth. But such an inference is not necessarily correct, for in vital statistics it is peculiarly difficult to avoid beginning an inquiry with a definite idea as to what the figures will show. Vital data are so complex and variable, and the processes are subject to so many corrections and interpolations that a rigid conscience and inflexible logic will hardly keep one true to the mathematical line. Statistics are to many minds highly intoxicating, and some registrars seem to be habitually exhilarated.

REGISTRATION OF BIRTHS.

If we have so far made out our case for the complete, uniform, and systematic registrations of deaths, and for temperate and logical utilization of the accumulated data, we must at the same time have shown that statistics of death alone will not under any circumstances suffice to indicate the sanitary or vital conditions of the people, for all the ratios derived from the death returns vary from time to time and from place to place, in obedience to influences which have little or nothing to do with sanitary administration. To analyze death records according to cause, age, sex, season, locality, race, occupation, social condition, and to apply the numerical results to a living population which has not undergone a similar analysis for the purpose of ascertaining the vital conditions of the people, is about as logical as if one should undertake to estimate the motive power of a great railroad system by a complete and exhaustive examination of the scrap heap. Without knowledge of the sources of population, the mortality statistics can never be made to yield the information which the sanitarian most needs and which, if one may judge by the popular appetite for statistical hokey pokey, the people most demand. This does not belittle the very large independent value of mortality statistics, but emphasizes their superior importance as an articulated part of a comprehensive and logical plan of accounting in the vast business which we call government. Public hygiene has long outgrown the sanitary bookkeeper; its needs exceed the capacity of the expert accountant, and its affairs can only be

reduced to precise order by the highly developed skill and perfect grasp of the actuary.

All the rates derived from the mortality returns are properly called crude ratios, and should be corrected by all the determinable causes of variation. It is an idle saying that the variable minor factors neutralize each other. Some sources of error may be negligible, but none should, without test, be neglected. Of first importance in this connection is the birth-rate, which is not in any degree less important than the death-rate. The private interest of the citizen in registration of births is indeed superior to his interest in registration of deaths, for a great proportion of his privileges and immunities, rights and duties, turning upon the question of his age and his parentage, are definitely conserved by the registration of his birth.

The defectiveness of American statistics of birth is so great that outside of New England probably not a State or city can determine a fairly approximate birthrate for any year. Many States and all the registration cities have more or less ineffective laws upon the subject. In some places the records of births are obtained by annual or semiannual enumeration, but this method is no more successful in the registration of births than in the registration of deaths. Chapin says that in Providence skilled enumerators obtain by semiannual enumeration records of but little more than 60% of the births. Local laws usually require births to be reported by the attending midwives or physicians, but the time limit for making the return is usually very liberal, and penalties for neglect are either not provided or else never enforced, so that the results are always far short of the true number. Even in those States where the legal provisions are most effective it is found necessary to supplement the returns by enumeration and by consulting the church registries of baptism.

In the registration of births it has always been found expedient to consider the confidential relations of physicians and midwives, and the private interests of parents, not only in respect of illegitimacy, but also with regard to the date and even the place of birth. Leniency upon these points opens the door for lax practice in other respects. The element of compulsion enters practically not at all into American practice, and perhaps there is no place for it. In respect to a birth the State cannot compel, as it can in regard to a death, the testimony of any witness.

The key to a complete registration of all legitimate living births is the conditioning of future rights and privileges upon the record of births, as is done in Germany; but it is doubtful if this could be done anywhere in America. A certain degree of pressure could, however, be brought to bear upon the subject, and the means are already available in the laws. For instance, the right to attend the public schools and the right to vote both depend upon attained age. If it were necessary to accompany every application for either of these privileges by some sort of signed testimony as to the age of the applicant, a copy of the birth certificate would offer the simplest means of meeting such a requirement. Thus gradually the birth certificate might come into habitual, though not exclusive or enforced, use in establishing citizenship. Many difficulties undoubtedly attend the registration of births, but satisfactory results have long been obtained in England, Germany, and France, and in at least one American State—Massachusetts.

Among the various methods of obtaining birth records we may speak of those employed in Massachusetts as well conformed to our republican ideas and as the most successful. Physicians and midwives are required to report monthly the births occurring under their care. Parents also must report in 40 days. In order to keep the physicians reminded of this duty a ruled sheet, 4 inches by 14 inches in size, is mailed each month to every physician with a request for a list of the births attended in the preceding month. This sheet is divided into ten vertical columns for the ten required items of information, so that the record of each birth occupies one line across the sheet. The data provided for on the sheet are the date of birth, sex, color, name, place of birth, names of parents (mother's maiden name), residence of parents, father's occupation, birth-place of father and mother.

These record sheets hardly meet the private needs of the citizen, being inconveniently preserved and difficult of refer-

ence, but they do serve the purposes of vital statistics with which we are at present concerned. Once a year an enumeration of births is made, and the returns of parents, physicians and midwives are thus supplemented. It is also found advisable to consult the pastors of certain religious bodies in order to get the records of births occurring among foreign born people under the care of foreign midwives.

In some places, as in Cincinnati, the sanitary police call once a month upon clergymen, physicians, and midwives for their returns of births. The success of such visitations depends upon finding the certifier at home and at leisure, so that the usefulness of this plan, except in a supplementary way, is doubtful.

A difficulty which often places a wide interval of time between the birth and its record is the item of Christian name. Now, the name of the child has no statistical importance, and, provided that the right to a completed record is secured to the new citizen, there is no reason for delaying the report for want of that item. Indeed, the experience of my own State seems to indicate that parents are easily impressed with the importance of sending in this final bit of information, and in about 65% of instances do complete the record by sending in the name.

The data required upon a record of birth for statistical purposes do not all appear upon the Massachusetts blank. Thus the ages of the parents should be given, and the number of the children (first, second, third). Items of doubtful value or of merely curious interest are sometimes asked for. In some certificates the hour of birth is asked for. In Wisconsin the certificate asks for the day of the week and for the names of the other living children of the same parents. In contrast with Indiana's impious pursuit of a death record by means of a mattock and spade, the birth certificate of the city of Mobile meets the unborn babe with an impudent inquiry; "*What part presented?*" There is no room on a birth record for any inquiry which is not of definite use to the citizen or to the community, and the difficulty of obtaining careful records increases in proportion to the number of separate inquiries. Thirteen items suffice for all the legitimate uses of a birth certificate.

By bringing several sources of information under tribute, and employing two or three agencies of collection, restricting the scope of each inquiry to the unquestionable needs of the public, and by keeping always in the foreground the private and personal interest of the citizen in the registration of births, it should be possible to realize in any American community a registration of births as complete as is obtained in Massachusetts. When several sources of information are interrogated especial care must be taken to avoid duplication of returns, but any good plan of registration will always include the supervision of the returns by a special officer, who will take whatever pains are necessary to find out whether two records which resemble each other belong to one event or two.

We have alluded in our discussion of mortality statistics to some of the more important uses of birth statistics, and shall mention here briefly some other sorts of information derivable from the study of birth records. As the birthrate has its measurable effect upon the deathrate, so the deathrate has at times an appreciable effect upon the birthrate. Birthrates in general obey the marriage rate, which always rises in times of prosperity; but when the infant mortality is high the fecundity of marriage is raised by abbreviation of the suckling period, so that the explanation of a marked rise in the birthrate for a given year may be found in the statistics of the previous year, and not in the marriage rate, but in the infant mortality.

The effects of a high birthrate during a period of years are to be looked for not only in an increased gross deathrate for approximately the same period, but may sometimes be traced to a diminished deathrate at a much later period when the growing children have made unusual additions to that part of the population which furnishes the least mortality (10 to 40). In the same way a period of high reproductiveness leads to an increase of the relative proportion of women of the childbearing age at a later period, so producing a second wave of reproduction.

War, by taking away vigorous young men, depresses the

marriage rate and the birthrate, abstracting at the same time from the home population those lives which contribute least to the mortality rates. After the return of peace this loss is not compensated, for war has its evil influence not only upon the lives of those engaged but upon their virility and upon their inclination and ability to marry.

Prosperity increases the marriage rate, but not, in corresponding degree, the birthrate. The birthrate is generally higher among the poor, and as families rise in the social scale the production of offspring tends to be more and more controlled. This condition is now generally observed throughout the civilized world and is not without serious significance. Long continued prosperity brings a decline of the marriage rate with a greater average age at marriage, thus further depreciating the reproductive energy of the people. Nations as well as men may therefore find sweet profitableness in the uses of adversity.

The annual rhythm of fecundity which has sometimes been noted is quite curious. If constantly looked for it perhaps might be often observed. Thus in the experience of Hamburg for ten years (1881-1890) the months of February and March gave the highest percentage of births, while June was the month of lowest percentage. A similar observation in Berlin for 1895 showed that January, February, and March gave the highest percentage, November the lowest. The birthrate is also influenced by density of population, by divorce, by race, and by religious belief.

Still-births and illegitimacy bear quite irregular relations to the general birthrate. Indeed the still-births appear to obey the illegitimate rather than the general birthrate. Illegitimacy does not, as might be expected, rise as the average age at marriage increases. On the contrary, in England, with the fall of marriage under age, illegitimacy has also declined.

Still-births have not received due recognition in registration. The Eleventh Census included still-births in the mortality and so charged against the population the deaths of those who were never in any sense a part of the population. In the comparative rates published by the Twelfth Census the figures of the Eleventh Census have been corrected for still-births. In England still-births are not recorded at all. In France and Belgium all children who die before their births are reported are registered as still-born. The birthrates for these countries must therefore be corrected before they become comparable to the birthrates of Germany and Italy, where only the infants delivered in the last two months of gestation, and dead without having breathed, are registered as still-births. The birthrate may for certain purposes be stated, as the deathrate is, in ratio to 1,000 living population, but such a ratio is crude in a more obvious way than our customary crude deathrates.

The ratio of births to the number of living females of child-bearing age is a more generally useful form of statement. Where populations differing materially in social conditions are to be compared the ratio of legitimate births to married women of child-bearing age must be determined.

STATISTICS OF MARRIAGE.

The registration of marriage is quite generally and effectively provided for in this country, 45 States having laws upon the subject. In all the States license must be obtained before the ceremony is performed, but return of the fact of marriage is not provided for in the laws of four or five States. In the New England States the license itself becomes a certificate. The items of information noted in the license suffice for the needs of vital statistics, but the records are often in the form of stubs, and are not generally available for the uses of vital statisticians. Provision for the return of the event has usually been made no stronger than will meet the private interests of the contracting parties, so that the records of marriages are not so complete as they would be if the interests of the State were fairly secured by the laws of the subject. Still, tolerably effective machinery is provided for the collection of statistics of marriage and it is only necessary to direct our present plea to the better utilization of existing data. It is highly desirable that returns of marriage with all their items of information should be brought, if not under medical supervision, at least into the hygienist's general store of vital memoranda.

STATISTICS OF SICKNESS.

When the fact that crude deathrates are comparatively unmeaning has been firmly grasped, and when we have realized the need of detailed information concerning the composition and movements of population, the sources of their natural and their actual increase, and the influences which lead to death and decay, we shall find that the productive energy of the people is not more closely related to the chief events of individual history (birth, marriage, and death) than to a multitude of minor occurrences which are more or less disabling.

Perhaps the most dangerous fallacy in the use of mortality statistics arises from the assumption that the mortality obeys the morbidity, and that the prevalence of sickness may therefore be approximately estimated from the recorded mortality. The two curves do indeed correspond in a rough way, but the intervals are so variable that different statisticians have furnished coefficients as far apart as three and nine, for the purpose of estimating general morbidity from general mortality.

Long ago an eminent English actuary, Mr. Neison, reduced this assumption to an absurdity by showing, from the records of medical charities, that in London in a year of favorable mortality there were no less, probably more, than 35 cases of illness to each death. Neison also showed that in 16 selected occupations, whose mortality was low, the sickness rate was high; while in other occupations, whose sickness rate was low, the mortality was high. He also worked out a table of ratios of mortality to sickness by age periods, finding the lowest 1.5%, in the age period 10 to 15, and the highest ratio 62.5%, in the age period 85 to 90; so that age distribution plays as important a part in the disability rates as in the deathrates.

Rumsey found that "deaths in a younger population are associated with less sickness than deaths in an older—in a male population than in a female—in an agricultural than in a manufacturing population." Newsholme testifies to the same effect, and more vigorously: "It is fallacious to assume any fixed ratio between sickness and mortality. Death returns are silent about the large mass of common sickness, which, although it may disable a man, is not 'unto death.' From an economic point of view this sickness is *more important* than deaths."

It has always been cheaper to bury a dead man than to support a sick one, and the contingent and remote effects of sickness have always been of more practical concern to the sanitarian than the number and causes of death. This view is very ancient, and has always had a strong political influence. The most convincing argument which Chadwick was able to urge in his movement for a general registration law in 1837, was that the cost of sickness was the heaviest item in the poor rates.

Registration of all sickness, or even of all disabling sickness, is impossible. The boundaries between health and disease are exceedingly vague, and the nature of much disabling sickness is indeterminate. But, because the registration of all disabling sickness is impossible, it does not follow that we should be content with the small amount of information which the notification laws afford. These laws attempt to cover only the more dangerous communicable diseases, the special agents of untimely death. The presumed intent of such laws to limit preventive operations to these diseases is by no means acquiesced in by the practical hygienist, and no small stir has been created now and again by attempts to include within the scope of the notification laws diseases whose infectious nature have been more recently recognized.

The efforts of preventive medicine must, in general, be directed against those diseases which cause the highest mortality, and every success against one cause of death simply transfers the debit to another account whose settlement we may or may not be able again to postpone. The winnings of hygiene have not as yet probably altered the age constitution of living populations to a measurable degree, or brought clearly into view the increased power of those tax-gatherers into whose hands our disputed accounts have fallen. But it is certain that what we win in one age period, or against one agent of death, we shall have to contend for again in a later period and against another agent, so that we must constantly readjust ourselves to shifting phases of the contest. Advance information will enable us to do this promptly, and such

information is to be sought, not in the mortality returns, but in returns of sickness.

Of several attempts to collect statistics of sickness in this country, but one has survived a considerable period and yielded approximately uniform results. The Michigan weekly returns of prevailing sickness are sent in by a number (usually about a hundred) of voluntary observers in various parts of the State. They report simply the presence or absence of certain specified diseases, without any details as to the amount or intensity of such sickness as is observed. This work has been kept up for 25 years. While this plan furnishes but a small part of the information needed by the sanitarians, the accumulated data have, nevertheless, a surprising accuracy, and would seem to indicate that the assay method of estimating the amount and kind of sickness may be satisfactorily applied to such data as are already in many places available.

The establishment in connection with boards of health of bacteriological laboratories furnishing physicians, free of cost, valuable assistance in the diagnosis of certain infectious diseases, has brought public hygienists into possession of amounts and sorts of information which could not be obtained under notification laws. Born of necessity, this movement has made astonishing progress. Within a decade twelve or more such laboratories have been established under the control of as many State boards of health, thus making small communities and rural districts contributors to the statistics of sickness. There are besides fifty or more such laboratories in connection with city boards of health, and in some of them the number of records concerning separate cases of disease mount well up in the thousands each year. Besides the definite information furnished by these reports, whose immediate use has been of surpassing value, the accumulated data will doubtless yield under statistical treatment results hardly less profitable.

With the advent of the public laboratory a new bond of mutual helpfulness has been created between public health officers and practising physicians, and the advantage of such a fortunate circumstance should not be lost. Since every man is supposed to contribute to the support of the commonwealth, there is a natural inclination on one hand to dispense, and on the other to accept, the benefits of the public health laboratory as if the State's whole concern in the matter were limited to the need of the moment. One has already heard practising physicians declare that the city or State is not entitled to the information asked for on laboratory blanks, and some physicians endeavor to evade the manifestly proper inquiry as to street address. What is worse, health officers seem inclined to condone such defaults. This is to lose the smaller but cumulative profits which the State should realize upon such an investment. It fosters, besides, a light esteem of professional privilege which will in time take on the characteristics of parasitism. The commonwealth is well within its right in requiring of every physician, who avails himself of the proffered aid, careful attention to the details of information which are provided for on the clinical and laboratory blanks.

Of the total amount of sickness occurring in any city, 40% at least is treated wholly or in part at public expense, and it has often been proposed to make the records of such sickness available for statistical uses. Hospitals and dispensaries have always manifested a decided opposition to such propositions, and have always been able to defeat them. It is nevertheless perfectly just and proper to make statistical use of the records of all sickness treated at public cost, and while municipal registration offices do not anywhere come into possession of such data, many hospitals and dispensaries do at the present time report at definite intervals both the kind and amount of sickness coming under treatment at the charge of the municipality. Some of the data required for sanitary purposes are not found in these reports, but the missing items are usually on record either in the hospital memoranda, or at the police station, or with the boards of charities. To obtain at least the temporary use of information from such sources does not, therefore, involve any increase of clerical work at hospital or dispensary, but requires simply a modified form of municipal accounting, which could often be secured by mere consultation and at no considerable expense.

Another new arm of municipal hygiene, which adds much

and might add more to the statistics of sickness, is medical inspection of schools. In Boston, where this practice is the oldest (since 1894), the returns for a year include upward of 10,000 cases of sickness falling under 100 or more nosologic heads. The inspectors' reports are made monthly to the board of health. In New York the inspectors report to the board of health daily. If the teachers were instructed to supplement the inspectors' reports with the results of inquiry concerning absenteeism a more satisfactory view would be obtained of the sickness prevailing among children.

By easy arrangements boards of health might secure the temporary use, if not the permanent possession, of all needful data concerning the causes of disability among a very large part of the population, and timely needs would be served in this way. But, as we have already seen, the details of present sanitary history are sure to be needed again and again in tracing the causes of remote events, and for such purposes they must come complete into the permanent possession of boards of health. Never was a day so auspicious for the acquisition of such property. In no aspect of modern medicine is the scientific spirit more strikingly manifest than in the completeness of medical anamnesis. It is an age of exhaustive histories, of systematic and minute note-taking, of graphic memoranda, of indexes and cross-indexes. The few and simple data required for the broader purposes of preventive medicine need only to be abstracted from heaps of manuscript, and so far as these relate to sickness treated at public cost, their appropriation to the service of preventive medicine needs no apology. On the contrary, failure to so appropriate them must inevitably become a reproach both to medical charity and to municipal government.

A comprehensive plan of collecting statistics would include reports of sick benefit associations and the disability returns of corporations, such as mining, transportation, and industrial concerns. In England the Factory and Workshops Act furnishes a great deal of useful knowledge concerning industrial hygiene, and in Germany the Allgemeine Krankenkassen make regular reports to the health officials. In time such sources of information may be brought under tribute in America. Farr's original plan was yet more ambitious. He confessed an ultimate aim to register all the sickness among the civil population as completely as is done in the Army. Our own remote ideal may be as great as that, but meanwhile our plea is for the instant seizure and conversion to the uses of hygiene of every scrap of information coming within official reach.

[To be concluded.]

The Enno Sander Prize of the Association of Military Surgeons for 1903 will be awarded to the author of the best essay on "The Differential Diagnosis of Typhoid Fever in Its Earliest Stages." The board of award will consist of Dr. Austin Flint, of New York; Colonel Calvin DeWitt, of the Army; Prof. Victor C. Vaughan, of Ann Arbor. Competition is open to all persons eligible to active or associate membership in the Association of Military Surgeons of the United States. Two prizes will be awarded, one a gold medal of the value of \$100, and the other a life membership in the association of the value of \$50. Full information concerning the contest may be obtained from Major James Evelyn Pilcher, Carlisle, Pa., secretary of the association.

"Medical Library and Historical Journal."—We have received Vol. I, No. 1 of this publication, which marks a new departure in medical journalism. An idea of the character of the journal can be obtained from the following titles appearing in the original article department: "Jacobus Berengarius Carpensi and His Commentaries on Mundinus," by Lewis Stephen Pilcher, A.M., M.D., LL.D., of Brooklyn, N. Y.; "The Medicine and Doctors of Juvenal," by Eugene F. Cordell, M.D., of Baltimore, Md.; "The Book-Worm," by Frederick P. Henry, A.M., M.D., of Philadelphia; "A Brief Account of the Library of the Medical Society of the County of Kings," by James MacFarlane Winfield, M.D., of Brooklyn, N. Y.; "A Few Hints on Medical Library Administration," by John S. Brownne, of New York City; "A Practical System of Classification for Medical Libraries, Large or Small," by Albert T. Huntington, of Brooklyn. This journal, which is now the official organ of the Association of Medical Librarians, is designed to fill the unique function of supplying to medical historians, medical librarians and medical bibliophiles an exclusive medium of intercommunication. The aim of the editors, as set forth on the title page, is to publish a periodical "devoted to the interests of medical libraries, bibliography, history, and biography." The journal will be issued quarterly. The subscription price is \$2 yearly; single copies, 75 cents.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

February 7, 1903. [Vol. XL, No. 6.]

1. How Not to be Nervous. HUGH T. PATRICK.
2. The Scientific Exhibit and Its Future. FRANK B. WYNN.
3. The Year's Progress in Therapy. GEORGE F. BUTLER.
4. Cardiac Stimulants. JOSEPH M. PATTON.
5. Adenoids. W. FREUDENTHAL.
6. Chlorosis. C. F. WAIRER.
7. Is the Adenoid Operation a Justifiable Surgical Procedure; and, if so, Shall it be Done in Accordance with the Rules of General Surgery? GEORGE L. RICHARDS.
8. The Diagnosis of Carcinoma of the Larynx. OTTO T. FREER.
9. Uniformity in Medical Practice Acts. N. R. COLEMAN.
10. Note on Malarial Vertigo. THOMAS J. MAYS.

1.—See *American Medicine*, Vol. IV, No. 18, p. 687.4.—See *American Medicine*, Vol. III, No. 25, p. 1060.5.—See *American Medicine*, Vol. III, No. 25, p. 1048.6.—See *American Medicine*, Vol. III, No. 25, p. 1049.7.—See *American Medicine*, Vol. III, No. 24, p. 992.8.—See *American Medicine*, Vol. III, No. 25, p. 1056.

9.—**Uniformity in Medical Practice Acts.**—Coleman points out the necessity for a more uniform definition of the practice of medicine, as few of those included in the laws are adequate to meet all the methods devised for their evasion. He suggests the appointment of a committee with one member from each board of medical licensure to frame a definition and report. State examining boards should make a specific definition of what is meant by four full years of study and by four full courses of lectures each in four separate years, and then exact it from all who apply for examination. In case of graduates in dentistry, pharmacy, and veterinary medicine advanced standing in the medical course should be withheld unless their literary training is equivalent to that leading to an A.B. or B.S. and their work has included that of the first year in a first-class medical college. It is regrettable that some States still admit undergraduates to examination. Night schools and summer schools should not be recognized. There is no necessity or excuse for such institutions. Time should be devoted at each annual conference of the National Confederation to outlining and agreeing upon the extent and character of the ensuing examinations in the several States in order that they shall all be equally difficult. Adequate time should be given applicants for full answers. A uniform standard of grading should be adopted. Let the members of the confederation agree to a uniform course of action and in a few years our laws would be in accord. [H.M.]

10.—**Malarial Vertigo.**—Mays has found this symptom mentioned by few recent writers. It is sometimes the first thing to draw the patient's attention to his condition. In apparent health his gait suddenly becomes insecure and he staggers or falls, but consciousness is not dimmed. The attacks come in daytime and intermittently. In all of the author's cases there was a history of intermittent fever, latent for some time, perhaps for years, before the vertigo appeared. Quinin should be administered in doses large enough to cause ringing in the ears. [H.M.]

Boston Medical and Surgical Journal.

February 5, 1903. [Vol. CXLVIII, No. 6.]

1. On Paratyphoid Fever and its Complications. JOSEPH H. PRATT.
2. Typhoid Fever at Boston City Hospital in 1902. GEORGE G. SEARS.
3. Typhoid Fever at Massachusetts General Hospital. HERMAN F. VICKERY.
4. The Clinical Diagnosis of Typhoid Perforation. JOHN C. MUNRO.
5. Diet in Typhoid Fever. FREDERICK SHATTUCK.
6. Typhoid Fever in Private Practice. J. T. G. NICHOLS.
7. Upon Presence of Typhoid Bacillus in Urine and Sputum. MARK W. RICHARDSON.

1.—**Paratyphoid Fever.**—The paratyphoid bacilli are members of a group which includes meat poisoning bacilli, *B. psittacosis* and the hog cholera bacilli. They produce typhoid symptoms in man. Pratt reports a case, the only one in which orchitis due to this bacillus is recorded. He also reports a case of Richardson's, unique from the occurrence of cholelithiasis four years after the fever. In the 84 cases recorded *B. paratyphosus A* was the causative organism in 12, and *B. paratyphosus B* in 69; in the others the species was not determined. The disease is a general infection in which local lesions may be

absent. Fatal cases were all due to *B. paratyphoid*. It may present all the clinical aspects of typhoid fever. The number and frequency of complications is striking. The author gives a list of these. The diagnosis is made by cultures from the blood. These have also been made from urine, feces, vagina, rose-spots, and sputum. If the organism cannot be recovered, diagnosis is justified if the bacilli are agglutinated by high dilutions of the blood, while typhoid bacilli are not agglutinated or only by very low dilutions. The serum reaction is a special, not a specific test. The mortality is apparently much lower than in typhoid fever. [H.M.]

2.—**Typhoid at the Boston City Hospital.**—Sears reviews the symptoms, etc. in 203 cases treated in six months, with a mortality of 12.8%. The great majority developed insidiously, but an unusual number of cases began with severe headache, a chill, or diarrhea. Diarrhea and constipation were about equally present. Defervescence occurred in two cases by crisis. In one case a temperature of 107.5° was reached without discoverable cause, and without interrupting the patient's progress toward recovery. Hemorrhage occurred in 14 cases, four of which ended fatally, and perforation in three—all fatal. In operation is the only hope of cure, but Sears does not advise this method until the diagnosis is clear. In some cases of the disease there was noted a marked increase in the amount of urine voided at the time convalescence set in. Three women were pregnant, but recovered without aborting. Psychic disturbance developed in six cases. The prevalence of relapse depends on the interpretation of the recrudescence of the fever. In this series the relapses were estimated at 20. The Widal test was positive in 168 and negative in 33. It is of great value in cases with misleading features. [H.M.]

3.—**Typhoid at the Massachusetts General Hospital.**—Vickery reports 49 cases, with a mortality of 6%; 41 gave a positive Widal reaction. The diazo reaction was of little assistance in making a diagnosis. One profoundly toxic case exhibited striking improvement upon subcutaneous administration of normal salt solution, one pint twice daily for 13 days. [H.M.]

4.—**Typhoid Perforation.**—Munro, of Boston, reports 26 cases, 21 of which came under his own observation. Of the entire series 21 were operated upon, and all but two died. Two patients died and three recovered without operation. Fatality in a number of cases was due to refusal of operation on the part of the patient or friends until the operative time had passed. The author prefers ether to local anesthesia as a rule. He insists that the surgeon be called earlier in consultation, and believes the ideal plan in hospital practice is for the surgeon to see, with the physician, the typhoid patients each day. Early surgical interference is insisted upon; and attention is called to the fact that symptoms differ much in different cases; in many cases the classic symptoms do not appear at all. Two of the patients recovering without operation, he believes had perforation which healed spontaneously. He knows of no definite means of differentiating perforation from hemorrhage. All cases exhibiting signs of additional peritoneal infection should be operated upon. Naturally in some perforation will not be found, but to wait for definite and conclusive signs is to lose to many patients the only hope of recovery. [A.B.C.]

5.—**Diet in Typhoid.**—Shattuck feeds his patients according to their digestive power rather than according to the name of the disease, avoiding anything which can leave a residue irritating to the ulcerated surface. Under exclusive milk diet he had a mortality of 10% in 233 cases, while with enlarged diet the mortality has been only 8.45% in 246 cases, and relapse has been 2.9% less. The evidence is sufficient to warrant further trial. Hemorrhage and perforation are no more frequent, the patients are more comfortable, and have a shorter convalescence. [H.M.]

7.—**The Typhoid Bacillus in Urine and Sputum.**—According to Richardson, the bacillus is present in the urines of 21% of cases, frequently in enormous numbers, persisting for weeks, with danger to both patient (cystitis and possibly orchitis and epididymitis) and public. Disinfection should be rigid. Urotropin is generally sufficient. Obstinate cystitis may require vesical irrigations. No patient should be discharged until his urine is proved free from bacilli. He has

isolated this organism on three successive days from the sputum of a case complicated by pneumonia. In 15 cases without pulmonary complications results were negative. It is almost invariably associated with other organisms, and is to be regarded rather as a secondary invader than the primary cause of the complication. [H.M.]

Medical Record.

February 7, 1903. [Vol. 63, No. 6.]

1. Theory and Practice of Spinal Cocainization. G. K. DICKINSON.
2. Essential and Paroxysmal Tachycardia. J. J. MORRISSEY.
3. Hemorrhagic Appendicitis as the First Manifestation of Purpura Hemorrhagica. NATHAN JACOBSON.
4. Subcutaneous Abscesses Due to the Gonococcus in a Child Two Years of Age. MILTON A. GERSHEL.
5. Imbalance and Insufficiency of the Eye Muscles. R. C. MATHENY.
6. The Maternal Impression Superstition. EDWIN TAYLOR SHELLY.
7. Paraffin Injection in a Case of So-called Saddle-nose. FRANCIS ALTER.
8. The Army Cartridge-belt. LOUIS L. SEAMAN.

1.—Spinal Anesthesia.—Dickinson says until 100,000 cases have been observed and properly recorded it will be idle to condemn or laud this method. Cardiorespiratory complication is the main danger to be apprehended, but from his experience in a series of over 200 cases, no anxiety need be felt. There was no distress from dyspnea nor palpitation. Blanching of the skin and consequent nausea were observed at times with vomiting in a few cases shortly after puncture, or later when disturbed by being transferred to bed. In his earlier cases, when but few drops of the spinal fluid was lost, or perhaps due to faulty choice of cocain, the nausea and vomiting was more frequent and persistent, but in the last 135, with removal of the same quantity of fluid as the amount injected, this phenomena has been quite unusual. [Eucain B is prepared by many surgeons, as it can be sterilized without decomposition by boiling.] [A.B.C.]

2.—Tachycardia.—Morrissey reports two cases, one of which was due possibly to myocardial degeneration, and the second to profound shock of the nervous system. Tachycardia is a symptom. When associated with definite pathologic changes in the myocardium it should be classified as essential; when due to outside disturbances in the nervous system, alimentary tract, etc., the name reflex should be applied. Rapid action found with organic heart disease is an entirely different phenomenon. In some hearts attacks of tachycardia may precipitate all the consequences of advanced disease. The pathology is very obscure and the treatment unsatisfactory, due probably to so many diverse conditions giving rise to the same symptoms. [H.M.]

3.—Hemorrhagic Appendicitis as the First Manifestation of Purpura Hemorrhagica.—Jacobson reports the case of a woman of 37 who suffered for several days from general abdominal pain, confined mostly to the right side. The pain became most pronounced over the appendix, and existed to a less degree over the gallbladder and at a point to the right of the umbilicus. Right-sided abdominal rigidity could not be definitely determined on account of a very thick belly-wall. Temperature rose to 104.5°, and the pulse to 132. Operation showed the appendix apparently inflamed. Microscopic examination of the removed organ showed it had sustained numerous intestinal hemorrhages, but no blood extended into the lumen. Two days after operation pain became marked in the right chest. Two days later a hacking cough developed, which raised a quantity of bright blood, followed by a profuse nasal hemorrhage. The next day petechial spots appeared on the left leg, followed by numerous ecchymoses on both calves; petechias also appeared on the abdomen. There was no vomiting. The heart and joints were normal, and there were no hemorrhages from the bowels or kidneys. For some three weeks she daily expectorated more or less blood. Then suprarenal extract was given, and from that time there were no expectoration of blood. It may have been a coincidence. After about six weeks the patient was discharged cured. The author knows of no similar case, and his search in the literature has been fruitless. The point of greatest interest is hemorrhage occurring in the appendix as the first manifestation of purpura hemorrhagica. He therefore, in consequence of

the similarity in symptoms to inflammatory appendicitis denominates it hemorrhagic appendicitis. [A.B.C.]

4.—Subcutaneous Abscesses Due to the Gonococcus.—Gershel reports the case. A male child of two years was suffering from typhoid fever. Acute anterior urethritis developed. A week later a subcutaneous abscess developed at the left of the anus; a few days later a similar abscess developed at the right of the anus. There was no communication with the rectum or prostate. Bacteriologic examination from both abscesses and from the urethral discharge proved all to be of gonococcic origin. The source of the urethral infection could not be determined. The abscesses were considered by the author to be the result of lymphatic conduction. A study of the literature on the subject showed 11 other somewhat similar cases reported so far as origin of the abscess is concerned; only two, however, were subcutaneous. [A.B.C.]

6.—Maternal Impressions.—It seems incredible to Shelly that our modern textbooks should contain such antiquated ideas on the subject of maternal impressions as he quotes from Hirst, Dorland and others. The grounds upon which the old theory of maternal impressions producing physical marks upon the unborn child rests are untenable, both anatomically and physiologically. As soon as the ovum is expelled from the Graafian follicle, the solution of continuity between the ovum and the mother is complete. This fact is conspicuous even in the arrangement of the placenta, whereby the blood of the mother and that of the child do not mingle directly, only by osmosis; and the gap between the nervous systems of the two extends throughout the whole length of the umbilical cord and the thickness of the placenta. That it is possible for a nervous or mental influence to bridge this chasm and produce physical abnormalities, is absurd. The prevalence among medical men of such a delusion is a stigma upon the profession and the source of many hours of anxiety to expectant mothers. [W.K.]

7.—Saddle-nose Corrected by the Subcutaneous Injection of Paraffin.—Alter reports that a man of 55 had a marked saddle-nose, the result of a luetic infection at 22. He had many relapses from the original infection, due to inadequate treatment. Subcutaneous injection of paraffin was done with good results, the correction being almost complete from a cosmetic standpoint. The material used consisted of one part of solid to three parts of liquid paraffin, the mixture having a melting point of 40° C. (104° F.). The antitoxin syringe, as suggested by Heath, was used. A strong, perfectly-acting syringe, with shoulder or eyelets should be employed, as it requires a surprising amount of force to drive onward the paraffin. The point is inserted at the apex of the glabella. Some blanching will be noticed, which soon subsides. Molding is easy and should be followed up by rubbing a small piece of ice over the surface. [A.B.C.]

8.—The Army Cartridge-belt.—Seaman, late Major and surgeon, First U. S. Volunteer, makes grave complaint against this belt. He asserts that in the tropics 80% of the soldiers are sooner or later afflicted with some gastrointestinal disorder. The cartridge-belt, weighing from 10 to 12 pounds, is suspended from the waist, and changing its position at every step, acts practically as massage to the abdomen. This, if the viscera be at all inflamed, is the very antithesis of what is needed, and in his judgment is a causative factor in producing visceral inflammation. The belt should be suspended from the shoulders, as is the practice among the armies of all other civilized nations. [A.B.C.]

New York Medical Journal.

January 31, 1903. [Vol. LXXVII, No. 5.]

1. The Treatment of Acute Septicemia by the Intravenous Infusion of a Solution of Formaldehyd, with Report of a Case. CHARLES CLIFFORD BARROWS.
2. Rectal Fistula Curable without Operation. A. ROSE.
3. Report of a Case of Intestinal Obstruction Due to Meckel's Diverticulum. J. S. PRICE.
4. Fourteen Cases of Smallpox from the Buffalo Epidemic of 1901-1902. D. E. WHEELER.

1.—See editorial *American Medicine*, Vol. V, No. 6, p. 232.

2.—**Rectal Fistula.**—Rose reports a case of rectal fistula in a man of 34 cured by the application of carbonic acid gas. The patient had hemorrhoids, suffered from constipation and did

not have complete control of the sphincter vesical. He had been unable to sit down long enough for his meals, and had suffered thus for years. A current of gas was passed through the external opening into the rectum, filling the bowel up to its full capacity and causing thereby the agreeable sensation of warmth that is noticed when the gas is introduced directly into the rectum. From the first application the sinus began to close, and with the third very little, if any, gas passed into the rectum. At the end of two weeks the fistula was completely and entirely closed and healed. The rectal cone was used to reduce the hemorrhoids, and compound licorice powder to regulate the bowel. Following the closure of the fistula the rectum was inflated daily with carbonic acid gas to heal the internal ulceration. [C.A.O.]

3.—A case of intestinal obstruction due to Meckel's diverticulum is reported by Price. Upon opening the abdomen it was found that a loop of ileum about 15 inches in length had been caught by the diverticulum which was about 3 inches in length. The knuckle of strangulated gut was gangrenous in three or four places and very much distended. To relieve the pressure it was necessary to open the bowel and allow about a quart of liquid feces to escape. The gangrenous areas were inverted under a double tier of running Lembert sutures. After replacing the intestine it was surrounded by iodoform gauze and the wound left open. The operation was performed in a negro cabin. Uninterrupted recovery followed. [C.A.O.]

4.—Smallpox.—Wheeler gives pictures illustrating, and reports in full 14 cases of smallpox from the Buffalo epidemic of 1901-1902. Of 409 cases reported up to the time of writing, only six had ended fatally. Most of the cases had been among the Poles, especially those under the school age. Of the 409 cases, a vaccination history was recorded in 374. Of the subjects of these, 295 were never vaccinated. Sixty-nine professed to have been vaccinated, by no means all of them successfully, or within seven years. There is only one case reported in this epidemic of smallpox in a person successfully vaccinated more than once. This was a very mild case of varioloid. [C.A.O.]

Medical News.

February 7, 1903. [Vol. 82, No. 6.]

1. What Advice Should be Given to a Woman Suffering From Fibroid Tumor of the Uterus? J. RIDDLE GOFFER.
2. Eye-strain. A. C. BARDES.
3. A Fatal Case of Polyarthritides Complicated by Choreiform Symptoms and Vegetative Endocarditis. AUGUSTUS A. ESHNER.
4. Prostatic Calculi: With Report of a Case. JOHN F. ERDMANN.
5. The Facts in a Case of Hematuria. CHARLES H. CHETWOOD.
6. Trap-drummer's Neurosis: a Hitherto Undescribed Occupation Disease. CHARLES J. ALDRICH.
7. Experiments With a New Quinin Derivative. F. PIRKNER.

1.—See *American Medicine*, Vol. IV, No. 18, p. 689.

3.—Polyarthritides, Choreiform Symptoms and Vegetative Endocarditis.—This case of Eshner's is interesting on account of the association of these conditions. Various cocci may each give rise to a number of distinct lesions, and it may eventually be found that rheumatism and chorea merely represent different localizations of the same infection. [H.M.]

4.—Prostatic Calculi.—Erdmann reports the case of a man of 23 who had been operated upon twice within two years and two tooth-like stones removed from a perineal incision, and the condition diagnosed dermoid cyst of the prostate. A urinary sinus persisted. The author operated and removed 50 small, brownish, highly polished stones from the right lobe of the prostate. The fistula persisted for some weeks, when a second operation was performed for its closure. This was entirely successful. Some sebaceous material, hair, etc., were removed with the small stones, but the author suggests that this may have resulted from the first operation, rather than from dermoid or inversion-cyst origin. The origin of the calculi is a calcareous degeneration of a previous inflammatory condition. [A.B.C.]

5.—Hematuria for Four Years.—Chetwood reports the case. An American laborer had for four years noticed that his urine was very dark. No relief followed medical treatment and he was told he had stone in the bladder. Since one year ago he has found it necessary to micturate once or twice during

the night. There have been no chills or fever. On presentation to the author the patient was anemic. A cystoscopic examination showed dark blood coming from the right ureter and clear urine from the left. Operation by right lumbar incision showed the kidney apparently normal. Laying it open a small area of induration was found on a bit removed for microscopic purposes. Three days after the operation the urine was clear for the first time in four years. The urine as previously examined was negative except for blood. The microscopic tissue examination showed some parenchymatous changes only. [A.B.C.]

6.—Trap-drummer's Neurosis.—Aldrich's patient stated that each stroke on the pedal required from 5 to 20 pounds pressure, and sometimes a rapidity of movement equal to 150 or 180 strokes per minute. A sense of constriction was felt in the whole leg, and a cramped, distressing sensation of pain and exhaustion in the anterior muscular groups. This is a rare development of kinesthesia in a set of muscles whose centers are very low in the cord, and whose volitional stimuli travel farther than any other in the body. Such a degree of precision and nicety of irregularity is demanded that it is little wonder exhaustion of the cortical centers should occur. [H.M.]

7.—A New Quinin Derivative.—Pirkner recommends saloquinin on account of its tastelessness and nonirritating and diuretic qualities. It is especially indicated when quinin must be administered to patients with gastrointestinal irritation and middle-ear disease, and to those in whom severe symptoms of cinchonism are easily produced. [H.M.]

Philadelphia Medical Journal.

February 7, 1903. [Vol. XI, No. 6.]

1. Tropical Diseases. Third Lecture in a Course on Tropical Diseases, etc. CHARLES E. KIEFFER.
2. The Elevation of the Stomach in Gastroptosis by the Surgical Plication of the Gastrohepatic and Gastrophrenic Ligaments; an Original Operation. HENRY D. BEYEA.
3. A Study of 55 Fatal Cases of Pertussis. MARION MCH. HULL.
4. What is Irritable Bladder, and What is the Best Method of Treating It? LOUIS BROTER.
5. The Significance of the Temperature in the Diagnosis of Extra-uterine Pregnancy During the Period of Collapse from Hemorrhage. CHAS. P. NOBLE.
6. An Improved Syringe for Intratracheal Medication. P. S. DONNELLAN.

1.—Tropical Diseases.—Kieffer details at length chronic dysentery, which is usually a sequel of acute dysentery, although it may be a subacute or chronic process from the beginning in amebic cases. The great bulk of chronic tropical dysentery is due to the ameba coli. When bacillary dysentery becomes chronic the clinical type is simply one of amelioration of all the symptoms of the intense acute stage. The treatment of chronic dysentery is divided into the treatment of the subacute recurrences and into the treatment of the essentially chronic stages. Bismuth is a valuable remedy administered in the form of betanaphthol bismuth; sulfur has been used by Stengel with prompt and striking success; salol alone or in combination with bismuth is of great value. The local treatment is considered the most rational plan of treatment. Local remedies should not be used in acute or subacute recurrences or recrudescences, in chronic dysentery. In giving local remedies the quantity of the fluid must be such that the irrigation will fill the colon and reach quite up to the ileocecal valve. The remedy of greatest value is silver nitrate. It is administered in a strength from 1 gm. to 2 gms. (15 grains to 30 grains) to the pint. Of this solution three to four pints are carefully injected. Commonly this injection would be repeated at intervals of three to four days; but in certain cases the silver salt causes marked irritation, and it must be abandoned. Scorbutus and malaria are complications which should always be borne in mind. [F.C.H.]

2.—The Elevation of the Stomach in Gastroptosis.—Beyea describes his operation for elevation of the stomach in gastroptosis by the surgical plication of the gastrohepatic and gastrophrenic ligaments. The principle of this operation is that by placing three rows of interrupted silk sutures from above downward and from right to left through the gastrophrenic and gastrohepatic ligaments, a broad transverse fold or plication is formed in shortening these ligamentary supports and elevating the stomach to normal position. The normal ligaments are

shortened without disturbing the physiologic mobility or functions of the organ. The principle of the operation must be considered physiologically and surgically ideal. Seven cases are reported in which the patients have secured completeness of relief by this operation. [F.C.H.]

3.—A Study of Fifty-five Fatal Cases of Pertussis.—

Hull gives a detailed study of 55 fatal cases. In these the complications were not the primary causes of death. In all of them, particularly in those of very young infants, the danger signal was either a developing stupor or an attack of prostration, from which the patients recovered only temporarily, to go into a state of increasing stupor and exhaustion until death. The average duration of the fatal cases was a trifle over three weeks. The treatment in pertussis is plainly to support the patient, to establish an equilibrium in the nerve centers, and to prevent the further absorption of toxins by destroying the micro-organism producing them. [F.C.H.]

4.—Irritable Bladder.—

Broter believes that in every case of irritable bladder there is something more than a mere nervous condition. He considers that when one speaks of an irritable bladder, an inflammatory condition of a localized area of the mucous membrane is inferred. In the treatment of this condition, prophylaxis is of paramount importance; a mild diet should be used. Excellent results are obtained by the following plan of treatment: Catheterize the bladder; then wash out the bladder several times with a warm saturated solution of boric acid; then introduce one ounce of a 1% solution of silver nitrate, allowing this to remain in the bladder for three to four minutes; draw off the silver solution and introduce about three ounces of a 2% to 10% solution of ichthyol in water, and allow this to remain in the bladder for at least a half hour. The treatment should be repeated every other day for about three or four weeks. In conjunction with this treatment a simple alkali should be administered daily. [F.C.H.]

5.—The Significance of the Temperature in the Diagnosis of Extrauterine Pregnancy During the Period of Collapse from Hemorrhage.—Noble details a case showing that a rise of temperature a few hours after the onset of symptoms of hemorrhage from ectopic gestation does not exclude a diagnosis of collapse from hemorrhage. [F.C.H.]

6.—An Improved Syringe for Intratracheal Medication.—Donnellan describes an intratracheal syringe which can be readily sterilized by boiling, or by immersion in alcohol or corrosive solution. With ordinary care the barrel and glass piston are quite durable, but should they get broken they can be easily replaced by the instrument dealers. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

EDITORIAL COMMENT

Multiple serositis or multiple progressive hyaloseritis, as Nicholls¹ prefers to call it, is a disease entity to which more than passing attention should be directed. Nicholls, summarizing his opinion on the subject, says that there is an affection of the serous membranes—multiple progressive hyaloseritis—characterized by the formation of dense fibrohyaline investment in certain regions, and that anatomically two forms exist—the sporadic and the diffuse. The disease is primarily and essentially due to chronic inflammation, and is almost certainly attributable to the action of microorganisms of low virulence. The exact nature of the microbic excitants is in many cases obscure, but cases undoubtedly exist that are due to the tubercle bacillus. Nicholls furthermore believes that apart from tuberculosis only one form of the disorder, namely, chronic hyaline perihepatitis (Zuckergussleber) gives rise to clinical symptoms sufficiently definite to render diagnosis possible; that this form of perihepatitis may exist *per se* but is often secondary to chronic peritonitis, or may be again part and parcel of a generalized affection of the

serous membranes; and that the most important etiologic factors in chronic perihepatitis are, in order of frequency, acute and subacute hepatitis, chronic mediastinopericarditis, chronic peritonitis, and chronic pleuritis.

Two striking features of multiple serositis possess unusual interest in connection with the presumed tuberculous nature of many of the cases—the marked susceptibility of the serous membranes and a certain immunity of the organs. This has led a number of the Italian writers who have studied the disorder carefully (calling it polyorrhomenitis or polyserositis) to insist that not every case of generalized tuberculosis that implicates the serous membranes and gives rise to chronic fibrous lesions belongs to the group under discussion. Thus Picchini¹ states that the cases under discussion differ from the ordinary cases of serous membrane tuberculosis in that in their etiology heredity plays no role; that the disease does not appear to affect especially persons of phthisical or tuberculous habitus; that the inflammations of the serous membranes set in insidiously, much less acutely than do the ordinary cases of tuberculous inflammation; that they may remain latent for a long time; and that the lesions remain localized to the serous investment of the organs and are unassociated with tuberculous lesions of the lungs, as is so common in the ordinary cases. A study of the cases reported in the literature bears out the reasonableness of this view. Nevertheless, as pointed out by Kelly,² there seem to be border line cases and cases representing varying degrees of infection with the tubercle bacillus: (1) Cases in which the lesions are confined strictly to the serous membranes; (2) cases in which the lesions involve especially the serous membranes, but in which one or several tuberculous foci may be found in the body (of which several cases have been reported); (3) cases in which the serous membrane disease represents but a part of a general tuberculous infection (usually a distinct disorder rarely presenting the characteristic thickening of the serous membranes). Although the disease may begin in any one of the serous membranes—the pericardium, the pleura, or the peritoneum—the lesions of the pleura or pericardium are frequently for a long time latent; the striking clinical feature of the disease is ascites, which is present whether the pericardial and pleural changes are absent, whether they are slight, or whether they are marked.

The presence of disproportionate ascites, therefore, should awaken the suspicion of the presence of this multiple serositis, particularly as already pointed out³ in the absence of the etiologic factors and usual physical signs and symptoms of cirrhosis of the liver. Such suspicions will the more likely occur to those who have read the extremely interesting observations of Hale White⁴ who, in discussing the causation of ascites, says that the supervention of ascites in uncomplicated cirrhosis of the liver means that the end is near; that if a patient with ascites and cirrhosis of the liver lives long enough to require a second paracentesis, it is in the highest degree probable that either the diagnosis is incorrect or that some cause other than cirrhosis exists to explain the ascites, and that such cases nearly always turn out to be examples of chronic peritonitis with perihepatitis, which is not a special disease, but merely a part of chronic peritonitis. These observations are of special value as indicating the relative unimportance of the liver in the causation of an ascites that persists as long and necessitates as many tapplings as does the ascites in the cases of multiple serositis at present under discussion. Nicholls, point-

¹ Quoted by Kelly: American Journal of the Medical Sciences, 1903, cxxv, 137.

² Loc. cit.

³ Editorial, American Medicine, January 31, 1903, p. 190.

⁴ Guy's Hospital Reports, 1893, xlix, 1.

¹ Studies from the Royal Victoria Hospital, Montreal, Vol. 1, No. 3, 1902.

ing out that chronic hyaline periphepatitis, atrophic cirrhosis of the liver, tuberculous peritonitis, and carcinoma of the peritoneum present many features in common, gives an extremely valuable table for differential diagnosis. The chronic perihepatitis (or "zuckerguss-leber") occurs in middle life or later, and affects both sexes equally; often a history of acute pericarditis or perihepatitis may be elicited; alcoholism, syphilis, and heredity are without influence; the disorder becomes insidious or chronic from the beginning and lasts for years; fever is absent except during exacerbations; pain is trifling and indefinite; digestive disturbances are trifling or absent; ascites is constant and extreme; anasarca is constant, but slight; and jaundice is absent in pure cases.

The Egyptian Medical Congress, held at Cairo at the close of last year, exhibited in its proceedings a very high standard. Among Americans who read papers were Major W. G. Gorgas, and Charles Wardell Stiles. Major Gorgas' paper was on "Recent Experiences of the United States Army with Regard to the Sanitation of Yellow Fever in the Tropics;" Stiles' on "Uncinariasis (Ankylostomiasis) in the United States." The latter was read by Assistant Surgeon V. G. Heiser. Professor Loos, of Leipsic, made a more detailed announcement of his hypothesis that the ankylostoma enters through the skin, a view to which attention was some time ago called in an editorial in *American Medicine*. Some striking statements were made by Kartoulis, of Alexandria, with regard to dysentery. He expressed the belief that when abscess forms in the liver the attending physician is to blame. He treats his cases with rectal injections of tannin and uses sodium salicylate internally. Other interesting papers were read. These will no doubt soon be printed and will then be reviewed in their proper place.

The X-ray as a Therapeutic Agent.—An interesting discussion upon this subject took place in the Cincinnati Academy of Medicine a short time ago. It was called forth by a paper by William Jordan Taylor. From his studies it seems that the first to suggest the applicability of the x-ray to therapeutic purposes was Freund, who employed it to remove the hair from a nevus. According to Taylor, the x-ray treatment is valuable in the following five conditions: (1) In hypertrichiasis, for the removal of undesirable hair; (2) in diseases of the hair and hair-follicles, such as sycosis, tinea tonsurans, favus, and when the removal of diseased hair is essential; (3) in the treatment of inflammatory troubles, such as chronic eczema, in which it is necessary to stimulate the tissues and produce absorption of inflammatory products; (4) in certain affections in which it is desired to cause destruction or absorption of tissues of low vitality; (5) to relieve pain and to produce sleep. This list, however, by no means exhausts the affections for which the x-rays have been and are employed. In the discussion, which was participated in by Ravogli, Shields, and Heidingsfeld, Shields expressed the belief that the results attributed to the x-ray are not due to the action of this agent at all, but to rays of a different sort produced in the tube with the x-ray. He also gave it as his emphatic opinion that the x-ray has absolutely no power to relieve pain. This is in strong contrast with the views of others, particularly with those expressed by Moseley in *American Medicine*, January 31, 1903.

REVIEW OF LITERATURE

A Peculiar Complication of Pulmonary Hemorrhage.

—Cybalski¹ has seen four cases in which slight pulmonary hemorrhage coming on during sleep was followed shortly after by extreme dyspnea, in one case threatening the life of the patient. Each patient expectorated after a violent coughing

paroxysm a large, branching, grayish-red cast, this being followed by immediate relief of the breathing difficulty. Microscopically the cast was found to consist of coagulated blood, air bubbles, and leukocytes. Evidently one of the larger bronchi had become occluded by the blood clot, setting up the extreme dyspnea. [E.L.]

Typhoid fever in children of two and one-half years and less is discussed by Griffith and Ostheimer,¹ who give as far as possible the statistics of 325 cases collected from the literature. [A.O.J.K.]

Morphinodipsia.—Dipsomania is often the result of an acute psychic depression, a melancholia, and the reason individuals thus affected use alcohol is that they must find rest from their diseased mental condition. Some, instead of drinking alcohol, make use of ether, chloroform, or chloral; morphin is rarely used by these people. Kraft-Ebing² reports the case of an engineer of 35 who had learned to know the effects of morphin during an attack of trifacial neuralgia. Later he employed the drug because of sleeplessness brought on by worry and grief over family matters. After a fall from a horse he developed epileptic seizures, which were attended by dizziness, restlessness, irritability, unconscious wandering, amnesia, and precordial oppression. When in such a condition he sought and found relief in large doses .3 gm. (4½ grains) of morphin hypodermically administered. Between attacks he never used opium in any form, and even wished to fortify himself against its use. The frequent connection between epilepsy and dipsomania is considered. [E.L.]

The Widal Reaction.—Pitts³ gives the history of the Widal reaction, the method of obtaining it, and reports his observations. He concludes that a positive reaction can fairly be expected at some time or other in the course of the large majority of cases of typhoid. As positive evidence it is of decided value; as negative evidence it is untrustworthy. In cases other than typhoid the reaction is probably never present, though partial reactions must be rigorously excluded to avoid possible error. [W.E.R.]

Hemolytic Blood-plasma.—Ascoli⁴ concludes, after a consideration of the literature on the subject and his own experimental work, that plasma possesses the same blood dissolving properties which are peculiar to the corresponding serum varieties *in vitro* and *in vivo*. This action appears under such circumstances as to exclude positively the interference of osmotic factors. The events in question being absolutely analogous, it is believed the hemolytic and bacteriolytic actions of immune and normal serums depend upon a plasmolysis or plasmoptysis in consequence of changed osmotic conditions, when these fluids are transferred to strange serums. If we consider the supposition that the specific action of serums depends upon the combined action of two substances (amboceptors and complement), assisted by observations conducted with lytic serums, it is also believed these substances are present in unchanged plasma, and that coagulation, leukolysis and postmortem processes have nothing to do with their production. [E.L.]

A case of subpectoral abscess, supplemental to the cases reported by Musser⁵ is reported by Davis.⁶ [A.O.J.K.]

Abscesses of the Liver Following a Simple Ulcer of the Stomach.—Leclerc and Tavernier⁷ report such a case, which was diagnosed during life as carcinoma of the stomach, not involving the pylorus. Autopsy showed two large abscesses of the liver, and also the cicatrix of a simple gastric ulcer, the latter revealing the probable origin of the abscesses. They had evidently not resulted in the usual way, through the successive production of perigastritis and suppurative perihepatitis; but had their origin in septic matter transported by the portal vein or lymphatics, the process being similar to that which occurs in abscesses developing from dysenteric ulcers of the colon. Liver abscesses develop more commonly from dysenteric than from gastric ulcers for two reasons: (1) The presence in dysen-

¹ American Journal of the Medical Sciences, December, 1902.

² Wiener klinische Wochenschrift, September 25, 1902.

³ Yale Med. Journ., December, 1902.

⁴ Deutsche medicinische Wochenschrift, October 9, 1902.

⁵ American Journal of the Medical Sciences, November, 1900.

⁶ American Journal of the Medical Sciences, cxxiv, 476, 1902.

⁷ Lyon Médical, January 4, 1903.

¹ Münchener medicinische Wochenschrift, September 30, 1902

tery of a pathogenic germ endowed with special virulence; and (2) the presence of conditions in the lower bowel much more favorable to bacterial development than the acid secretion of the stomach. [B.K.]

The Frequency of Nursing.—Neumann¹ reviews numerous statistics from other cities comparing the relative number of breast-fed and artificially-fed infants. They compare very favorably with those he reports from Berlin, where nature's method of feeding children is constantly being less employed. While in 1885 55.2% of children were nursed by their mothers, in 1900 there were but 31.4%. In spite of this decrease in the number of nursed children the mortality from intestinal diseases has diminished steadily, thus showing the great improvement in the quality of the milk used throughout the city as well as in the city's general hygiene. [E.L.]

Concerning the Assimilation of Fat in the Organism.—Leo² gives the methods and results of his investigations on the digestion of fat. He found that fat is partially changed to glycerin in the stomach and intestines by the action of steapsin. The fatty acids and glycerin are absorbed in the intestines. A portion of the glycerin is absorbed alone. He examined the feces of a large number of persons who had ingested a considerable quantity of glycerin, yet never found a trace of that element. In disturbances of the digestive tract, the assimilation of fat does not always occur, but is discharged in the feces unchanged. On the other hand, persons who indulge in large quantities of fat may develop intestinal disorders without decreasing the fat metabolism. The conversion of fat in such cases may cause diarrhea by irritation of the intestinal mucous membrane. Normally no glycerin occurs in the urine. Leo found glycerin absent in the urine of all pathologic conditions excepting diabetes mellitus. [W.E.R.]

A New Method to Determine the Quantity of Milk to be Given to Artificially Fed Children.—Adam³ describes the method which he uses in the artificial feeding of newborn infants, and which he has found to be extremely valuable in nearly all cases in which artificial feeding was required. He uses in all cases whole milk, diluting it considerably during the first three months. The quantities which his experience has taught him to advise during these months, and upon which the children seem to thrive, correspond closely with those prescribed by others for breast-fed children, sometimes they are even smaller than these. Between the seventh and thirteenth week he advises 800 cc. in 24 hours, and does not increase the quantity to more than 1 liter per day up to the end of the first year. Concerning the quality of the milk mixture the condition of the child must remain the chief guide. The general rule which he followed was this: $\frac{1}{2}$ of the daily volume of milk corresponding to the age of the child was multiplied by the age of the child in kgrs., and this result corresponded to the amount of whole milk used—a child three weeks old and weighing three kgrs. (6½ lbs.) will usually get 500 cc. (1 pt.) of milk, of this 300 cc. (10 ozs.) is whole milk, the rest is dilution. In occasional cases, during the first few months of life, he considers warm cream mixtures in definite proportions (he gives tables for these proportions) preferable to the above-mentioned milk mixtures. [E.L.]

The Treatment of Pneumonia.—Wilcox⁴ advises the continuous, persistent, and generous administration of creosote carbonate; the careful adjustment of mechanical conditions; thorough evacuation of the toxins by all possible ways; temporary supplemental oxygen by inhalation; liquid diet until physical signs disappear; and the avoidance of antipyretics, opiates, ill-advised external applications, and slowly-acting heart remedies, as digitalis. His experience with this treatment comprises 33 cases with no deaths. [A.O.J.K.]

Analysis of Human Milk the Basis of the Artificial Feeding of Infants.—Meigs⁵ reviews the results of his various analyses of the human milk during the last 20 years and gives his clinical experience in the artificial feeding of infants. He reports a method for determining the amount of casein and

sugar in the human milk, and concludes that the human milk contains about 1% of casein. Artificially fed infants should not have the strength of their food increased at frequent intervals, as is generally advised, but the same food should be given with an increase in the amount as the child grows older. [W.E.R.]

Diphtheria with Persistent Trismus and Opisthotonos: Escherich's Pseudotetanus.—Snow¹ reports a case of mild diphtheria occurring in a boy aged 7 years, and associated with prolonged contracture of the masseter and dorsal muscles. From the third to the tenth day of illness laryngismus and violent generalized muscular spasms occurred; after the tenth day the disease assumed a tranquil type, with persistent trismus and opisthotonos. The contractures lasted 21 days, unaffected by tetanus antitoxin, but were eventually relieved by morphin. The condition is said to suggest Escherich's pseudo tetanus. [A.O.J.K.]

The Tanner's Trade in its Relation to Tuberculosis.—Immunity to tuberculosis is accorded to but few occupations; among these are the coal miners, the lime burners and plasterers, and especially the tanners. The latter have been said to be immune to a number of diseases at different periods of the world's history. It has been claimed for them that they never contracted cholera or plague, but especially in reference to tuberculosis has it been said that the atmosphere of tanyards is a preventive as well as a cure for the disease. Several observers, on the other hand, have collected figures to prove that not only are tanners not free from tuberculosis but it is even a frequent disease among them. Reitter² has made inquiries in 50 tanneries in and around Vienna, and reports the observations thus gathered. Diseases of the lungs are said to rarely ever occur in these places, and in a few cases where workmen have had tuberculosis when starting to work in tanneries their condition has improved very much. It must be remembered, however, that these observations are not based upon physicians' statements, but upon laymen's. [E.L.]

Concerning the Abuse of Boric Acid.—Dosquet-Manasse³ reports his investigations on meat preserved with boric acid. He found that this drug, as an efficient preservative, must be used in large quantities. His control experiments proved that boric acid does not prevent putrefaction entirely but that it may conceal the degenerative process. All antiseptics which destroy bacteria also decrease the nutritive value of the food. The aseptic process is the proper preservative method and should be employed in place of antiseptics. Dosquet-Manasse concludes that boric acid is a powerful cell-poison, and should be excluded as a food preservative. [W.E.R.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

REVIEW OF LITERATURE

Stab Wound of the Kidney.—A carelessly thrown weapon struck a bystander, who was leaning forward, in the back, producing a stab wound 5 cm. (2 inches) long, hemorrhage being profuse. Tubenthal⁴ saw the patient the following day, and noticed a reddish fluid staining the dressings. The urine was found to be bloody. Upon incision a longitudinal wound of the kidney was found. It was packed with iodoform gauze, the patient making a normal recovery. [E.L.]

Eosinophilia in Pelvic Lesions and in the Vermiform Appendix.—Weir,⁵ from a study of the subject, concludes: 1. Eosinophiles take a prominent part in the cellular infiltration associated with inflammatory and suppurative processes of the pelvic organs. 2. In such conditions they usually occur in largest numbers in the subacute stage and associated with connective tissue hyperplasia. 3. Eosinophilic infiltration is found in most cases of carcinoma of the cervix of the uterus, and in almost all cases of pyosalpinx and ovarian abscess. 4. In inflammatory conditions of the endometrium eosinophiles occur in small numbers and in but few cases. 5. Eosinophiles

¹ Deutsche medizinische Wochenschrift, October 30, 1902.

² Berliner klinische Wochenschrift, December 8, 1902.

³ Jahrbuch für Kinderheilkunde, 1902, Vol. lvi, p. 29.

⁴ American Journal of the Medical Sciences, 1902, cxxiv, 481.

⁵ Archives of Pediatrics, October, 1902.

¹ American Journal of the Medical Sciences, cxxiv, 1006, 1902.

² Zeitschrift für Tuberkulose und Heilstättenwesen, 1902, Vol. iii, p. 325.

³ Berliner klinische Wochenschrift, December 15, 1902.

⁴ Münchener medizinische Wochenschrift, November 11, 1902.

⁵ American Journal of the Medical Sciences, 1903, cxxv, 74.

represent a large proportion of the cells forming the stroma of the mucosa in the normal and the diseased appendix. 6. In inflammatory conditions of the pelvic organs associated with an eosinophilic infiltration of the tissues the percentage of eosinophiles in the circulating blood is rarely increased, and usually decreased. [A.O.J.K.]

A Curious Case of Emphysema.—The case reported by Taylor¹ was that of a boy of 15, who while running fell and struck the frozen ground just above his right eye. There was no visible external injury nor constitutional shock. A few minutes later the boy blew his nose, when the right upper eyelid immediately bulged out, completely closing the eye. The condition is supposed to have been one of slight, fissured fracture of the anteroinferior osseous wall of the frontal sinus, through which air escaped during the increased nasal tension. [A.G.E.]

Ligation of the Inferior Vena Cava, Followed by Recovery.—In a woman of 36, Henzel² performed a nephrotomy on account of pyonephrosis, and later a nephrectomy. On account of numerous adhesions to all neighboring structures, operation was difficult and attended by tearing of the inferior vena cava. By means of two circular catgut ligatures the vessel was ligated above and below the wound. Recovery was interrupted, except for a slight edema of the lower extremities. Since then the patient has enjoyed perfect health. [E.L.]

Bloodless Reduction of Phimosis.—Graeser³ after trial approves of Orłipski's bloodless method of overcoming phimosis; he dilates the prepuce in all directions with a dilating forceps several times daily until it will retract over the glans. Even cicatricial stenoses can in this manner be overcome. [E.L.]

Surgery of the Stomach.—VanderVeer⁴ reports one case of gastrostomy and two of gastrectomy. The first was that of a woman of 56, the diagnosis of esophageal stenosis due to carcinoma being made. Gastrostomy was performed. Nine months later the patient had gained 15 pounds and was taking a normal amount of nourishment, partly by mouth, partly through the tube. VanderVeer is satisfied that more good is accomplished by conservative than by radical operations upon the stomach. Gastrectomy is rarely indicated, though the surgeon is at times led to perform this by his great desire to remove all of a malignant growth. This principle is illustrated by the case of a woman of 42, gastrectomy being performed to remove a carcinoma of the stomach, three-fourths of the organ being involved. The patient died within 24 hours. Gastrostomy would probably have prolonged her life. The third case was a man of 55, gastrectomy for sarcoma of stomach. Excellent results followed this operation, the patient working as a blacksmith nine months later, having gained 31 pounds. [A.G.E.]

Sarcoma of the Third Cervical Segment.—Putnam, Krauss, and Park⁵ report a case of sarcoma of the third cervical segment occurring in a man of 45, and removed at operation, with marked amelioration of the patient's condition. From a study of the literature of spinal cord tumors, they believe their case to be unique for the following reasons: 1. It is the only tumor of the spinal cord affecting the upper cervical region which has been so far recorded. 2. It is the only cervical cord tumor which has gone on to an uninterrupted course toward recovery. 3. It was definitely located and quickly removed without sacrifice of spinous processes and laminae, and the short incision made a remarkably rapid closure. 4. The involvement of the phrenic nerve added an element of danger, which was quickly removed during the progress of the operation. 5. From the surgeon's standpoint it was located in the most inaccessible portion of the spinal cord, by virtue of the cervical curvature of the spinal column offering a concave field for operation instead of a convex. [A.O.J.K.]

Rhinogenic Purulent Meningitis and Cerebrospinal Meningitis.—Struppler⁶ reports three cases of fatal cerebrospinal meningitis, two of which were considered epidemic, as no other primary focus could be discovered clinically; lumbar puncture was negative in both cases; the third was believed to

be otogenic, as a large polyp grew from the tympanic membrane. Operation proved this erroneous. Autopsy revealed in all cases purulent leptomeningitis of brain and spinal cord, associated with latent suppuration of the antrum of Highmore. In the third case the ethmoidal sinuses were also filled with pus. [E.L.]

Tissue Changes Induced by the Röntgen Ray.—Ellis,¹ from a review of the literature and a study of three cases, summarizes as follows the changes induced in the tissues by the Röntgen ray: (1) Necrosis of cells and trabeculas in varying degree (in addition fatty degeneration in one case); (2) increase of elastic tissue in the three cases examined, both before and after exposure; (3) fewer areas of lymphocytic infiltration in one case after exposure—about equal numbers in the other cases; (4) a tendency to occlusion of vessels by deposits on their inner surfaces; and (5) practically entire absence of infiltration of polymorphonuclear leukocytes. While he believes that conclusions are hardly warranted as yet, the following thoughts suggest themselves: (1) Back and others lay great stress on bloodvessel changes as the cause of the necrosis. While endarteritis is probably induced by the Röntgen ray, the accompanying tissue necrosis seems out of proportion to the vessel changes, suggesting the possibility of these being *pari passu* results of the same influence, instead of cause and effect; (2) the presence of immense numbers of cocci and bacilli in the tissues in one case after 20 exposures to the Röntgen ray would argue against the possession of bactericidal power by these rays. The pathogenicity of the organisms, however, was not proved; (3) the unsatisfactory clinical results, as well as the slight microscopic changes in Case III can probably be safely attributed to the presence of the exceedingly numerous keratinized areas or "pearls." This emphasized the importance of cureting or cutting away diseased tissue, whenever feasible, before instituting treatment by the Röntgen ray. [A.O.J.K.]

Inflammatory Tumor of the Abdominal Wall Produced by a Foreign Body.—Wagner² removed from the abdominal cavity of a woman, who had passed through two attacks of appendicitis, and was believed to have either a sarcoma of the abdominal wall, actinomycosis, old paratyphlitis abscess, or ovarian tumor, the jawbone of a codfish, which had been swallowed two months before the first "appendiceal" attack. It had become wedged in the cecum, perforated backward, and formed there an abscess the size of a man's head, which had gradually become surrounded by dense granulation tissue. After its removal recovery soon followed. [E.L.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Ovarian Fibroma.—McCann³ reports the successful removal of an ovarian fibroma from a patient aged 73. The case is of interest not only on account of the age, but as showing that a solid ovarian growth may increase in size and probably even originate after the menopause, and yet be of a simple character. [w.k.]

Cesarean Section for Obstruction Due to Fibroid Tumors.—Lewers⁴ reports two cases of cesarean section in women, aged respectively 35 and 42, because of obstruction to normal delivery by fibroid tumors. In both cases the uterus was allowed to remain, and in both the children lived and the mothers recovered.

Cesarean Section in Eclampsia.—Guérard⁵ reports a case of eclampsia in which cesarean section was performed with fatal result. When first called to the case he found the patient in a state of coma; but as it had only been a few hours since the first signs of labor, it was decided to wait, using remedies other than surgical. Two hours later examination showed a collum five cm. (two inches) long, very firm, with no signs of elasticity, os completely closed, and no signs of

¹ Chicago Medical Recorder, January, 1903.

² Bull. et Mem. de la Soc. de Chir. de Paris, 1902, Vol. xxviii, p. 568.

³ Münchener medicinische Wochenschrift, November 4, 1902.

⁴ Albany Medical Annals, February, 1903.

⁵ American Journal of the Medical Sciences, cxxv, 1, 1903.

⁶ Münchener medicinische Wochenschrift, November 11, 1902.

¹ American Journal of the Medical Sciences, 1903, cxxv, 85.

² Münchener medicinische Wochenschrift, November 18, 1902.

³ British Medical Journal, January 17, 1903.

⁴ Lancet, January 17, 1903.

⁵ Zentrablatt für Gynäkologie, December 6, 1902.

any labor pains. Cesarean section was rapidly performed by transverse incision; but the patient never recovered consciousness, and died a few hours later. Guérard was convinced that the operation should have been performed much earlier, upon the first appearance of coma. In this case there had been no examination of the urine. He believes that in all difficult cases of eclampsia in pregnancy, without the least signs of labor activity, cesarean section should be performed upon the first symptoms of coma. [w.k.]

Labor in a Patient Having Double Uterus and Vagina.

—This case is reported by Williams,¹ who examined the patient, aged 26, 18 months after marriage. Leukorrhœa was then present. Two distinct vaginas, each having a hymen, and separated by a wall one-fourth inch thick were found. Two cervixes, into each of which a sound could be passed 2½ inches, were also present. There was no communication between the vaginas or the uterine cavities. Operation was advised and refused. Later the patient became pregnant and then consented to operation. The entire septum between the vaginas and cervixes was removed. Labor at the end of term was normal, the child weighing 7½ pounds. But one placenta was present. Examination two months afterward showed but one cervix and but one cavity to the uterus, the septum in the latter having been entirely obliterated during labor. [A.G.E.]

Ovarian Embryomas or So-called Ovarian Dermoid Cysts.—Jelke,² from a study of the literature and of three personal observations, concludes: 1. It has been shown in the specimens described that, though each has an anatomy peculiar to itself, still there is much in common among them, and also that they are similar to the cases recorded by Pfannenstiel, Kroemer, Wilms, and others. 2. Structures derived from the three embryonal primordial layers were found in each of them, with the exception of the first, and here the microscopic search for the endoderm was prevented by the great degeneration of the tissues, so that only the coarser structures could be made out. 3. The extent of the development along different lines varied greatly in each case, though all of them were turned to pathologic growth comparatively early when compared with the normal embryo. 4. The structure of the cyst wall was seen to be similar to other cysts derived from Graafian follicles. 5. The size of the cyst was independent of the size of the embryoma within certain limits, but the size of the cyst seemed to vary in direct proportion to the amount of waste matter excreted by the embryoma. 6. The remains of the ovary from which these specimens developed, as well as the organ on the opposite side, were found to be either cystic or to have an abnormally large number of follicles approaching maturity. 7. In none of the specimens were any fetal inclusions, fetal remains, or congenital malformations found, and the rest of the genitalia of the hosts were normal with the exception of the cystitis in Case I, and the tubal pregnancy in Case II. So that the congenital formation of these tumors appears to be extremely doubtful. [A.O.J.K.]

Ovariectomy Seven Years After Vaginal Hysterectomy.

—Bantock³ in 1895 removed the uterus from a woman of 46, the whole cervix being converted into a mass of obstructed mucous follicles. Both ovaries appeared healthy and were left. Seven years later the patient was again operated upon for ovarian disease and a tumor weighing 5½ pounds and very adherent was removed with great difficulty. No trace of the other ovary could be found. This fact supports the theory that after the menopause the ovaries atrophy within three years unless attacked by disease. Bantock says the perfect health of the majority of women after the removal of both ovaries bears eloquent testimony to the fact that no injury has resulted, either mental or physical; and his observation during 25 years has shown the fallacy of the old idea that every woman must undergo certain symptoms at the climacteric; for the majority suffer no inconvenience whatever. [w.k.]

Endothelioma of the Ovary.—Lange⁴ gives the history of an unmarried woman of 41 who, in 1899, underwent laparot-

omy for the removal of an ovarian cyst on the left side. The right ovary appeared normal and healthy, and was allowed to remain. The recovery was undisturbed. Five months after the operation the patient had not recovered her health, and was now suffering from abnormal conditions in the chest diagnosed as pleuritic effusion with ascites, which pointed to tuberculosis or metastasis. Nothing in the history of the case indicated the former. There were repeated chest and abdominal punctures to withdraw the accumulated fluids, but the patient failed rapidly, and in a few weeks died of apparent pulmonary embolism. Necropsy showed the right ovary enlarged twofold, and the visceral and parietal peritoneum, especially in the region of the right broad ligament, studded with numerous metastatic knots of a grayish color. These under the microscope were found to be endothelioma. The same was true of the right ovary, so that the correct diagnosis was ovarian endothelioma, with widespread metastases. Lange questions the wisdom of permitting, in the case of women above 40, even an apparently healthy ovary to remain when removing the other for any neoplasm. [w.k.]

Uterine Fibroid.—Paton¹ reports the history of a case of uterine fibroid giving rise to intestinal obstruction. When he first saw the patient she was suffering from advanced intestinal obstruction and was considerably collapsed. It was, however, decided to open the abdomen and a tumor was found attached to a considerable length of the intestine and mesentery. As its removal so as to clear the obstruction was not practicable it was not attempted and she died in a few hours. The subsequent necropsy showed that the tumor was a transplanted fibroid of the uterus, from which organ it had become entirely separated, but upon the posterior wall of which was a short stalk, and from this doubtless the tumor had been disconnected. Instances of such transplantation are very rare, though two have come under the writer's notice since the one reported. [w.k.]

Menstruation in a Male.—Léris² reports this unique case as one of pseudohermaphroditism. The subject was 75 years of age, was married, and gave the history, corroborated by a sister, of having menstruated regularly for 37 years, beginning at the age of 18. The breasts were those of a male, the external genitals being partly male and partly female in type. The voice was that of a eunuch. Autopsy showed the presence of undescended testicles. Neither uterus nor prostate was found. No explanation of the apparent menstruation was furnished by the autopsy. [A.G.E.]

Extrauterine Pregnancy.—Sittner³ adds 16 to the previous 126 cases of extrauterine pregnancy which were ended by laparotomy, with the fetus living at the time of operation. These belong to a period since 1813. Of the 16 cases, 1 illustrated the rare form of pregnancy in the hernial sac in the inguinal region; in 7 the fetus had developed to an advanced stage in the original sac, 5 of these in the uninjured tube, 1 in the ovary and 1 in the ovarian tube; in 8 the fetus was outside the original sac, twice through rupture into the broad ligament and in the other cases into the abdominal cavity, where the fetus lay completely free in four instances; in 2 with placenta attached to an abdominal organ. One case was especially interesting, as the fetal sac was found between the liver and right kidney, to which it was firmly adherent. The placenta was about ⅔ attached to the peritoneal fold between the right under surface of the liver and the diaphragm, and ⅓ to the tissue of the under surface of the liver itself. The sac contained a living fetus. The maternal mortality in these cases was about 33%, a very high deathrate, probably largely due to the bad condition of the patient when brought to the hospital. Of the children, 7 had not reached an age to live after delivery. Of the others, 3 died after a few hours, 1 after three weeks of gastroenteritis, and 4 are still living. [w.k.]

Hysterectomy.—Morse¹ gives notes on 10 cases of hysterectomy for fibroid disease, and calls attention to cases 8 and 9 as showing that when a fibroid is surrounded by the uterine muscle and compressed by it, it is futile to wait and hope for the menopause at an age when loss of blood is not so well borne nor so rapidly recovered from as in earlier years. [w.k.]

¹ Buffalo Medical Journal, February, 1903.

² American Journal of Medical Sciences, 1903, cxxv, 6.

³ British Medical Journal, January 17, 1903.

⁴ Zentralblatt für Gynäkologie, January 17, 1903.

¹ British Medical Journal, January 17, 1903.

² La Médecine Moderne, December 17, 1902.

³ Zentralblatt für Gynäkologie, January 10, 1903.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

EDITORIAL COMMENT

Substitutes for Potassium Iodid.—There are a number of remedies of such well proved virtue that they are practically indispensable to the physician, but which, nevertheless, exercise very undesirable secondary effects that interfere seriously with their use in many cases. Such, for example, as potassium iodid, sodium salicylate, quinin, and tannic acid. The skill of the synthetic chemist is, we believe, much more beneficially exercised in the discovery of substitutes for these drugs that shall be free from their drawbacks, than in the multiplication of antipyretic and analgesic compounds of doubtful utility. These substitutes have increased so rapidly within the last few years that it is almost impossible for the busy physician to keep track of them. Many of them have had a brief day and passed to the limbo of dead medicines and canines; but others have proved to be of distinct value. A critical summary of these preparations would prove useful, and without binding ourselves to complete it, we propose to publish from time to time in the near future, editorial comment on the more important ones. This article will be devoted to substitutes for potassium and sodium iodid. The problem of finding some mode of exhibiting iodine in a therapeutically active form without the disturbance of the digestion which is often caused by the alkaline iodids, has engaged the attention of physician and chemist for a number of years. Some of the compounds therefore that we shall consider are, therefore, not new remedies in the strict chronologic meaning, yet they are employed with such comparative infrequency that their discussion in this connection is justifiable. The substitutes for the alkaline iodids of which we shall take note are iodoform, iodol, iodolene, iodobacilid, iodine-eigon, iodized starch, and iodipin.

Iodized Starch.—This remedy, although by no means a new discovery, having been employed to a certain extent for many years, is so generally unknown that it seems worth while to call attention to the properties that have been claimed for it. It has been known by various names, as iodamylum and amyli iodidum. The last name is unfortunate, because it would indicate that the substance is a chemically fluidity, which is probably not true. The term iodized starch is therefore much to be preferred, or if we wish to express it in Latin, amylium iodatum under which name it was at one time recognized by the U. S. P. A fairly stable compound at ordinary temperature, it is easily decomposed at a temperature of 100° F., especially in the presence of alkalis, liberating in its decomposition free iodine. It may be employed in the form of a powder containing 5 parts iodine to 95 parts of starch. According to Solomon¹ it has much less tendency to disturb the stomach than the ordinary preparations of iodine. Buchanan has given as much as 15.5 grams (½ ounce) at a dose, increasing gradually to 31 grams (1 ounce). Ordinarily it is employed in doses of from .2 to .6 grams (3 to 10 grains) administered either in capsule or pill. This dose, of course, represents a very small quantity of iodine, but it would seem that the iodine is liberated from the combination in a nascent form and exercises a comparatively much greater effect than the same quantity of the element represented in potassium iodid. It is also useful, according to Solomon, as an external application in certain conditions, such as sluggish ulcers, in which iodine has been found of service.

Iodoform.—This is one of the earliest substances recommended as a substitute for the alkaline iodids. Although it is capable of fulfilling all the internal indications of the iodids, it has not become very popular, and its use to-day is almost limited to tuberculous conditions. Glover, more than half a century ago, Shingleton Smith and the editor of this department, during the last two decades, and Jackson² very recently have reported a distinctly beneficial action in pulmonary tuberculosis; while Burney Yeo³ has observed remarkable results in tuberculous peritonitis by the conjoint use of iodoform ointment and pills containing iodoform and creasote, the ointment being absorbed through the skin. It may be given in doses of from 2 to 5 grams (3 to 80 grains) daily. The secret of its tolerance is to begin with small doses and increase gradually. It is given in chronic cases for which chronic treatment is

necessary, hence there need be no undue haste in enlarging the dose. Balsam of Peru is an excellent excipient.

Iodol, was originally recommended as a substitute for iodoform externally and seems to be slightly more popular as an internal remedy than its predecessor. Assaky has found it effective in tertiary syphilis in doses of from .4 to 2 grams (6 to 30 grains) a day. Maldarescu employed in the treatment of angina pectoris, the following formula:

Iodol 30 grains (2 grams.)

Extract of Licorice, a sufficient quantity.

Make 20 pills. Two pills twice daily.

Iodolene.—A compound of iodol and albumen is an insoluble powder, originally intended for an antiseptic dusting powder. It is placed on the market in two strengths; that intended for internal use, which may be denominated iodolenum internum, contains from 9 to 10% iodol. Jordan has found that it possesses the antisiphilitic properties of the iodids and that although it is generally well borne, it occasionally causes gastric disturbances and iodism. It is asserted that it is eliminated more slowly than potassium iodid and that its action is therefore more lasting, which property according to Rievel makes it valuable in the treatment of actinomycosis. It must be given freely at least 3 drams (12 grams) should be administered in the 24 hours, in doses of about 30 grains (2 grams) each.

Iodobacilid.—This preparation is made by the action of alkalis upon synthetically iodized albumen. It contains 10% of iodine and it is stated that it has an effect analogous to thyroïdin. It has also been employed as a substitute for the iodids in syphilitic affections.¹

Iodipin is by far the most important substitute for iodine. The manufacturers state that it is a chemical combination of iodine and oil of sesame. As it is put upon the market it contains 10% of iodine and possesses the oleaginous taste of sesame oil. According to Winternitz,² it appears after its internal administration in almost every tissue of the body. Being insoluble it has no effect upon the stomach, but is partially broken up by the intestinal juices and iodine liberated. According to Blank,³ however, it is in greater part absorbed unchanged and after its absorption gradually decomposed, liberating its iodine very slowly. It therefore exercises a much more persistent and prolonged action than do the alkaline iodids. Gastric disturbance is rarely caused by iodipin and it has been asserted that the drug does not produce the symptoms of iodism. Hoenigschmiedt⁴ gave a patient in the course of 10 weeks 590 cc. (20 ounces) of iodipin hypodermically and 11 cc. (¾ ounce) by the mouth, representing 74 cc. (2½ ounces) of iodine, or about 7.5 cc. (2 drams) of iodine per week. Another patient received hypodermically 15 cc. (½ ounce) of iodine daily, representing 1.5 cc. (24 minims) of iodine; in neither case was there any disturbance of digestion or any symptoms of iodism. Iodipin appears to be absorbed with great readiness, Frieser⁵ having detected it in the urine and saliva within 15 minutes after its administration by the mouth. It is rarely found in the feces after its ingestion, showing that it is completely absorbed. It would seem that it is absorbed less rapidly after hypodermic administration than when given by the mouth, as Frieser states that it takes two or three days to make its appearance in the secretions after subcutaneous administration. Iodipin seems to be useful for every purpose for which potassium iodid has been employed. The literature of its therapeutics is too large to be reviewed in detail. The reporters agree that in the conditions in which iodine is ordinarily employed, such as syphilis, neuralgia, asthma, arteriosclerosis, and the like, the remedy is fully equal to the iodids. Some observers rate it as superior; thus Klar⁶ reports a case of asthma in which potassium iodid, as well as arsenic and atropin, had failed, but which was promptly relieved by the use of iodipin. Kreiblich⁷ reports a case of actinomycosis of the cheek cured by local injections of iodipin. The drug is best administered in the form of an emulsion. Either of the following formulas may be employed, the preference being perhaps given to the emulsion made with egg:

Iodipin . . . . .	.60 cc. (2 fl. oz.)
Powdered acacia . . . . .	.30 cc. (1 fl. oz.)
Peppermint water . . . . .	.90 cc. (3 fl. oz.)
Syrup . . . . .	.30 cc. (1 fl. oz.)

Make an emulsion.

Dose: One to two teaspoonfuls.

Make an electuary.

Powdered cacao	} equal parts
Sugar	
Iodin . . . . .	.48 cc. (13 fl. drams)
Yolk of one egg	
Oil of cinnamon . . . . .	.1 drop

Dose: One to two teaspoonfuls a day.

When the patient objects seriously to the taste of the preparation it may be given hypodermically; about 10 cc. being injected subcutaneously rather than intramuscularly into the

¹ Merck's Archives, 1900, Vol. II, p. 484.² Merck's Archives, 1901, III, page 338.³ Lancet, 1901, Vol. I.⁴ Archlv. f. Derm. u. Syph. 43 u. 44 Bd.⁵ Deutsche med. Wochenschr., Vol. xxiii. No. 23.⁶ Die Med. Wochen., December, 1901.⁷ Aertzt. Zeit., 1901, No. 28.⁸ Med. News, Vol. lxxvi, p. 784.⁹ Deutsche med. Zeit., 1900, No. 97.¹⁰ Wiener klin. Wochenschr., 1902, No. 4.

gluteal region or the back. The fluid should be warmed previously, as when cold it is a little too dense for ready injection. We cannot dismiss the subject of iodipin without calling attention to its use as a diagnostic agent in determining the motor power of the stomach. Its value for this purpose depends upon the fact that it is not absorbed in the stomach but is very rapidly broken up in the intestine; ordinarily the iodine reaction with starch may be demonstrated in the saliva in 10 to 45 minutes after the administration of a dose of iodipin. If a longer time than this is required there is serious interference with the motor power of the stomach.¹

Eigon.—The eigon preparations are combinations of iodine (or bromine) with albumen or peptone. They have been used in surgery as substitutes for iodoform externally, and have been used in medicine internally as substitutes for iodids. The so-called sodic eigon or sodium iodalbuminate represents about 15% of iodine and has been recommended as a substitute for potassium iodid in syphilis and scrofula. Fischer and Beddies,² who have studied the effect of these preparations locally and internally, give them in doses of 3 grams (45 grains) daily, increasing gradually. Sodium-iodine-eigon is specially recommended in scrofula.

REVIEW OF LITERATURE

Preventive Treatment of Pericarditis.—Carrière³ believes that the heart should be watched in all infectious diseases which are liable to cause pericarditis. Daily auscultation is necessary in all cases of rheumatism and in all infectious diseases. Rheumatism should be treated energetically, sodium salicylate being the remedy of choice. For 3 or 4 days the patient should be given the following in 24 hours:

Sodium salicylate	1 to 3 grams (15 to 45 grains)
Syrup of bitter orange-peel	30 cc. (1 ounce)
Water	90 cc. (3 ounces)

The quantity of sodium salicylate in this prescription should vary according to the age of the patient. After the fourth day this prescription should be continued in smaller dose. In the other infectious quin is usually employed, in children, as follows:

Quinin hydrochlorate	0.06 to 0.6 gram (1 to 9 grains)
Glycyrrhizin	3 grams (45 grains)
Syrup	10 cc. (2½ drams)
Water	50 cc. (1½ ounces)

To be taken in tablespoonful doses in 24 hours.

In adults, quin sulfate should be given in doses of .2 gram (3 grains) four times a day. [L.F.A.] [The importance of *continuous rest* for some time after convalescence and during the active period, the value of the cold precordial coil or ice-bag, and of blistering below the clavicle as prophylactics against cardiac and pericardiac complications in infectious arthritis, cannot too often be emphasized. s.s.c.]

Treatment of Erysipelas by the Red Light.—Krukenberg⁴ has employed this treatment in 18 cases of erysipelas. The rapid fall of the fever and the mild evolution of the disease after treatment is explained by the absence of chemical rays in the red light. In certain infectious diseases, the active chemical rays predispose to dermatoses, but their action is not well understood. Ichthyol, tincture of iodine, and plasters do good in erysipelas by protecting the skin from the light and particularly from the chemical rays. In negroes this protection is afforded by the pigment of the skin. Däubler and Plehn assert that negroes rarely suffer from erysipelatous or phlegmonous affections. [L.F.A.]

The Diagnostic Value of the Blood Changes Produced by Syphilis and Mercury.—Justus⁵ reviews the literature on the subject of blood changes in syphilis, and finds most authors to be of the opinion that the untreated disease causes a diminution in the hemoglobin. The percentage begins to fall with the onset of secondary symptoms. The amount of decrease is in proportion to the severity of these symptoms, and a beginning rise in the hemoglobin is a sign of beginning involution of the exanthem. There is considerable disagreement, however, in regard to the behavior of the hemoglobin during a mercurial treatment of the disease. Justus reiterates the claims previously made by him that following the inunction or injection of a full therapeutic dose of mercury there occurs a quick and

decided fall of 10 to 20 points in the percentage of hemoglobin. This loss is recovered in one or more days. If injections are used, the drop may be repeated after each of several injections. Eventually, however, the hemoglobin rises again until it finally reaches a point above that at which it stood before treatment. No such drop in hemoglobin occurs when mercury is administered to healthy persons or to those suffering from other diseases than syphilis. These observations may have failed of confirmation by other writers for several reasons. It is of importance that the hemoglobin count be made sufficiently often, at least once daily. The characteristic fall takes place about 12 hours after inunction, or 8 to 9 hours after injection. The dose of mercury should be large, at least 3 grams of blue ointment, or its equivalent. Internal administration of mercury has no influence on the hemoglobin. The test is useful in tertiary, as well as secondary syphilis. It fails after the symptoms have begun to diminish in severity. [B.K.]

Ethyl Chlorid as a General Anesthetic in Obstetric Practice.—Lepage and Le Lorier¹ employ ethyl chlorid as a general anesthetic during parturition when the pain is not sufficiently severe to warrant the use of ether or chloroform, but the patient desires to avoid suffering. Under these circumstances, ethyl chlorid presents many advantages: 1. It is easily administered; the doses being always the same. 2. Anesthesia is obtained in from 30 to 60 seconds, and lasts for about four minutes without renewal. 3. The return to consciousness occurs very rapidly without headache, and is accompanied only occasionally by slight vomiting. Inhalations of ethyl chlorid may be employed with advantage under the following conditions: 1. In the course of labor, when it is urgent to extract the fetus with forceps, when an internal version is practised, or when the anterior foot is pulled down in incomplete presentation of the buttocks. In the latter case, anesthesia by ethyl chlorid has the advantage of allowing the patient to awake rapidly and to complete the expulsion of the fetus by her own efforts. 2. During delivery ethyl chlorid may be used when the accoucheur is obliged to remove the placenta from the uterine cavity, or exceptionally to extract the membranes when the greater part of them remain in the uterus and it is necessary to remove them. 3. After delivery it may be used when the insertion of several sutures into the perineum is required. During pregnancy ethyl chlorid may be used as a means of diagnosing pelvic deformities. [L.F.A.]

Treatment of Malarial Hepatitis.—Lemanski² recommends the following treatment of malarial hepatitis: The patient should not be allowed alcohol in any form; this is imperative, for the greater number of these patients are addicted to the use of alcohol. Quinin, arsenic and alkaline salts are the principal drugs used in this condition. They may be employed as follows:

Sodium cacodylate	0.01 gram (¼ grain)
Quinin sulfate	0.5 gram (7½ grains)
Sodium bicarbonate	0.5 gram (7½ grains)

For one cachet. One three times a day.

Purgatives act well in some cases. Hydrotherapy is indicated in all cases, but its application must be carefully watched by the physician. For nervous, impressionable patients the hot spray douche may be used; its application must be short and progressively colder each day. If the liver is not too painful the local hepatic douche with a special apparatus is indicated; a cold jet may be directed against the legs, but never on the abdomen. Two douches a day are necessary. The hepatic douche must be cold and very short, or alternately hot and cold. It is very important that the percussion of this organ be not too violent. This local douche may be followed by a general douche. The administration of from 30 to 100 grams (1 to 3½ ounces) of cooked calf-liver is considered a useful adjuvant to this treatment. [L.F.A.]

FORMULAS, ORIGINAL AND SELECTED.

In Subacute, Atonic Gastric Catarrh.—

Compound tincture of iodine	1 cc. (16 min.)
Compound tincture of cinchona	60 cc. (2 fl. oz.)

Mix. Dose: One or two teaspoonfuls in water before each meal. [s.s.c.]

¹ C. Werner: Wiener klin. Wochenschrift, Vol. xiv, No. 7.

² Deutsche med. Wochenschrift, Vol. xxiii, No. 23.

³ Bulletin Général de Thérapeutique, Vol. cxliv, No. 16, 1902, p. 634.

⁴ Lyon Médical, Vol. cxix, No. 42, 1902, p. 547.

⁵ Deutsche Archiv für klin. Med., Bd 75, Heft. 1 and 2.

¹ Bulletin Général de Thérapeutique, Vol. cxliv, No. 17, 1902, p. 670.

² Bulletin Général de Thérapeutique, Vol. cxliv, No. 6, 1902, p. 232.

In Diabetes Mellitus with Albuminuria.—

Gold and sodium chlorid005 gram ($\frac{1}{12}$ gr.)
 Uranium nitrate008 gram ($\frac{1}{8}$ gr.)
 Codein008 gram ($\frac{1}{8}$ gr.)
 Mix. One pill four times daily. [s.s.c.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended February 7, 1903:

SMALLPOX—UNITED STATES.

		Jan.	Deaths
California:	San Francisco	Jan. 18-25	8
Illinois:	Chicago	Jan. 24-31	14
Indiana:	Elwood	Jan. 24-31	2
	Evansville	Jan. 24-31	4
	South Bend	Jan. 24-31	1
Kentucky:	Lexington	Jan. 24-31	12
	Newport	Jan. 24-31	1
Maine:	Biddeford	Jan. 24-31	26
Maryland:	Baltimore	Jan. 24-31	2
Massachusetts:	Boston	Jan. 24-31	7
	Haverhill	Jan. 24-31	3
	Grand Rapids	Jan. 24-31	9
Michigan:	Grand Rapids	Jan. 24-31	9
Nebraska:	Omaha	Jan. 24-31	1
New Hampshire:	Manchester	Jan. 24-31	3
New Jersey:	Camden	Jan. 24-31	4
	Hudson Co., includ-		
	Ing Jersey City	Jan. 25-Feb. 1	5
	Newark	Jan. 24-31	2
New York:	New York	Jan. 24-31	3
Ohio:	Cincinnati	Jan. 23-30	12
	Cleveland	Jan. 24-31	10
	Dayton	Jan. 24-31	1
Pennsylvania:	Altoona	Jan. 20-31	6
	Imported from Pittsburg		5
	Eric	Jan. 24-31	9
	Johnstown	Jan. 24-31	10
	McKeesport	Jan. 24-31	3
	Philadelphia	Jan. 24-31	29
	Pittsburg	Jan. 24-31	16
	Pottsville	Jan. 24-31	11
South Carolina:	Charleston	Jan. 24-31	3
	Greenville	Jan. 17-24	1
Tennessee:	Memphis	Jan. 24-31	2
Utah:	Salt Lake City	Jan. 17-24	16
Washington:	Tacoma	Jan. 18-25	1
Wisconsin:	Milwaukee	Jan. 24-31	8

SMALLPOX—FOREIGN.

Canada:	Hamilton	Jan. 1-31	1
	Winnipeg	Jan. 17-24	1
France:	Marselles	Dec. 1-31	37
Great Britain:	Birmingham	Jan. 10-17	1
	Bradford	Jan. 10-17	35
	Dublin	Jan. 10-17	2
	Liverpool	Jan. 10-17	42
	London	Jan. 10-17	2
	Manchester	Jan. 10-17	16
	Nottingham	Jan. 10-17	13
India:	Bombay	Dec. 23-Jan. 6	18
Italy:	Palermo	Dec. 27-Jan. 30	24
Mexico:	City of Mexico	Jan. 11-18	3
Russia:	Moscow	Jan. 3-10	3
Spain:	Malaga	Dec. 1-31	10
Straits Settlements:	Singapore	Dec. 13-20	1

YELLOW FEVER.

Colombia:	Panama	Jan. 19-26	4
Ecuador:	Guayaquil	Jan. 3-17	35
Mexico:	Vera Cruz	Jan. 19-26	4

CHOLERA—INSULAR.

Philippines:	Manila	Dec. 7-13	7
	Provinces	Dec. 7-13	318

CHOLERA—FOREIGN.

Malta:	Quarantine Island	Jan. 17	7
	From Alexandria		1
Egypt:	Alexandria	Jan. 5-12	1
Straits Settlements:	Singapore	Dec. 13-20	5

PLAGUE—INSULAR.

Hawaii:	Honolulu	Jan. 18	1
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PLAGUE—FOREIGN.

India:	Bombay	Dec. 23-Jan. 6	341
	Karachi	Dec. 21-23	39
Mexico:	Mazatlan	To Jan. 5	60

BYARS, C. R., contract surgeon, is granted leave for one month.
 OHLINGER, LORIN B., contract surgeon, is granted leave for one month, from about March 1.
 LORD, LESTER W., contract surgeon, is granted leave for one month.
 KENNEDY, JAS S., contract surgeon, now at Chambersburg, Pa., will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.
 SCHUMACHER, FREDERICK, hospital steward, is relieved from further duty at Fort Santlago, Manila, P. I., and will proceed to San Francisco, Cal., and will report to the commanding general, department of California.
 BROWN, IRA C., contract surgeon, now at Buffalo, N. Y., will proceed to Fort Niobrara for duty.

Changes in the Medical Corps of the U. S. Navy for the week ended February 7, 1903:

CURL, H. C., passed assistant surgeon, discharged from treatment and ordered to duty at the Naval Hospital, Mare Island, Cal.—January 31.
 PLUMMER, R. W., passed assistant surgeon, detached from the U. S. S. Prairie and ordered to the Navy Yard, New York—January 31.
 FURLONG, F. M., passed assistant surgeon, detached from the Navy Yard, New York, and ordered to the U. S. S. Prairie—January 31.
 CURTIS, L. W., and PITTS, M. B., passed assistant surgeons, commissioned surgeons from December 2, 1902—February 2.
 SPEAR, H. R., and GROVE, W. B., passed assistant surgeons, commissioned passed assistant surgeons from November 7, 1902—February 2.
 SCHWEHIN, L. E., NELSON, H. T., JR., and GRIEVE, C. C., appointed acting assistant surgeons from January 29, 1903—February 2.
 PARWELL, W. G., medical director, retired, detached from the Marine Recruiting Station, Philadelphia, Pa., and ordered to the Navy Yard and Hospital, Portsmouth, N. H.—February 3.
 COOKE, G. H., medical director, retired, ordered to the Naval Recruiting Station, Philadelphia, Pa.—February 3.
 SPEAR, J. C., medical inspector, retired, ordered to the Marine Recruiting Station, Philadelphia, Pa.—February 3.
 BIDDLE, CLEMENT, surgeon detached from the Naval Recruiting Station, Philadelphia, Pa., and to continue duty at Naval Hospital, Philadelphia—February 3.
 MORRIS, L., passed assistant surgeon, detached from duty at the Naval Hospital, Philadelphia, Pa., and granted sick leave for three months—February 3.
 THOMPSON, J. C., assistant surgeon, detached from duty with the Marine Detachment, Dry Tortugas, Fla., and to duty on the U. S. S. Columbia—February 3.
 DEBRULER, J. P., assistant surgeon, ordered to the Naval Hospital, Norfolk, Va.—February 3.
 BROWN, G. L., acting assistant surgeon, to duty at the Naval Proving Grounds, Indian Head, Md.—February 3.
 JUDD, H. W., acting assistant surgeon, to the Naval Station, Key West, Fla., for duty at Dry Tortugas, Fla.—February 3.
 ROSSITER, P. S., acting assistant surgeon, to the Naval Recruiting Station, Baltimore, Md.—February 3.
 MURPHY, J. A., assistant surgeon, detached from the U. S. S. Don Juan de Austria, and to duty on the U. S. S. Monadnock—February 4.
 SEAMAN, W., assistant surgeon, detached from the U. S. S. Monadnock, and to duty on the U. S. S. Don Juan de Austria—February 4.
 HARMON, G. E. H., medical inspector, to duty at the Naval Station, Port Royal, S. C.—February 4.

Changes in the Public Health and Marine-Hospital Service for the week ended February 5, 1903:

GEDDINGS, H. D., assistant surgeon-general, detailed as recorder of board convened to meet at Washington, D. C., for the physical examination of an applicant for the position of second assistant engineer, R. C. S.—January 30, 1903.
 CARTER, H. R., surgeon, to report at Washington, D. C., February 6, 1903, for duty as temporary member of Sanitary Board
 BLUE, RUPERT, passed assistant surgeon, relieved from duty at Milwaukee, Wis., and directed to proceed to San Francisco, Cal., and report to Surgeon A. H. Glennan for duty—January 30, 1903.
 VON EZDORF, R. H., assistant surgeon, granted eight days' extension of leave of absence—January 30, 1903.
 KERR, J. W., assistant surgeon, to report at bureau for instructions—January 31, 1903.
 WARREN, B. S., assistant surgeon, relieved from duty as recorder of board convened to meet at Washington, D. C., for the physical examination of an applicant for the position of second assistant engineer, R. C. S.—January 30, 1903.
 ALEXANDER, E., acting assistant surgeon, granted leave of absence for twenty-seven days from February 1—January 29, 1903
 HAMILTON, H. J., acting assistant surgeon, granted leave of absence, on account of sickness, for thirty days from December 27—February 3, 1903.
 HARRIS, B. Y., acting assistant surgeon, granted leave of absence for ten days from February 21—February 3, 1903.
 SAMS, F. F., acting assistant surgeon, granted leave of absence for fourteen days from February 4—February 3, 1903.
 KOLB, W. W., pharmacist, granted leave of absence for twenty-eight days from February 12—January 30, 1903.

Appointments.

CARTER, HENRY R., appointed acting assistant surgeon for duty at Newport News, Va.—January 10, 1903.
 GRAY, ROBERT H., appointed acting assistant surgeon for duty Shreveport, La.—January 26, 1903.

Changes in the Medical Corps of the U. S. Army for the week ended February 7, 1903:

CHAMBERS, WILLIAM H., contract dental surgeon, is granted leave for eight days, from about February 1.
 GEORGE, W. R. S., contract surgeon, is granted leave for two months, with permission to apply for an extension of one month.

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The end of the San Francisco disgrace of concealment of plague is announced in the fact of the declaration of Dr. Buckley of the Board of Health that during the last sixty days no case of bubonic plague has been discovered in the city. The federal quarantine officers also agree, and vessels leaving the port are now given clean bills of health. There are no admissions on the part of those who have denied the existence of plague that their denials were either errors or lies. Perhaps that is too much to expect of human nature, and the profession will be so glad that the past policy is ended that we can afford to let the contention die. The U. S. Marine-Hospital Service deserves the gratitude of the profession and the nation for its long efforts to bring about an end of the policy of concealment and to prevent the spread of the disease. In this aim it has, since the inauguration of the new State administration in California, had the help of the Mercantile Joint Committee and of the State and City Boards of Health. That the United States has been spared the horror of a widely disseminated epidemic of the disease is surely not due to those who have stifled every dictate of conscience, professional and social, in obedience to an execrable selfishness. The lesson, however, must not be lost, and concealment of infectious disease by physicians at the command of commercialism should be an infamy never again possible in this country.

Blackmail and the Quack Business.—Doubtless every one has wondered that so many of the advertisements of nostrum venders and quack doctors offer to give treatment and prescriptions free. As it costs money to advertise, there must be a profit obtainable in some roundabout way. An old plan was to put in the prescription some secret drug that could only be had of the advertiser. A New York lay journal astonishes its readers with a clear-cut charge that these "treatment free" advertisers for gullibles usually with sexual disease, have a thoroughly organized business of blackmailing by means of the information they get from the weaklings who fill out the "information blanks" with every sort of nauseous detail about their symptoms, sins, and diseases. These blanks signed by the dupes are used to extort "hush money" from the victims. By comparing the information blanks of different persons the materials of social scandals are put together

and blackmail is again secured. "One advertiser receives a 'blank' from a husband; another in a different city secures a 'blank' from a wife. Put together at the headquarters of the combination, there is a story which those concerned will pay liberally to keep out of the papers." The Postmaster-General should get after these wretches.

The practice of medicine by those only having the proper knowledge, such is the wise demand of a bill now before the Pennsylvania Legislature. According to its provisions every one who shall profess to diagnose and treat disease by any means whatsoever shall pass an examination by the State Board in the fundamental branches of medicine. Four years of study in a recognized college must have been spent prior to examination. The foolish claim that one is not practising medicine because he does not give drugs or practise surgery is thus done away with. The special methods as to therapeutics which an applicant purposes to use are thus not recognized by the law, and hence one may become an eddyite, an osteopath, an allopath, etc., at his pleasure, providing he is outfitted with the requisite knowledge of anatomy, physiology, pathology, chemistry, surgery, and obstetrics. There is no doubt that one who has intellect enough to study these branches for four years and to pass the State Board examinations in them will also have enough to disavow the follies of quackery and humbug. We hope the bill will soon become a law.

The atypical school child is the subject of a most excellent article by a New York teacher, Miss Alida S. Williams, principal of the Girls' Department of Public School No. 33, and which is published in the *New York Commercial Advertiser* of January 17, 1903. It is most encouraging to find teachers meeting the obligations of modern science, both pedagogic and medical, with such broadmindedness and clearness. The normal or typical children constitute, of course, the majority, and ever since the establishment of the modern school system the atypical, the defective, and backward exceptions, already sufficiently afflicted by their physical and mental handicap, have been immolated by the necessities of the system for the good of the more fortunate. Later society must atone for the school sin, as the defective

becomes the pauper, the degenerate, or the criminal, who does not neglect to exact pay for his indiscriminating and neglectful upbringing. There is a just and growing recognition that shifting the burden of responsibility for the abnormal child upon the divinity called Heredity is neither scientific nor curative. The influence of the environment is greater than heredity, and saves valuable lives when fatalistic philosophies only wreck them. As high as 20% of all school children have been pronounced "subnormal in some point" by one authority. In Germany official investigation showed that 8% of the children of the school registration were "defective." In California of 10,000 school children, 10% were "mentally dull" and 3% "feeble-minded." On the whole, it may be said that at least 10% of all school children are "subnormal," and the question is emphatic—What is to be done for and with them by the overworked teacher in the overcrowded school? First, says Miss Williams, "all successful training of atypical children must be physiological." The training of the sensory and motor systems is fundamental. The school inspections by medical men at once determine which children are really unfitted for the work of the graded class. These should form a somewhat separate class (and yet not "herded") in each of the larger schools. These pupils when exhibiting malnutrition, traumatic injuries, and organic diseases, must be cured if possible of their diseases, to enable them to be properly educated. The specialization of these children must be such that no stigma, no reproach of "defectiveness," etc., shall be applied to them. The "neurotics" also form a part of the ungraded or special class, and all classes should be small, to allow of perfect individualization by the teacher. And this teacher must be one specially fitted for and loving her peculiar work.

Conditions of Practice in Ancient Rome.—There are many pessimists who affect to mourn for "the happy days of old," supposing that we have degenerated and the discomforts and diseases of modern life have increased rather than diminished. In his fine article on the "Medicine and Doctors of Juvenal," in the *Medical Library and Historical Journal* for January, 1903, Dr. Eugene F. Cordell gives a picture of the circumstances of the medical practitioner's life in Rome which suggests interesting comparisons with those of a modern city.

Owing to the great noise in the streets, none but the rich could sleep, and many an invalid died from want of rest. For a stream of carriages was continually passing in the narrow and crooked thoroughfares, and the drivers were perpetually engaged in noisy disputes and foul abuse of one another. If you were in haste, your passage was obstructed by the crowd. A rich man's litter, borne aloft upon stout shoulders, jostled you aside; those behind pressed upon your back; one man would dig into you with his elbow, another with a hard pole; your shoulder would be struck by a joist, your head by a beam, and a cask thrust against your shins. Your legs were bespattered with mud, on all sides you were trodden on and the nail of a soldier's boot would stick in your toe. The cooks scattered the burning coals as they hurried by with their patrons' meals, and your clothing was torn into shreds. One wagon loaded with a fir-tree, another with a huge pine, shook the streets as they advanced, the ends waving to and fro, threatening the people. Another wagon was loaded with stones from the quarries of the Apennines, and woe betide if the axle broke and the mass was

precipitated on the people. Who could find their scattered limbs or gather up the carcasses ground to powder? Then there were the dangers of the night when broken crockery, thrown out of the lofty windows, made dents in the pavement and threatened to break one's skull. Indeed, there were as many fates awaiting you as there were open windows where you passed. You might thank your lucky stars if they threw only the contents of the basins and pots upon you. Rash would he have been thought who went to supper without having made his will. Or your life was put in jeopardy by some drunken and illtempered fellow, ready to pick a quarrel with the first person he met. He took care to avoid the scarlet cloak and the long train of attendants, the many lights and the brazen lamp, but you whom the moon alone attended he despised. Or you met a worse fate if you fell into the hands of the numerous robbers, driven by the soldiers out of their lairs in the neighboring Pontine marshes and forced to seek refuge within the city's limits.

There are two differences that may be noted in the modern American city: The slums of today are scarcely preferable to the best streets of ancient Rome, but the slums of the old city were doubtless unspeakably worse. The best parts of the modern city are as much better than those of old as they are better than the most wretched. Then, second, betterment is the law of these times in all parts, whereas there was no progress possible for old cities until modern civilization with its social and medical ideals began to reorganize their diseases and evils.

Large or Small Hospitals?—Should the profession and lay benefactors encourage large hospitals and dispensaries exclusively, and thus extinguish the small ones, or should the existence of the small ones be stimulated and supported? The question is not easily answered if one ponders well the tendencies of the times and the ever-present evils of hospitalism in both large and small institutions. The difficulty really lies in the worthiness of two views—the scientific and educational, and the charitable or social. The large hospitals and dispensaries are necessary for medical education and must be kept up, because the cause of education and the advancement of science is primary and fundamental. The small institution is undoubtedly preferable for individualizing patients, for keeping a deadly mechanical routine from killing the personal relations of doctor, nurse, and patient, and for preserving the self-respect and gratitude of patients. In the large institution there may grow up a tyranny of subordinates and of patients which is as unprofessional as the quasiprivate ownership of which the small one is in constant danger. The establishment of a small poverty-stricken hospital by the egotistical endower, for the purpose of compelling the worship of his long name, portrait, and ghost, is pretty certain to result in a waste of money, an exhibition of silliness and a doing of evil. Beneficence and conceit do not mix well. Is it impossible to keep the large institution from being a soulless machine devoted to the exploitation of "clinical material?" Is it not equally possible to preserve the small one from the abuses of over-individualism? May the medical politician and the selfish schemer not be kept out of both?

Child Labor and Disease.—Continuous and increased zeal is being shown throughout the country in the crusade against child labor. One hesitates to say

anything that may weaken or prevent the good that may arise from the movement, and yet its advocates must remember that no purely anti movement is likely to be of service to humanity in the long run. All real reforms are founded upon desire for positive good, not only to do away with an abuse. There are worse evils than child labor, one of which certainly is vicious child idleness. In place of the labor the child must be given innocent play and helpful education. The reform of our sports is as necessary as the reform of disease-engendering labor. If one will watch several hundred street urchins playing football and exhibiting football morality he will, if not altogether hopeless, admit that they might fully as well be working in factories. If the many thousand messenger boys are left in idleness, uneducated and unguided, to the corruption of their surroundings, the work they do in running errands does not certainly make them worse. However, it is beyond all discussion that the law should stop the engendering of tuberculosis and other diseases, the perpetuation of ignorance, and the stunting of normal growth of body and mind that are the inevitable concomitants of child labor. It is said that there are some sixty special forms of industry coming under the head of "dangerous," and regulated by laws in England and in other European countries. In progressive America there is but one of these, that in reference to the use of emery wheels, with which the law concerns itself, and only seven States think this worthy of consideration. An uncompromising minimum should be demanded—no child labor before 14, and compulsory school attendance up to that age.

The treatment of astigmatism by wet packs was thoroughly tried by Darwin during his life of suffering, but his "beloved Gully" (*absit omen!*) was never able to relieve his patient, except temporarily, and then only by interdicting eye work. Later a physician famous in his day, Professor Davis, was accustomed to tell his internes at the hospital to use wet packs on all patients who complained of functional diseases, such as dyspepsia, neurasthenia, headache, etc. One hardly understands how corneal curves can be altered by the packs, yet even in our time there seems to be a slight tendency visible of a return to the therapeutics of Drs. Gully and Davis; hydrophathy is once more lifting up its eyes and even its shivering head among civilized people. It is not much talked about in books and lectures; the sacrifices, as usual, to the old disavowed idols are secretly carried out. It is true that this plan saves much trouble. There is no bother as to the true cause of functional nervous and digestional diseases, and the trend of popular opinion is flattered that all diseases are organic or contagious on the one hand, or imaginary upon the other. It also has another profound reason for being—it gives good ground for scorn of and indifference to all "riders of hobbies." Moreover, wet packs occupy the time and attention, both of the patient and of the interne, until, perhaps, something else may happen. The something else, however, that really happens may be the unexpected diagnosis elsewhere and later of astigmatism and the relief of the eyestrain that caused all the functional trouble of the perplexed patient.

Adultery and Adulteration.—It is not generally remembered that these two words are etymologically the same thing. Adultery is adulteration, and historically, the special reason for the heinousness of the sexual crime consisted, it must be confessed, not in the sin of itself, but in the evil consequences. These in adultery are greater than in other forms of in chastity, because in the former "the introduction of a spurious offspring into a family" is "a debasing by admixture of something else." The wrong to the husband who may thus be compelled by the wife's fraud to support the child of another is the cause of the legal and social opinion of the greater sin of this act than when committed under other conditions. It is curious to note that the word adultery is a latinized form which came into use with the beginnings of modern civilization in the fifteenth and sixteenth centuries. The older forms *avouterie*, *avoutrie*, *advoutrie*, etc., passed through the forms *adoultrie*, *adoultry*, *adultry*, to *adultery*. "Advowtry" was used by Scotch and Northern writers as late as 1688. Probably the deception and breaking of her word by the false wife added to the seriousness of the offense and made it much more hated than that of those expressed by the synonyms fornication, lechery, etc. It is also noteworthy that this feeling appears in the fact that the law, at least of some States, recognizes no such a crime as prostitution—a strangely anomalous fact, when the law is used to punish it.

Hereditary pauperism is a problem that we have mistakenly supposed concerned only the older nations and cities of Europe, but the evil is growing in our own country. So far back as 1883 the associated charities of Boston published a statement giving the data as to "ninety-one families which form thirty-one groups of cases related to each other by blood or marriage, all paupers in the technical sense, all receiving help from the city authorities. There are many more such groups in the registration files." It is becoming evident to all who have seriously interested themselves in social betterment that as a rule indiscriminate charity serves only to multiply the numbers of those who will take the help, rather than strive to become self-supporting. Both heredity and education unite to make the children of these lazy, shiftless, vicious, or extravagant classes grow up in the same habits and to perpetuate their kind until they form a distinct body encouraged by foolish almsgiving or selfish charity, and becoming genuine and persistent parasites upon the self-reliant and productive classes. The only way to avoid this is to call in the aid of the Society for Organizing Charity. This society makes a business of kind, careful and just investigation, so that the worthy shall be helped and the unworthy shall not cheat both the benevolent and the genuine unfortunate. Pauperism and disease, as we all know, are closely related.

The Cure Must Not Increase the Disease.—It would seem that there should be no need for discussion of this most self-evident rule of therapeutics, and yet there is more than enough evidence that in certain social diseases (causing genuine pathologic results in patients)

much of the attempted curing in reality serves to multiply the evil. Instances that might be cited are the increase of pauperism by almsgiving and out-door relief, compulsory legislation based on the idea that prostitution is a crime, some aspects of the drink problem, etc. Take as illustration the second. All careful investigators agree that the amount of syphilis and gonorrhoea in the community is greatly increased by punitive legislation as regards open prostitution. This is because such laws increase clandestine prostitution. The proper cure and one that does not multiply the disease, both social and infectious, is to establish hospitals, reformatories, etc., where every patient suffering from venereal disease may have immediate, scientific, and humane treatment in secrecy and in confidence. The extent of quack treatment, expensive and as unscientific as it is fraudulent, can be only partially estimated by the columns and pages of disgusting advertisements that fill the cheap newspapers of the city and the loathsome ones of the country.

The Training in Speech of Deaf Children.—

"The fact that all deaf children after leaving school must live their lives and earn their living among hearing people, and that heretofore so little has been done toward training them until they were of school age, has induced us to try teaching them to talk as nearly as possible at the natural age and then sending them to be educated with hearing people, among whom they must live their later lives." These are the words of Miss Garrett, the founder and principal of the (Philadelphia) home for the training in speech of deaf children before they are of school age. The aim of this beautiful charity is to approach as near as possible the natural home treatment with these unfortunates. It is remarkable how much can be accomplished by giving the same amount of speech and language through the eye as hearing children receive in their homes through the ear. To do this specially trained teachers are necessary if the child's education of this kind has been neglected. Parents should thus constantly speak to the deaf child from the earliest age when deafness has been discovered. Not to do this is to fail in justice to the child, and by doing so there is no limit of what the child is capable.

How little the professional politician cares for the public good is illustrated every day by our legislators. For fifteen years workers have labored to get bills through Congress to prevent adulteration of drugs, and during this time any legislation for politicians' purposes could claim attention and the desired bills secure passage. Now the "Statehood Bill" will again block the way of the drug-adulteration measure. And the farce will go on, no one knows how long. There is time to pass thousands of private pension bills, but none to prevent disease and improve the sanitary conditions of the whole people. The pure food and drug bill has been passed by the House, but until the bosses have their way as to selfish schemes it cannot get through the Senate. And until it does the nostrum and patent-medicine syndicates will be allowed to breed alcoholism and cocaineism and draw their millions from a patient and submissive democracy.

Newspaper Reporting and Dosage.—From *The Presbyterian* of January 28 we quote as follows:

Dr. Barrows injected into a large vein of the right arm "500 cubic centimeters of formalin, which is 40% of ordinary commercial formaldehyd gas in water." The patient immediately revived, her temperature dropped, and she showed marked signs of improvement. A test of the blood the next day revealed a diminished number of bacteria. A second injection of 750 cubic centimeters of formalin in the left arm reduced the temperature to normal, where it has remained for two weeks.

With recovery after such doses it is certain that all the laws of toxicology must be revised! It is hardly likely that this dose will be repeated by any physician on the authority of the foregoing report, but the value of the newspaper publication of medical facts is illustrated by the statement as to the percentage, etc., mentioned and the omission of the fact that the strength of the solution used was 1 to 5,000. Even in the medical reports there has been an oversufficient haste to argue a whole summer from a single swallow, and warnings are justified that conservatism as to formalin injections is highly advisable.

EDITORIAL ECHOES

Two professional casters-out of demons have engaged in an illuminating argument at Philadelphia. One is a native of the place, while the other is a "reformed physician from Chicago." It is a pity they do not agree, because to the unlearned mind their theories and methods seem to be about the same. The "divine healer" from the West has received a good deal of notoriety by summoning the lame, the halt, and the blind to his platform, and then, after formally exorcising the demons which caused these infirmities, pronouncing the patients cured, and hustling them out of sight so quickly that no one could examine just what had been accomplished. According to the claim of his followers, he cast out about 1,000 demons during business hours of one day. This was all very well, but the local "divine healer," who presumably felt the competition, sent out an open letter. "Why don't you heal yourself? Take off your own spectacles, if you can cure other people's eyes." The "reformed physician's" reply is adequate, though it smacks slightly of sophistry. "I am an old man," he said, "and the balls of my eyes have grown flat. But younger persons, under the age of 50, who wear spectacles, are possessed of demons, and if they had proper faith, the demons would jump out of them." This means, apparently, that if one's eyeball gets flattened at the age of 45, it is the work of a demon, but after five years of occupancy the demon can vacate the premises and the eye still remains flat. But if this is true of eyesight, it is true of everything else. Consider the little demon which causes indigestion. Granted that the good and wise man from Chicago can cast him out, does there come a time when the "host," as biologists say, is equally uncomfortable with or without the demon? There is no escape from the dilemma. Either demons cause measles or they do not. If they do, though the patient be 97 years old, the measles go away when the demons do. If not, we must go on believing that the germs are the really important performers, and the demons only incidental.—[*New York Evening Post.*]

Mortality from Pneumonia in Philadelphia.—There were 114 deaths caused by pneumonia in Philadelphia for the week ended February 14, making nearly one-fifth of the total number of deaths. For the same period there were 62 deaths from pulmonary tuberculosis, and of all the other diseases recognized officially as contagious but 40.

AMERICAN NEWS AND NOTES.

GENERAL.

Smallpox as officially reported in the United States from December 27 to February 13 amounts to 7,714 cases with 210 deaths. For the corresponding period of last year there were 15,617 cases with 355 deaths.

Miscellaneous.—PENNSYLVANIA STATE VETERINARY DEPARTMENT: A strong movement is on foot to have Dr. Leonard Pearson reappointed State Veterinarian. It is claimed that the department has made more progress during Dr. Pearson's short incumbency than in all its previous history. The high opinion in which Dr. Pearson is held was recently shown when he was chosen by the Federal Government to diagnose the disease of cattle in the New England States which proved to be foot and mouth disease and to organize the work of repression.—AUGUSTA, GA.: Dr. Thomas D. Coleman has been appointed president of the Board of Health of this city. Dr. Coleman has held several different professorships in the Augusta Medical College and now holds the chair of medicine.

EASTERN STATES.

Free Vaccination.—The great prevalence of smallpox in the coke region has induced the C. Frick Coke Company to issue an order stating that they will vaccinate without charge all their employes and their families. As this company has about 50,000 men on its pay-roll, it is estimated that this order will reach about 300,000 people. There has been expended \$10,000 for vaccination virus, and 50 physicians have been engaged to do the work.

Boston Hospital for Babies.—A hospital exclusively for babies is to be erected in Boston. There will be 50 beds, plenty of air and sunshine, a baby incubator and all the conveniences of a modern hospital. This building will be one of Harvard's already large collection and will cost \$136,000, of which \$76,000 has already been given. The building is to be erected in memory of Thomas Morgan Rotch, of Boston, a member of the class of 1901, and is given by his classmates. The age limit of babies shall not exceed two years.

Families of the College Bred.—President Elliott, of Harvard University, has obtained from the secretaries of the various classes that have graduated from Harvard data that led to the question whether the college graduates have families large enough to reproduce themselves in number. The figures are based upon the vital statistics of the Harvard College classes of 1872 to 1877 inclusive, which comprise the graduates from 25 to 35 years after graduation. It is not likely that these men will have many more children. On the assumption that the surviving descendants are one-half males, these classes have fallen 23% short of reproducing themselves. Of those graduated during this period 23% are unmarried, and those who are married have on an average only two children living.

NEW YORK.

Typhoid Epidemic Abating at Ithaca.—President Schurmann, of Cornell, states that among the students there are 62 cases of typhoid fever, of which only 7 are considered serious, while between 150 and 200 students have been sent to their homes owing to the fact that they showed typhoid symptoms. The last few days has shown a marked decrease in the number of cases.

Rockefeller Laboratory.—Announcement has been made that the site for the laboratory planned by John D. Rockefeller, whose experiments in the research of remedies for disease will be conducted by the scientific staff which he has engaged, has been selected. The laboratory will occupy three blocks of land on East river, New York. The site cost \$700,000. It is reported that it is to be placed under the direction of Prof. Simon Flexner.

Summer Course at Columbia University.—It is announced that the College of Physicians and Surgeons of New York City will establish summer courses in the department of medicine at the Columbia University. The courses, which will include the work in the various departments and which will cover a period of from three to five weeks, will be of a practical nature and especially adapted to the needs of the senior student and the practitioner.

Nurses for Public Schools of New York.—It is announced that the Health Department of New York has assigned nurses to 39 public schools in Manhattan. Necessary supplies are to be furnished to the schools, and principals are invited to give the nurses as much assistance as possible. The nurses are to examine the children as to cleanliness, and to instruct the mothers at their homes how to treat all cases of sickness. The school authorities are pleased with the assignments, and Dr. Maxwell believes that much good will result. The schools selected are in the congested districts of the East and West sides of Manhattan.

Formalin in Septicemia.—At a meeting of the New York Pathological Society many physicians expressed themselves as speculative of the results of the benefit to be derived from the injection of formalin in cases of septicemia. It appears from the discussion that in a number of cases in which formalin was injected into the veins of rabbits there followed cramps, convulsions, anemia; hence the physicians regard the procedure as dangerous, and if used at all should be given with greatest caution.

"Blochmisches Centralblatt."—This journal is published in Berlin under the direction of Ehrlich, Fisher, Kossel, Liebreich, Muller, Proskauer, Salkowski, and Zuntz. The objects of the publication will be:

- A—To report such experiments and observations of physical and employed chemistry which are of importance to the physician.
- B—Reports on the physiology of plants.
- C—Physiologic chemistry in the narrower sense (constituents of the body and their derivatives).
- D—Chemistry of the tissues and organs under normal and pathologic conditions.
- E—Chemistry of digestion, secretions and excretions, metabolism and blood.
- F—Ferments and fermentations, toxins of a nonbacterial nature.
- G—Chemistry of the pathogenic microorganisms (toxins, anti-toxins), phenomena of immunity.
- H—Toxicology and pharmacology.
- I—Hygienic chemistry, disinfection, examination of water.

As this is the only international organ devoted to these scientific fields, American observers and investigators will find it to their interests to prepare abstracts of their papers which have appeared since January 1, and will appear hereafter, and send them to Heinrich Stern [Editor for United States and Canada], 56 East Seventy-sixth street, New York City.

New York State Hospital for Crippled and Deformed Children.—The annual report of the surgeon-in-chief and the superintendent of this institution for the year ended September 30, 1902, has been issued. When the previous annual report was made there were 19 patients under treatment in the hospital. Since then 16 new patients have been received, 10 have been discharged, and 25 were under treatment at the conclusion of the report. The superintendent states that the hospital is crowded to its utmost capacity, and applications are constantly being received for further admissions, but on account of the overcrowded condition and restrictions as to age and deformity, these patients cannot be admitted into the institution. Of those now under treatment, 15 are suffering with hip disease, 1 with congenital dislocation of the hip, 1 with Pott's disease of the spine, 2 with clubfoot, 3 with deformity from infantile paralysis, 1 with lateral curvature, and 2 with white swelling of the knee. Reference is made to the great interest which the visit of Dr. Lorenz to this country caused, and the increased demand made for admission into the hospital. The hospital is established for "the care and treatment of any indigent children who may have resided in the State of New York for a period of not less than one year, who are crippled or deformed or suffering with a disease from which they are likely to become crippled or deformed."

PHILADELPHIA, PENNSYLVANIA, ETC.

New Jersey State Village for Epileptics.—The annual report of the Superintendent of the New Jersey State Village for Epileptics states there are in the village 30 patients—17 males and 13 females. The report contains a detailed account of the work accomplished, hours of labor, as well as the necessities of the village. Attention is called to the fact that the last Legislature did not appropriate sufficient funds for the extension and maintenance of the institution, and an appeal has been made for assistance in these particulars. The superintendent estimates that there is one epileptic for every 500 of population. From this he concludes that there are probably about 2,500 epileptics in the State.

New Jersey Sanatorium for Tuberculous Diseases.—The annual report of the Board of Managers of this institution, which has just been issued, contains much of interest regarding the prevalence of pulmonary tuberculosis in New Jersey. In order to ascertain, at least approximately, the number of persons in indigent circumstances suffering from the disease circular letters were sent to all the legalized practitioners throughout the State, numbering more than 2,000, asking for their cooperation in securing this information. From the answers received (615) it appears that the medical practitioners addressed had under their care no less than 2,148 cases of this disease and that of this number 450 persons were in indigent circumstances. From these statistics it is calculated that the total number of cases in the State is at least 5,000 and that the number of indigent patients is at least 1,000. Assuming that one-half of these cannot be benefited by sanatorium treatment there remain at least 500 to be provided for, and after allowing for those who will not apply for treatment, it was decided to recommend the erection of a sanatorium with a capacity of 250 patients. However, the cost of building such a hospital and furnishing it with all the modern appliances needful in the treatment of these patients will be at least \$300,000. As the sum provided for this work was only \$50,000 it was decided for the present only to select and purchase the site for the hospital, therefore a tract of land con-

taining about 550 acres was purchased near Glen Gardner. The land adjoins the Central Railway and the proposed site of the buildings is less than three-fourths of a mile from the station. It is easily accessible and at the same time secluded. The air is very pure, the soil is dry and porous and there is plenty of good water on the place, and altogether it is considered an ideal place for a sanatorium.

Bill Regulating Proprietary or Patent Medicines.—A bill has been introduced into the Pennsylvania Legislature which provides that any and all proprietary or patent medicines prepared, sold, or offered for sale in Pennsylvania shall contain upon the label a true and correct copy of the formula, ingredients or constituents of the same, together with a true and correct printed statement in English of the several and respective quantities or proportions thereof. No person shall be employed or engaged in the manufacture and the mixture, compounding or preparation of any proprietary or patent medicine who is not a regular graduate in pharmacy and so registered under the laws of this State. Persons violating this act are liable to a fine of \$1,000 and imprisonment of one year, or both, one-half the fine to go to the person furnishing the information.

Sanatorium Treatment for Inebriety.—A bill has been introduced into the Pennsylvania Legislature which provides for the commitment of persons addicted to the use of alcoholic or other intoxicating drinks to a hospital or asylum for restriction, care, and treatment. According to its provisions any two relatives of the alleged drunkard may apply by petition to the Quarter Sessions Court or magistrate, setting forth the facts upon oath, with an affidavit of at least two physicians based upon examination accompanying the petition, stating that in their opinion treatment in a hospital will be of benefit to him. If after a hearing the court is satisfied that the petition should be granted the person shall be committed to a hospital for treatment until the judge or magistrate shall be satisfied that further restriction is of no longer benefit, with the further provision that no commitment shall be for a longer period than one year and all commitments shall be reviewable under a writ of habeas corpus.

The Twelfth Annual Report of the State Board of Medical Examiners of New Jersey gives considerable space to the discussion of reciprocity in the matter of licentiates from other States. Medical reciprocity between New Jersey and other States whereby the examining board of one State endorses other licentiates in lieu of their own examination has been tried on the one hand and the individual merit of the applicant or endorsement has been tried on the other, and the latter has been found by far the most satisfactory to the present board of managers, and the mutual reciprocity system has been entirely abandoned. The report states that after wide experience and much consideration the board has adopted as a basis of endorsement the personal fitness and professional qualifications of the candidate, plus a State certificate of license, issued after examination in substantially the same medical branches and under essentially the same conditions as the law of the State and the regulations of its board require. Equally as high qualifications and as full compliance of the law are required of candidates for endorsement as of candidates for examination. This system could not prevail under the mutual reciprocity system, hence the abandonment of the latter. The five conditions of endorsement relating to the moral character of the applicant, the academic education, medical training, nature and extent of the State examination, and average attained, are fully set forth. According to the present report licentiates were endorsed who represented 26 colleges and eight State examining boards.

SOUTHERN STATES.

Statistics Relative to Typhoid Fever in the District of Columbia.—Abstracts from the Health Office records in Washington for the six months ended December 31, 1902, have been made public. During this period there were reported 1,290 cases of typhoid fever. Of these 156 terminated in death. In 25 cases no personal history of the patient was obtainable. It is believed that 154 cases were contracted outside of the District of Columbia, 93 by direct exposure to other cases, and 21 through infected milk supplies. The best endeavor of the department failed to disclose in any considerable number of the remaining 997 cases a common exposure to any ordinary source of typhoid fever other than the drinking water. Potomac river water is said to have been used exclusively by 739 of the patients included in this last class and to have been used in conjunction with other waters in 103 additional cases, making a total of 842 cases in which Potomac water was used. Well water is said to have been used exclusively by 99, spring water by 23, well and spring water by 21 and melted ice by 7.

WESTERN STATES.

Another edition of the "Vaccination Creed" amounting to 50,000 copies has been issued by the Chicago Health Department. Since this creed and explanatory circular were first published, one year ago, more than 1,000,000 copies have been printed and distributed by the department, by other health authorities, by railway managers, and by other large employers.

War on Bubonic Plague.—In view of the action of the conference of the State Boards of Health held recently in Washington, which declared that bubonic plague existed in San Francisco, the commercial organizations of San Francisco held a meeting recently and adopted resolutions urging the Governor and the Mayor and supervisors of San Francisco to take such steps as shall secure a prompt cooperation of the various boards, to the end that all danger from bubonic plague may be eradicated, that all fears of infection may be removed, that the confidence of the Boards of Health of other States and Territories may be restored, and that no injury, however remote, may result to the foreign and interstate commerce.

Mortality of Michigan for the Year 1902.—The total number of deaths registered during the year 1902 was 30,962, corresponding to a deathrate of 12.6 per 1,000 estimated population. For the year 1901 the number of deaths registered was 33,848, and the deathrate was 14.0. There were 2,886 fewer deaths registered for 1902 than for the preceding year. At certain important ages, deaths were returned as follows: Infants under 1 year of age, 5,754, or 18.6%; children aged 1 to 4 years, both inclusive, 2,214, or 7.2%; and elderly persons over 65 years, 9,081, or 29.3%. The diseases causing the greatest number of deaths were pneumonia, 2,907; pulmonary tuberculosis, 2,030; cancer, 1,441; diarrheal diseases in those under 2 years, 1,350. There were 1,951 deaths due to accidents and violence.

To Combat Whoopingcough.—The Bulletin of the Health Department of Chicago for the week ended February 7 contains the following:

The frightful mortality from whoopingcough this winter induces the department to call public attention to the claim of Dr. Cenex, of Bohemia, that the vapor of formalin is a specific and preventive of this disease. After citing a number of cases in which the cough was cut short within 24 hours, he concludes that

1. By the proper inhalation of the vapors of formalin it is possible to destroy the germs of whoopingcough—those existing on the mucous membrane of the respiratory organs and also those in the surroundings of the patients. By this means the disease is cut short and further infection inhibited.

2. In accordance with these experiences it seems advisable that schools, hospitals, churches and other localities should from time to time be thoroughly disinfected.

It is hardly necessary to add that the treatment should be directed or administered only by a physician.

Chicago's Health.—An eminent specialist in diseases of the throat, nose, and chest has addressed the laity of Chicago through the public press on the "Prevention and Cure of Pneumonia." In the course of his address he adduces the striking fact that the influence of dissipation on pneumonia is shown by a mortality of 79% in those given to the excessive use of alcohol. A peculiar feature of the smallpox situation in Chicago is the disproportionate number of colored persons afflicted with the disease. It is stated that according to the Census of 1900 the negro population of Chicago formed 1.6% of the total, which would give them about 30,000 out of a total of 1,885,000 at the present time. In this proportion if the whites neglected vaccination to the same extent as does the negro there would now be nearly 1,200 white patients with smallpox in the hospitals to balance the 19 colored patients, whereas there are but 14 whites. The Bulletin of the Health Department appeals to the negro leaders of intelligence and influence to do something to secure the vaccination of a class whose members come into such close personal relations with all others in the community.

CANADA.

Graduates of Medicine Must Pass More Rigid Examinations.—It is announced that a bill has been introduced in the Michigan Legislature which gives the State Board of Registration greater authority in passing upon the qualifications of physicians who seek to practise in that State. It is asserted that owing to the high standard of examination before the Ontario Medical Council, men who could not stand the test in Ontario, or who did not want to take the long course demanded in some institutions across the border have been flocking into Michigan in large numbers. In order to stop this practice the board is empowered to compel all Ontario graduates to spend at least one year at a recognized medical school in Michigan before being allowed to write on the State examination.

Medical Missionary Work in Labrador.—Dr. Wilfred Grenfell, the medical superintendent of the Royal National Commission to Deep Sea Fishermen, in a lecture which he recently delivered in Toronto, stated that the mission now represents about 30,000 people. The work is purely medical in character and the constant object is to reach isolated cases of sickness among fishermen in Labrador and Newfoundland. Dr. Grenfell's field of work covers about 1,500 miles of the coast, and he is assisted by two physicians and two trained nurses. There are three hospitals in connection with the mission, and two hospital ships. The hospitals contain 24 endowed cots. The growth of the work is seen from the fact that in 1892 there were about 900 patients treated, while last year there were 2,774. The expense for last year amounted to \$20,000, and of this sum \$2,000 was contributed by Canadians.

FOREIGN NEWS AND NOTES

GENERAL.

An epidemic of "sleeping-sickness" is reported to be spreading rapidly in British East Africa. Great fears are entertained that the disease may reach the seacoast, in which event it might be conveyed to other countries. It is reported that in one year 50,000 natives succumbed to the disease. The *British Medical Journal* announces that the committee of the Royal Society appointed to investigate this subject has received reports from the observers sent by the society to Uganda in July, 1902. The researches so far made not being considered conclusive, Lieutenant-Colonel Bruce, who is a member of the committee, will proceed at once to Uganda to superintend further investigations as to the nature, mode, spread, and means of prevention of the disease. Dr. Castellani, a member of the original expedition, is still in Uganda and claims that he has discovered the parasite which is the cause of the disease.

Management of Cholera Epidemic.—The Public Health Reports give the following instructive and very interesting account of the management of the cholera epidemic in Egypt. It demonstrates clearly what may be accomplished when modern scientific measures are vigorously applied. The first case of cholera was reported in the interior of Egypt July 15, 1902. The disease spread rapidly to all parts of the country. By the middle of September there were more than 1,500 new cases per day. After that period, as the sanitary measures became perfected, there was a rapid decline in the number of cases. By December 1 the disease had been entirely stamped out, with the exception of a few cases at Alexandria and at a small number of the villages. By January there was only an occasional case at Alexandria. The total number of cases reported to date for all Egypt was 39,892; total number died, 33,986; total number recovered, 5,906. The general opinion among the sanitary authorities is that water and possibly a few food products are the only means by which the diseases were spread. The principal food products suspected are those which are generally washed with water, such as dates, lettuce, etc. It is not believed that the Nile was infected, or at least only locally here and there. Experiments made here recently seem to indicate that any running stream of the size of the Nile does not become sufficiently infected to convey such a disease as cholera. The experiments consisted in placing large numbers of *Bacillus prodigiosus* in running water and attempting to recover the organism a short distance below. The results were always negative. The measures employed to combat the epidemic were isolation, disinfection, and the supplying of drinking water free from cholera germs. The wells were considered the principal source of infection. More than 10,000 of these were disinfected in Cairo alone. Taps from which free drinking water could be obtained were temporarily constructed in all the infected districts of Cairo. In districts where this was done there was an almost immediate falling off in the number of cases. In the villages artesian wells were bored and the water from them alone used. The disease in such places was checked almost immediately. Persons afflicted with cholera were immediately taken to an isolation hospital. All fabrics found in the infected houses were taken to the disinfecting station and disinfected with steam. All containers for fluids were broken and new ones issued in their stead. The floors of the houses and walls to a height of about 5 feet were sprinkled with a 1 to 1,000 mercuric chlorid solution. This was followed by whitewashing the walls with a freshly prepared solution of unslacked lime. The wells were disinfected either with potassium permanganate or lime solution, the principal object being to so discolor the water in the wells that the natives would not drink it. When these measures were not effective sulfuric acid was poured into the wells. In the neighborhood of Cairo the Nile was patrolled by guards and vessels in order to prevent people from infecting it with dejecta or otherwise. The dead were wrapped in sheets saturated with mercuric chlorid solution.

CONTINENTAL EUROPE.

An epidemic of enteric fever which is prevalent at Prague has assumed such serious proportions that the German deputies from this district have petitioned Parliament to adopt measures for the alleviation of the sufferers and against the spread of the disease. The Governor of Bohemia has also issued orders to the same effect. The disease is attributed to the foul water of the Moldau river, which supplies the city, and to the defective drainage of the city.

Annual Deathrate of Berlin.—The rate of mortality in Berlin was so low during the year 1902 that the total number of deaths was less by 3,000 than during the foregoing year. In the year 1902 the total number of deaths here amounted to only a little more than 30,700, while during the year 1901 there were registered in round figures 34,100 deaths—that is to say, there was a decrease in 1902 of 13 more per 1,000 as compared with the preceding year. The decrease was most noticeable in the infant mortality, due largely to the cool summer of 1902. In the year 1901 there were registered more than 11,300 deaths among the children in their first year, while in 1902 not quite 9,000 deaths were recorded among that age class. The contrast was

most apparent in the months of July and August, during which months in the year 1901 the total number of deaths among children in their first year amounted to 3,536; in 1902 in the same months only 1,521.—[*Public Health Reports.*]

OBITUARIES.

Soyetsu Kumagawa, one of the foremost physicians in Japan, died recently in Tokio, aged 64. For many years he devoted himself to the advancement of medical science in his native country. He founded an association under the auspices of which a dispensary was established where the poor were treated gratuitously. This was the germ of the Tokio Charity Hospital, which was founded ten years later. In 1874 he opened an ophthalmic hospital in Tokio. He was a member of the Committee of the Sanitary Association of Tokio, and of many other hygienic and philanthropic societies. Dr. Kumagawa was also a vice-president of the Sei-I-Kwai, or Society for the Advancement of Medical Science in Japan.

Emma Constance Stone, said to be the first Australian woman to adopt the profession of medicine, died recently in Melbourne, aged 46. She first studied medicine at the Woman's Medical College, Philadelphia, and afterward in London and finally in Melbourne, where she started in practice. She was instrumental in founding the Queen Victoria Hospital.

Franklin A. Gardner, in Washington, D. C., February 13, aged 45. He was graduated from the New York Homeopathic College in 1882, and was a member of the American Institute of Homeopathy and the American Electro-Therapeutic Society. He was physician at the White House during Harrison's administration.

James M. G. McGuire, in Berryville, Va., January 24, aged 70. He was graduated from the University of Pennsylvania, Philadelphia, in 1855. He served as major and surgeon in the Confederate Army.

David Muuro, of Perth, Ont., February 7, aged 61. He was graduated from the Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., in 1867.

John J. Conway, of Brooklyn, N. Y., February 13, aged 44. He was graduated from the Long Island College Hospital in 1880. He was at one time connected with the Brooklyn Hospital.

James G. Leffingwell, of Pittsburg, Pa., died at Wilkinsburg, Pa., January 29, aged 57. He was graduated from the University of Michigan, Ann Arbor, in 1870.

Samuel E. Burchfield, in Latrobe, Pa., January 21, aged 48. He was graduated from the University of Michigan Homeopathic Medical College, Ann Arbor, in 1881.

J. D. Hutchinson, of Columbus, Miss., February 9. He was graduated from the medical department of the Tulane University, New Orleans, in 1869.

Augusta B. Engstedt, of Oakland, Neb., January 26, aged 29. She was graduated from the John A. Creighton Medical College, Omaha, 1899.

John G. Seabrook, in Columbia, S. C., January 20, aged 81. He was graduated from the University of Pennsylvania, Philadelphia, in 1844.

Gertrude R. Woodworth, of Chicago, Ill., February 10, aged 65. She was graduated from the Hahnemann Medical College, Chicago, in 1897.

W. W. Hinsh, of Chicago, Ill., February 10, aged about 60. He was graduated from the Miami Medical College, Cincinnati, Ohio, in 1875.

John V. Epler, at Reading, Pa., January 20, aged 65. He was graduated from the Pennsylvania Medical College, Philadelphia, in 1858.

John C. Hackett, in Millington, Md., January 21, aged 45. He was graduated from the Jefferson Medical College, Philadelphia, in 1883.

John C. Tribbett, in Montezuma, Iowa, January 20, aged 56. He was graduated from the Miami Medical College, Cincinnati, in 1873.

William L. Martin, in Rancocas, N. J., January 27. He was graduated from the Jefferson Medical College, Philadelphia, in 1852.

John Murphy, of Peoria, Ill., January 21, aged 86. He was graduated from the University of Edinburgh, Scotland, in 1840.

Cochran McClelland, of Philadelphia, February 16, aged 59. He was graduated from the Jefferson Medical College in 1873.

James M. McKim, in Newark, Mo., January 22, aged 76. He was graduated from the St. Louis Medical College in 1858.

Isaac G. Reed, in the Manhattan State Hospital for the Insane, Ward's Island, New York, January 24, aged 67.

P. B. Porter, of Chicago, Ill., February 8, aged 57. He was graduated from the Chicago Medical College in 1869.

David A. Kappes, of Philadelphia, February 14, aged 44. He was a graduate of Jefferson Medical College.

Thomas Forshee, of Madison, Wis., died February 12, at Champaign, Ill., aged 77.

Charles R. Gallagher, of Baltimore, Md., February 14, aged 80.

James H. M. Knox, in Baltimore, Md., January 21.

J. I. Tharp, of Washington, Ga., February 13.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

WOUNDS PRODUCED BY SUGGESTION.

BY

JOHN MADDEN, M.D.,

of Milwaukee, Wis.

It is questionable whether one does not owe the profession an apology for dragging forth at this time the subject of suggestion.¹ The uncanny things some medical men claimed they were doing with it a few years ago are now ancient medical history. Charcot, Bernheim, Liébault, Wetterstrand, Hack-Tuke, Lloyd Tuckey, Kingsbury, Sidis, and a score or more of other prominent physicians were flooding medical periodicals with startling accounts of hypnotic manifestations. The lay public became infected, and the acme of its mad interest was reached when a prominent publishing firm paid \$50,000 and a royalty to the author of "Trilby," she of the matchless feet and doubtful morals, who was dominated by the hypnotic eye of the unwashed Svengali. Happily she died; then her creator, unable to bear the weight of so much popularity, unable to sit in the focus of the public eye, and fearing that his reputation was written in the sand, turned his face to the wall and also died. He was a true prophet. Were he alive today would he not, as the author of "Trilby," be as utterly neglected as his dead heroine?

It is difficult to read the medical literature of ten years ago without concluding that a sort of "suggestion" madness had seized prominent men in the profession. Their results astonished the world. Psychic eccentricities of the most marvelous kind were daily exhibited by subjects *en rapport* (not to say *en league*) with their principals. These goings-on got into the secular magazines and newspapers and all the world stood agape.

With the psychic manifestations of suggestion, however, this paper will not attempt to deal. There is evidence enough that hypnotists have played battledoor and shuttlecock with the minds of innumerable hysteric women and not over-strong-minded men. Our purpose here is to examine the evidence which supports the assertion that wounds, generally burns, either slight vesication or of such severity as to leave permanent scars, have also been produced by suggestion with or without hypnosis.

Jendrassik and Krafft-Ebing² experimented with a subject in the Rochus Hospital in Pesth in May, 1885.

The subject, Ilma S., was an incorrigible female of 17, who bore many of the well-known marks of degeneracy. Her father was a drunkard, who committed suicide; her mother was a paralytic, as the result of a cerebral hemorrhage; her maternal grandfather, one brother, and one sister also committed suicide, and another sister was subject to hysteric convulsions.

She was a logical product of such an ancestry, a proper member of such a family. She was a thief at 14, a thief and forger at 16—a cunning but evil-minded hysteric always. She had some physical abnormalities to add to the many of the mental kind, among which were anesthesia, hyperesthesia, neuralgia, and faults in the organs of special sense; some of these probably simulated. Jendrassik noticed when examining the patient "a scar representing a pair of medium-sized scissors" on the right side of the thorax near the shoulder. This scar was made, so he was told, while the patient was in a hypnotic state by being accidentally touched with a pair of scissors, the suggestion being somehow conveyed to her that the instrument was red hot, when as a matter of fact it was cold. Jendrassik took the hint. Ilma was seen to be very susceptible to hypnosis, so she was hypnotized and touched with a metallic letter K, a key, a monogram, the rim of a graduate, and some other objects suggested to her as being red-hot but really cold, and burns were produced of the identical size and shape of the objects with which she was touched. Jendrassik is not specific on the subject, but he makes the general statement that conditions were such that "deception is entirely excluded."

She was then turned over to Professor Krafft-Ebing for further experiment. On February 21, 1888, while in a state of hypnosis, "a circle was drawn with a pencil on the outside of the dress, over the region of the left scapula" and the patient commanded to "let it appear as a red line on the skin." On

the twenty-second the circle could not be seen. Hypnotized again the subject remarked: "You did not do that well; you made it on the dress instead of on the skin." This time the circle was drawn on the skin; and on the twenty-third not only did it appear, but there also appeared an identical circle on the opposite shoulder, each exactly 4 cm. in diameter. On the twenty-fourth the subject after being hypnotized was touched with the letter K, which was cut from a piece of zinc, the suggestion at the same time being made that it was hot. She was then bandaged and the bandages sealed. On the afternoon of the twenty-fifth the bandages were removed after it was ascertained that they had not been tampered with. "On the place suggested there was an irregularly shaped (not a K shape) irritated surface 5.5 cm. long and 4 cm. wide."

The other wounds were produced in the same manner, but were not duplicated on the opposite side. A sheet of writing paper was bound on the girl's left leg, and, under the suggestion of a sinapism, a blister was produced; no burn, however, appeared on the right leg. Nevertheless the author assures us that "If anything is pressed on her left side and suggested as red-hot a burn appears symmetrically and reversed on the right side."

Liébault's¹ experiments in the matter of producing burns by suggestion were reported in the *Journal of Hypnotism* in 1894. With both of his subjects in the hypnotic state he had them touch a cold stove suggesting to each that it was red-hot. So soon as they were awakened, it was observed that on the hand of one there was a "lively reddening" where it came in contact with the stove, while on the hand of the other there was a burn followed by a characteristic exfoliation of the epidermis and subsequent healing.²

Forel reported that he had received two photographs from Wetterstrand showing "two beautiful burn blisters," one of which was fresh and the other dry, under which Wetterstrand had written "Two burn-blisters originating through suggestion in somnambulism, the one in the middle of the hand October 7, 1890, the other on the side of the thumb suggested October 14, and photographed October 15. Both blisters arose eight minutes after suggestion, and the subject was, during the time, under complete control and observation."

We have the testimony of Bernheim that blisters were raised by postage stamps on the shoulders of a hypnotic subject, acting under the suggestion that they were sinapisms. In this manner five blisters were produced by eight postage stamps. Bernheim also mentions cases of hemorrhagic stigmata, bleeding from the hands, feet and sides on Fridays at the points wounded in the crucifixion of the Saviour.

While we might cite more evidence of this same kind, we have enough for our purpose. Let us examine it.

It is difficult to escape the conviction that the subject of Jendrassik's and Krafft-Ebing's experiments deceived those eminent investigators. In the first place she was a hysteric degenerate, a criminal, a clever forger, and a past master in the art of deception. In his volume detailing the experiments, Professor Krafft-Ebing does not tell us what measures were taken to prevent deception. He does tell us that such measures were taken, but if he had told us just what they were and permitted us to exercise our own judgment as to their adequacy it would have been more satisfactory. We have not, of course, lost sight of the fact that the subject was bandaged on one occasion, and while there was no apparent tampering with the seal put upon the bandage, a burn appeared nevertheless, but the character of this burn furnishes us the very strongest evidence that the patient had practised deceit. It will be remembered that before the bandages were applied the "suggested" burn was exactly the size and shape of the letter K with which the part had been touched, but the burn which appeared after bandaging was irregular in shape, many times larger than the K, and bore not the slightest resemblance to it in form. The proper inference to be drawn is that failing to reach the spot after the bandaging, with the heated initial (which she must have had access to before) she was enabled to produce a burn of a diffuse character through the bandages, possibly with a heated needle or by means of a jet of steam. Certainly the appearance of this burn was enough to condemn the entire experiment. Another condemning fact which has not been referred to before is this: On the shoulder touched by the metal initial, the burn appeared just like the K, while on the

¹ Is not the nonsense taught by the profession regarding suggestion largely responsible for the thousand forms of present day "mental healing" quackery?

² "An Experimental Study in the Domain of Hypnotism," by Krafft-Ebing, translated by Dr. Chaddock.

¹ *Zeitschrift für Hypnotismus*, Bd. 3, S. 40, 1894.

² *Zeitschrift für Hypnotismus*, Bd. 7, S. 137, 1898.

opposite shoulder it was not like the metal K reversed, but more like an H. Still another fatal defect in the experiments with this subject was the length of time which elapsed between the suggestion and the wound produced by it. In no case was it less than 24 hours. Why should so long a time be necessary? Wetterstrand's subjects were blistered in eight minutes and Liébault's apparently in a few hours at most.

We can, I think, without the slightest hesitation or injustice to the distinguished investigators, throw the case of Jendrassik and Krafft-Ebing out of court upon the ground that there is no reason to believe that their subject was sufficiently controlled, and that the nature of the wound produced after bandaging justified the conclusion that neither that nor the other wounds were produced by suggestion.

We cannot, however, so easily get rid of the testimony of Liébault and Wetterstrand. In the latter's subject especially, vesication was produced in the very short period of eight minutes, and while we are not informed that the distinguished "suggestion" therapist kept the spot under his eye during the process of vesication, deception under ordinary circumstances would not have been easy. In Liébault's cases deception might have been practised, so far as the information he gives us to the contrary is concerned.

Assuming that the truth has been told us regarding these wounds, it is a peculiar circumstance that they are always burns. Why not varicosities, cuts, scratches, penetrating wounds, tumors, or ulcers? If it is possible to produce burns by suggestion, why is it not possible to produce other kinds of anatomic change? Moreover, if suggestion can produce a burn on the skin of one subject in eight minutes, why should it take three times as many hours to produce the same extent of vesication on the skin of another person by the same agency? We answer, of course, that we don't know. The length of time required to produce a burn by suggestion is, however, a matter of comparatively little importance. The burn itself is the thing which needs explanation. Let us try to understand it. The subject receives the stimulus through the special sense of hearing; it goes to the auditory center for analysis, from thence it goes to the center of judgment, and this tells him that the object touched is hot; then somehow a destructive impulse must be sent from the center of judgment to the spot touched.

Just at this point we are all at sea. In the first place we know of no impulses under any circumstances sent out from the cerebral or other brain or cord centers producing an immediate destruction of protoplasm, or a violent or even a mild form of inflammation. To make this theory of a destructive force acting from within plausible, we must assume that (1) every minutest portion of the surface of the body has a center somewhere within the cerebrospinal axis with which it is connected by an *effluent* nerve-path; (2) that this center may be stimulated to the exclusion of all other centers; (3) that it may be stimulated by way of the higher centers (the judgment); (4) that the stimulus may be so strong as to cause immediate tissue destruction. But we know that no such nervous mechanism exists in the human body. As a matter of fact, the "suggestion" wound is explainable upon no rational physiologic theory, and it is a thousand times easier to believe that the experimenters were deceived than that wounds may be thus produced.

Physicians have sought to explain these wounds as manifestations of altered nutrition. They tell us that, as the nervous system is directly concerned in the nutrition of the cell, destruction might take place through the "nerves of nutrition." While the whole subject of nutrition is but imperfectly understood we know that the vasomotor system is directly concerned in the nutritive functions chiefly by regulating the blood-supply, and hence the food supply carried with it. Let us grant, however, that there is a system of nerves which are concerned directly in the nutrition of the cell, that nutrition is much or little, depending upon the strength and number of stimuli carried to the cell by this special system. But is it not a remarkable fact that no other kind of stimuli but those of suggestion can produce vesication, and burns followed by deep severe wounds and indelible scars? Is it not a remarkable circumstance that suggestion is the only force acting from within which can destroy a definite, limited area on the surface

of the body? Moreover, if it were a manifestation of nutrition gone wrong, why do we not sometimes have "suggestion" ulcers and "suggestion" gangrene? Some professional men also have seen analogy between these wounds and blishes. They tell us that in blushing there is a local dilation of the vessels; but no one ever saw a blush in the shape of a K of such intensity that it caused a burn, followed by a severe wound and an indelible scar.

Let us now look at the matter from the standpoint of the psychologist. It is universally believed, and with reason, that the emotions have much to do with the individual's health; that pleasurable emotions, hope, love reciprocated, the esteem of one's fellows and the satisfying mental attitude it brings, the possession of material wealth and its attendant sense of security against the evil day of poverty, bring with them physical health. They cause the heart to beat stronger, stimulate the flow of the digestive fluids, promote the contraction of unstriated muscle everywhere, improve the appetite and increase the capacity for digesting and assimilating food. In other words, all cause for worry is removed, and with it such central inhibitory influences as disarrange the whole circle of the vegetative functions, and nutrition goes on undisturbed. On the other hand, the victim of an unrequited love, the one who has failed to gain the good opinion of his fellowmen, he who is in constant fear of poverty, or who has the sword of a threatening fatality of any kind hanging over him, will be a victim of malnutrition, because these emotions weaken the action of the heart, inhibit the secretion of the digestive fluids, take away the appetite and lessen, it may be very markedly, all the functions of nutrition.

But we get no help from these wellknown psychophysiological principles. Pleasurable emotions produce no local nutritional phenomena, but redound to the benefit of the entire organism. Reciprocated love, the good opinion of one's fellows, material prosperity, cannot produce a hugely efficient biceps of the right arm while the nutrition of every other muscle remains in *statu quo*; nor can the emotions of fear, despair, unrequited love, cause an atrophy of one organ or part to the exclusion of every other organ or part. Those, therefore, who seek to explain "suggestion" wounds such as we have discussed, by calling our attention to nutritive changes which may be brought about by mental states wander very far from the field of logic. Not the slightest analogy exists between them.

Still another aspect of this subject presents itself for our consideration. We are gravely informed by accredited medical men that a "deviation from a normal state of certain functions frequently lapses into actual structural disease, as the effect of the faculty of the attention being for a lengthened period concentrated on this action" (Forbes Winslow, quoted by C. Lloyd Tuckey, "Psycho-Therapeutics," Chap. 11). The same authority says: "Certain feelings of uneasiness or even pain originate in the mind a suspicion of disease existing in particular parts of the body, stomach, heart, brain, liver or kidneys. Some slight irregularities and functional disturbances in the action of these organs being noticed, are at once suggestive (to the hypochondriac) of serious and fatal disease being established in the part to which the attention is directed." Thus organic change, even a cancer of the stomach, may originate.

This is given as a sample of the argument which is not infrequently heard to show that the mind may actually bring about organic disease through a process of auto-suggestion. Is it not weak to the point of childishness? Is it not a thousand times more reasonable to conclude that the vague sense of uneasiness existing before the appearance of the disease, is really the disease in its incipency, that an organic change has already taken place which is not yet palpable, discernible?

To conclude, we believe that the evidence upon which is founded this theory of anatomic change by long-continued auto-suggestion is unworthy of serious consideration, and like that which supports "suggestion" blisters should be thrown out of court summarily.

NOTE.—Suggestion therapeutics never obtained a hold with us here in America. Whether any one among us ever witnessed any of the phenomena of tissue change, vesication, hemorrhage and the like, on our own soil, I do not know. All my efforts thus far to learn of a subject with whom I might

demonstrate them have been practically without result. Readers of *American Medicine* may recall that I offered through the medium of this journal \$200 for a subject upon whose body might be demonstrated the possibility of producing vesication by suggestion. To this proposal a number of replies were received, some of which showed that the offer was misunderstood, others showed a desire to get \$200 as easily as possible, but had nothing to offer in the way of a subject. Two physicians offered themselves, but for obvious reasons a physician for such demonstration is not a desirable subject. One man, represented as a physician, telegraphed that he would accept the proposition. He presented himself the next day, saying that he had a subject with whom he had already demonstrated the possibility of producing vesication by suggestion. He could, however, not comply with the requirements, as he could not give assurance that his patient would consent to become a subject for such experimental research. He said, indeed, that while he had repeatedly hypnotized her, she was not even aware that she had been subjected to the process, that if she were aware of it she would never come near him again.

I then proposed to go to his city and witness the experiment. To this he agreed, saying he would write me when to come, but when I definitely fixed upon a time for witnessing the operation, he found an excuse for refusing to do anything further in the matter. It was then I discovered that the man is not a physician at all, at least he is not practising legitimate medicine, but is the proprietor of a "Demonstrative Institute of Mental Therapeutics," a fact which he cunningly kept from me until I had become insistent in my desire to see him make good his claims. So out of the answers to my offer through *American Medicine* the only one promising anything to aid in settling in a practical way the question of producing wounds by suggestion is completely discredited. It may be that some physician who reads this will recall evidence of such results seen either in Europe or America, and if so he will confer a great favor by writing to me. Of course, I shall want this evidence to be first hand. I desire that the person himself was a witness of the operation under such circumstances as to make fraud absolutely impossible. Personally I believe that vesication by suggestion is a physiologic impossibility, that one can no more "think" a blister on his body than he can "think" his arm or leg off.

Since the above was written, I have received several letters from this man. They bear all the ear-marks of the genuine charlatan.

ACCIDENTAL GUNSHOT WOUND OF CHEST.

BY

ALFRED RICHARDS, M.D.,

of Fort Hunt, Va.

Contract Surgeon, U. S. Army.

Clinical history of private W. S., Forty-seventh Company Coast Artillery, aged 25, single; height, 5 feet 9 inches; weight 173 pounds; chest measurement: expiration, 37 inches; inspiration, 39½ inches; expansion of right chest, 1½ inches; left chest, 1 inch.

Present History.—On August 25, 1902, at 5.50 p.m., the discharge of a gun was heard at the guardhouse, and instantly there was a call for help. Fortunately, being near at hand, I was able to respond immediately. On reaching the guardhouse I found S— lying upon his face on the floor in a pool of blood and the contents of his stomach which had been vomited. The hemorrhage was profuse, the blood flowing from a wound in the posterior portion of chest, and also from one in the anterior portion of chest in the cardiac region. His shirts were cut off and the first aid administered. The shock was beginning to be manifest, and to limit its degree if possible, to relieve the pain and to steady the heart action which was irregular, slow, and intermittent, a hypodermic of morphin sulfate, 16 mg. and nitroglycerin 0.65 mg., was administered. Sterilized towels were placed over the anterior and posterior wounds and a bandage applied. While administering first aid, hemoptysis was noticed. (Instructions had been given to have normal saline solution ready for use if necessary.) He was placed on a litter and carried a short distance to the hospital, arriving at 6 p.m. The patient was placed in a warm bed and 500 cc. of normal saline solution was introduced into the cellular tissue of his right chest.

Position of Wounds.—The wound of entrance was 2½ inches from the sternal junction of the third rib in the third interspace 2½ inches obliquely above the left nipple toward sternum, as

seen in photograph No. 1. The wound of exit was 3½ inches from the angle of the scapula, axillary line, and 1½ inches from the wound to the muscular fold of the left axilla, as seen in photograph No. 2. At 6.50 p.m. the patient had rallied to a great degree from the shock. I decided to redress the wounds. The skin around the wounds was carefully washed with sterile water and green soap, then with 1-2,000 mercuric chlorid solution, followed by alcohol. The skin around the wound of entrance for about two to three inches was powder stained. There was slight emphysema for about four or five inches around the wound of entrance. Sterilized gauze in pads, and a large quantity of sterilized absorbent cotton were placed over the wound of entrance and that of exit. A little iodiform was sprinkled over the wound of entrance. The dressings were held in place by adhesive plaster and a four-tailed bandage.

Regarding the accident the patient said that he was a supernumerary of the guard and in charge of three prisoners who were cleaning out and clearing brush from around a ditch to improve the drainage and to destroy some mosquito breeding grounds. The tools of the prisoners were a scythe, a brush-knife, and a spade. He loaded his rifle for protection and after returning the prisoners to the guardhouse forgot to unload. Before leaving for the evening he began rubbing his gun-barrel and bayonet to prevent rust from the moisture obtained at the ditch. The bayonet was difficult to remove from the rifle and in taking it off the rifle was discharged. The distance of the gun-barrel from the chest was about 1½ to 2 feet. The rifle was of the United States service variety (modified Krag-Jorgensen) .30 caliber type. The powder was of the nitroglycerin type, giving a muzzle velocity in the rifle of about 2,000 feet per second. The bullet had a core of lead and tin composition, jacketed with cupronickel, weighing 220 grains.

Treatment.—Liquid diet and absolute rest in bed were ordered. Owing to the oozing the wounds had to be dressed frequently. It was found necessary to add additional cotton to



A, wound of entrance. B, wound of exit.

the posterior wound on the afternoon of August 26, also at 10.40 a.m. on the twenty-seventh. The dressings were found on the twenty-eighth saturated with blood serum, making a new dressing necessary for the posterior wound. September 3 complete new dressing of the anterior and posterior wounds was done. September 8 both wounds were redressed; the posterior one was completely healed; the anterior, owing to the nearness of the gun-barrel to the chest and deposition of powder in the skin, did not heal so quickly. Hypodermics of morphin 8 mg. were given as required, to prevent further hemoptysis and coughing and for its quieting effect, since physical signs of pneumonia, complete consolidation of left lung, were found on August 26. Stimulants were given as required. There was little if any cough or pain after the first two or three days. Food was gradually increased until September 15, when he was given full diet. On the same date lung gymnastics were begun by the method of compression of the side of chest over an arm-chair, allowing greater expansion of opposite lung. Physical examination of chest was made every morning from the last mentioned date for effect of gymnastics. The lung gradually cleared up, except the lower part of the anterior portion of the left lung. On October 9 Wouffe's bottles were tried with success.

The temperature seemed to indicate a delayed traumatic pneumonia. In the last week or two the temperature varied between 98° and 100.2° F., and as the patient seemed to be in perfect health I discontinued the use of the thermometer.

The pulse varied considerably, ranging between 72 and 120. No abnormal sounds were heard in the cardiac area.

On October 20, 1902, the patient was returned to duty, having made a perfect recovery. Chest examination: Inspection shows a slight flatness of the whole of the left side of the chest. Over the sixth rib on the left side there is a slight depression, but the lung is perfectly clear, with good expansion. Auscultation and percussion are normal. Exertion causes a very rapid heart action, which declines to the normal in a few minutes.

ORIGINAL ARTICLES

CHRONIC PANCREATITIS.¹

BY

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of Washington, D. C.

Chronic pancreatitis was first described in 1896, but it is only about 18 months ago that the true significance of the disease was brought to the attention of the profession. Because it is practically a new disease to all of us, because it is not an uncommon disease, because its diagnosis is possible, because its treatment can be brought to a successful issue, and for other reasons to be described later, I feel justified in reporting the following case in some detail:

Mrs. C., aged 49, November, 1901. Family history was uninteresting; likewise her personal history, until August, 1896, when her left breast was removed by Dr. Deaver, of Philadelphia. The same surgeon removed her right breast in August, 1900. With the exception of an acute attack of indigestion, manifested by abdominal pain and vomiting, for a few hours in October, 1900, she had been a healthy woman until early in November, 1901, when, without any premonitory symptoms, she was attacked suddenly with a severe epigastric pain, lasting four hours. During the succeeding two days she complained of fullness and discomfort in the region of the stomach, accompanied by eructation of gas, and on the third day she had a second attack of severe pain, followed this time by jaundice. In about a week the jaundice disappeared, the urine cleared, and the stools resumed their normal color. She then began to have mild attacks of epigastric pain, with indigestion, soon followed by a recurrence of the jaundice, with loss of weight and a sense of great exhaustion. These symptoms continuing about a week, she was again seized suddenly with an agonizing attack of pain located in the epigastrium and radiating through to the back and interscapular region. From this time on these agonizing paroxysms recurred with remarkable regularity about every third day. In the intervals she suffered with great oppression and weight over her stomach, often temporarily relieved by eructation of gas in loud explosions. There was moderate irregular pyrexia, occasional nausea, complete anorexia, constipation, insomnia, exhaustion, and mental depression.

Physical Examination.—This showed a medium-sized, fairly well nourished woman, moderately jaundiced, with a facial aspect of suffering and despondency. The thoracic organs were normal. There was slight tenderness and resistance to deep pressure, localized in the epigastrium. There was no dullness on percussion and no palpable tumor. The liver was not enlarged, nor the gallbladder palpable. The urine contained bile; specific gravity was 1.026; albumin and sugar were absent. The feces were clay-colored, fairly well digested and contained no free fat.

The paroxysms of pain continued with regular intermittence, the jaundice gradually deepened, loss of flesh and strength progressed with marked rapidity, and the case took on a very serious aspect. The patient presented this history: Both breasts had been removed for cancer; there was epigastric pain, permanent jaundice and rapid loss of weight, all of which pointed to malignant disease. On the other hand, the blood showed no secondary anemia, the red count being 4,630,000, and hemoglobin 80%. There was no leukocytosis, nor was cachexia pronounced. Therefore we concluded the case was one of chronic obstruction of the common duct by a gallstone, and determined to operate. The patient was therefore operated upon for gallstone obstruction by Dr. Stone in January. On opening the abdomen the pancreas was found to be greatly enlarged, hard and nodular, especially at its head. The ducts appeared normal and contained no calculi. Our fears seemed realized, and we looked in dismay at what we thought was cancer of the head of the pancreas. The gallbladder was opened and drained to relieve jaundice, the wound closed and an unfavorable prognosis made to the family. Fortunately, during the operation, a section of the pancreas was removed and submitted to Dr. Carroll for examination. He reported chronic pancreatitis and no evidence of malignancy. We hastened to change our prognosis. The patient made an uneventful recovery and is now well.

A consultation of the modern textbooks scarcely showed a reference to chronic pancreatitis, but at the Army Medical Library we were astonished to find that just such experiences as ours had been encount-

ered in recent years by several observers, notably the English surgeon Mayo Robson, who published his first case in July, 1900. Since then he has reported 22 operated cases, with only one death, the latter patient being in extremis when operated upon. If we stop to consider the amount of literature on diseases of the bile ducts, and the amount of operating done for gallstones in the last 12 years, we must be astounded to think attention was so long in being attracted to the pancreatic duct, which, on account of its like function and similar anatomic arrangement, must be subject to the same lesions as the common duct. Of course, chronic pancreatitis is not a new disease, and the case just reported illustrates how closely the symptomatology resembles that of malignant disease, thus teaching the sad lesson that many patients suffering from chronic pancreatitis have been consigned to their graves with a certificate of malignant disease when their lives might have been saved. In truth, a review of the cases that have come to autopsy in recent years confirms this conclusion. Robson and Opie have done considerable to bring this disease to the attention of the profession, but notwithstanding their efforts we conclude they have met with poor success when we turn to modern textbooks on medicine and surgery. For instance, a prominent textbook on medicine issued this year remarks: "Chronic pancreatitis is thus far only of anatomic interest." Others give a few lines to the disease, and suggest medical treatment without so much as a reference to surgery. One of the latest books on surgery does not even mention the disease.

The first case of chronic pancreatitis was recorded by Riedel in 1896, and was encountered while operating for gallstones. Körte and Oser reported cases in 1898, Lancereaux in 1899, Ebstein and Robson in 1900, Robson stating that he met his first case in 1892. Since 1900 many surgeons have encountered the disease while operating for gallstones.

As a result of the experiences of these men the pathologists and bacteriologists took up the subject, and it is largely their experimental work that has given us a clue to the causation of the disease. Their work has secured the following evidence: The injection of bile into the pancreas causes chronic enlargement and hardening of the organ. Obstruction of the pancreatic duct and

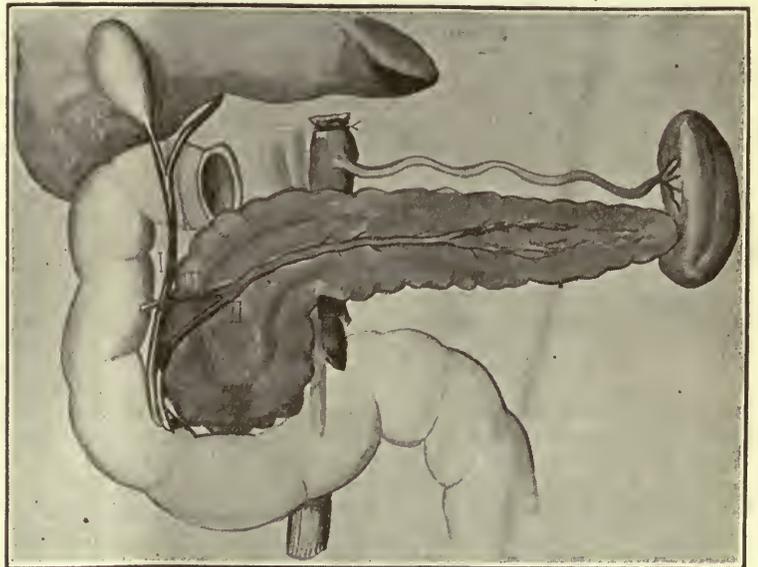


Fig. 1.—I, common bile duct. II, pancreatic duct. III, duct of Santorini.

damming back of the secretions also produce chronic inflammation and sclerosis of the gland. The injection of *Bacillus coli* or fecal matter into the duct produces the same result. Now, with these premises, let us set to

¹ Read before the Medical Society, District of Columbia, November 15, 1902.

work to find out for ourselves what conditions will bring about these results in our fellow creatures, beginning with a study of the anatomy.

Anatomy.—The pancreas is a compound racemose gland of very soft texture, and is drained by the pancreatic duct or canal of Wirsung, which passes transversely from right to left through its substance. On leaving the head of the pancreas the duct comes into relation with the common bile duct and they continue for a short distance side by side, entering the wall of the duodenum together, where they then unite to form a short cavity, called the diverticulum of Vater, discharging their contents through a common orifice into the canal of the duodenum. The common bile duct becomes constricted immediately before it unites with the pancreatic duct, and it is here that a gallstone is most likely to lodge. The lesser duct of the pancreas, or the duct of Santorini, usually opens into the main duct near the duodenum, but sometimes it enters the duodenum separately, at a distance of an inch or more from the entrance of the main duct. This is important to note, for in this fact lies the explanation that in some cases of complete obstruction of the main duct the gland secretions may find escape through the lesser duct. In 34 out of 104 cases examined by Shirmer the lesser duct did not join

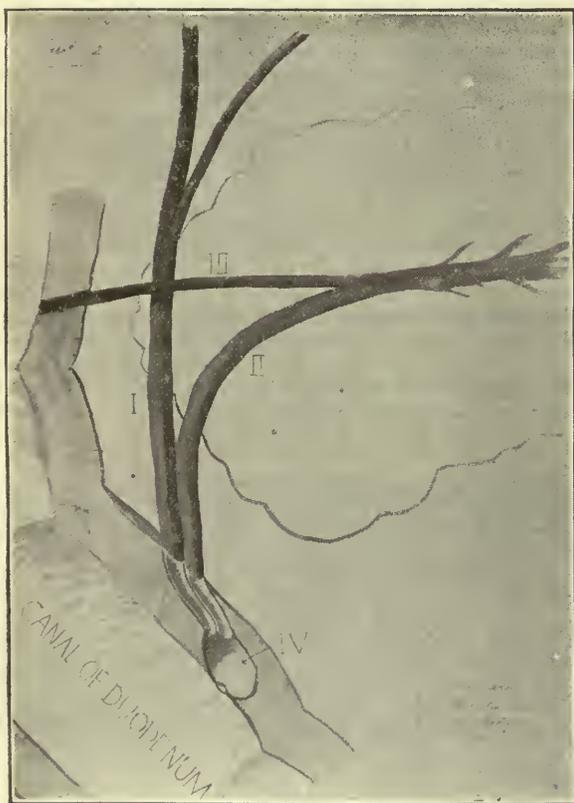


Fig. 2—I, common duct. II, pancreatic duct. III, duct of Santorini. IV, diverticulum of Vater.

the larger duct or enter the duodenum, and it is only in such cases as these that a stone lodged in the terminal end of the common duct would completely obstruct the pancreatic secretion. Therefore, in only about one-third the cases of obstruction are we apt to find resulting changes in the pancreas.

Etiology.—Bearing in mind the similar anatomic arrangement of the two ducts we form two conclusions: First. That whatever obstructs the common duct tends to obstruct the pancreatic duct. Second. The pancreatic duct is liable to infection from the same septic organisms as the common duct.

The causes of chronic pancreatitis may then be divided into:

First. Obstruction of the pancreatic duct. This may be brought about by: (a) Calculi lodged in the pancreatic duct. (b) A gallstone lodging in the common bile duct, where it lies alongside the pancreatic duct, may

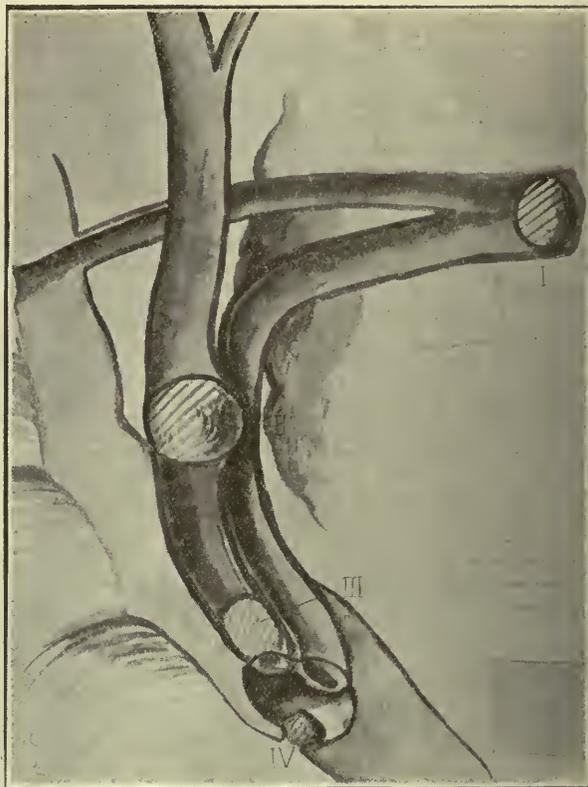


Fig. 3—I, stone in pancreatic duct. II, gallstone in common duct. III, stone in common duct. IV, stone in ampulla of Vater.

sufficiently press on the latter as to occlude it wholly or partially. Or, a gallstone lodged in the diverticulum of Vater may obstruct both the biliary and pancreatic secretions, converting the two ducts into a continuous channel through which the bile passes directly from the liver to the pancreas.

Second. Infection by microorganisms. It is well known that the duodenum and especially the bile ducts are common habitats for various septic organisms, and in cases of partial obstruction of the duct of Wirsung conditions arise that favor the entrance of these organisms into the duct. But infection and pancreatic inflammation may and do occur without any duct obstruction whatever. Robson's belief that all cases of chronic pancreatitis are due primarily to obstruction by calculi is not substantiated by the literature, for there are several cases on record in which there was no antecedent history of gallstones, and in which there was no evidence of calculi at the time of the operations.

Opie has recently reported four cases of chronic pancreatitis associated with persistent vomiting during life, and remarks that the vomiting favors ascending infection through the ducts.

Third. Toxic substances in the blood. Alcohol has been thought by many to be an important element in the production of chronic pancreatitis, but in the majority of reported cases there has been no alcoholic history. On the other hand, Opie has shown that in about one-fourth the cases of cirrhosis of the liver coming to autopsy, sclerosis of the pancreas has been found associated in greater or less degree. Hence we must conclude that the factors at work in the production of cirrhosis of the liver must also influence the pancreas. Interference with the circulation in chronic disease of the heart and lungs does not materially affect the pancreas.

A few students have written much to prove congenital

and acquired syphilis a cause of chronic pancreatitis, but this view is not supported by the literature.

Cannot brought attention to the occurrence of chronic pancreatitis in general tuberculosis. Tuberculous lesions of the pancreas have been recorded only a few times, and in these instances have not explained the pancreatitis.

Pathology.—Whether by obstruction from calculi or extension of inflammation from a duodenal catarrh the first step is infection of the pancreatic duct and an extension of the infective process into the head of the pancreas, resulting in inflammation of the gland. This infection if virulent may produce acute pancreatitis of hemorrhagic and suppurative varieties, but more usually a slow interstitial effusion takes place, enlargement and organization following. The enlarged organ now presses on the common duct, giving rise to enduring jaundice, thus simulating cancer of the head of the pancreas. As explained before, under these same conditions of infection the organ may escape serious changes, provided the accessory duct is so situated as to allow free drainage, and this may happen in a considerable number of cases.

CONCLUSIONS.

Chronic pancreatitis is caused by infection, the toxic material usually gaining entrance through the pancreatic duct, sometimes through the general circulation. Obstruction of the duct by a gallstone is the most common primary cause.

Symptomatology.—The patient may have suffered with long continued chronic gastric catarrh. Suddenly he is attacked with severe epigastric pain. The pain, as illustrated in the case reported, is central and not over the gallbladder. It radiates either to the back and interscapular region or toward the left. After lasting a variable time the paroxysm recurs with either regular or irregular intermittence, or there may be no paroxysmal pain, merely a deep-seated dull ache. Nausea and vomiting may accompany the paroxysms. In the interval the patient has anorexia, a sense of epigastric fulness and weight, belching or pyrosis. Sooner or later jaundice appears, the stools become putty-colored, and the urine contains bile. With each paroxysm the jaundice deepens, and finally becomes permanent. Now there is a progressive and quite rapid loss of flesh and strength until a most perfect picture of malignant disease confronts us. Some patients have complained of a curious sense of faintness almost amounting to collapse, and often there is a moderate degree of fever at intervals, again resembling cancer. Diarrhea or constipation may be present. The stools contain an excess of undigested muscle fiber and sometimes free fat. Lipuria is of rare occurrence. In advanced stages of the disease glycosuria occurs, but sugar will not make its appearance until a large portion of the gland parenchyma has been destroyed or functionally impaired, as has been experimentally proved by Opie. The pulse becomes slow when jaundice appears, and in the late stages there may be hemorrhages from various mucous membranes or into the skin. The patient finally dies of exhaustion.

Physical Examination.—On examination there is often a tender spot, central and about an inch above the umbilicus. There is more or less resistance to palpation over the epigastric region, and very rarely the enlarged pancreas may be felt. In a few instances when the enlarged pancreas presses on the vena cava, ascites develops.

Diagnosis.—This is very difficult. Thus far the best evidence of failure in pancreatic secretions is in the presence of an excess of undigested muscle fiber in the stools. Another good test is the absence of carbolic acid in the urine after the administration of salol. Unfortunately the presence of fat in the stools and sugar in the urine are of very little value as aids in diagnosis, for they are not present until a very late stage of the disease, when the pancreas is almost entirely destroyed. They should always be examined for, as their presence

would be confirmatory, but their absence would not negative the existence of the disease.

Mr. Cammidge, working under Robson, has found when urine from patients with chronic pancreatitis was boiled with an oxidizing agent and the phenyl-hydrazin test applied, there resulted a large number of delicate yellow needles, arranged in sheaves and rosettes. Normal urine, urine of various other chronic diseases, and even bilious urine, gave negative results when treated in the same way. But the cases so tested are too few thus far to allow us to conclude that it will prove useful in diagnosis.

I reported my case in detail for three especial reasons: First. To show that, while formerly, a patient suffering with epigastric pain, chronic jaundice, and loss of flesh, was thought to have either cancer or gallstone obstruction, we must now include chronic pancreatitis. Second. To show that if at operation a hard and enlarged pancreas is discovered it need not necessarily be cancer. Third. To show that the history, symptoms, and signs of the three diseases—cancer, gallstone obstruction, and chronic pancreatitis—are so similar that it is only by a thorough and painstaking refinement of symptoms that we can hope to differentiate between them.

The few points in diagnosis at our present command can best be emphasized, therefore, in an attempt to differentiate between the four diseases, namely: (1) Gallstones in the common duct; (2) cancer of the head of the pancreas; (3) cancer of the bile ducts; (4) chronic pancreatitis.

Now, these four diseases may have all the chief symptoms in common, namely, the history, the jaundice, the paroxysmal epigastric pain and tenderness, the wasting and the possible distention of the gallbladder.

We may exclude gallstone obstruction by the fact that the pain is to the right of the middle line, and radiates toward the right shoulder, and the tenderness is over the liver, which may be enlarged; whereas, in chronic pancreatitis, the pain is in the mid-epigastrium and radiates directly backward to the midscapular line, and the tenderness is in the middle line, and not over the liver. Fortunately the treatment of the two conditions is the same, and a differentiation is not so essential. However, when we come to cancer of the pancreas a differentiation is of the utmost importance. Here we must rely mainly on an examination of the blood, which shows a marked secondary anemia and leukocytosis in cancer, phenomena absent in both gallstone obstruction and chronic pancreatitis. The pronounced cachexia and painless dilation of the gallbladder are further points in diagnosis of cancer. It is true that in long-standing cases of chronic pancreatitis the gallbladder may become distended just as in cancer, but the distended gallbladder will be painful in pancreatitis and painless in cancer.

In cancer of the bile ducts, the gallbladder is much dilated. The various lymphatic glands may show involvement and a tumor is sometimes felt. Chronic catarrh of the bile ducts may be distinguished by the absence of pain, the negative physical signs, and the maintenance of the general nutrition.

The diagnosis of chronic pancreatitis must then be based on the jaundice, the paroxysmal epigastric pain, the mid-epigastric tenderness and resistance, the rapid loss of flesh and strength with the absence of marked anemia and leukocytosis, the presence of an excess of undigested muscle fiber in the stools, and the peculiar reaction of the urine to the phenyl-hydrazin test. In many cases diagnosis can be made only by exploratory operation, which should be unhesitatingly done in all doubtful cases.

Prognosis.—The disease may last for many months or perhaps years. Uniformly good results have been obtained in all patients properly operated upon, and, in the hands of a good surgeon, when operation is not too long deferred, the mortality should be practically nil. Of course, when sugar is found in the urine the outlook

is not favorable, for we then understand that the pancreas is almost entirely destroyed.

Treatment.—This is purely surgical, and is effected by clearing the ducts of obstructions so far as possible, and draining the gallbladder or both ducts, as the circumstances may demand.

SOME FURTHER RESULTS IN THE TREATMENT OF PULMONARY TUBERCULOSIS.¹

BY

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Physician-in-Charge, Muskoka Cottage Sanatorium.

At the meeting of this Association in Toronto three years ago I presented the results of two years' work in the sanatorium treatment of pulmonary tuberculosis. Since that time the appreciation of the merits of sanatorium treatment of this disease has rapidly increased, so that a presentation of the results of the past three years in the Muskoka Cottage Sanatorium may be of some interest to the profession. I want to assure the members of this Association of the great value of this method of treatment, and to show that not only a return to health is to be expected in a large proportion of the early cases, but that by hygienic living after returning home the gain made is permanent when the patient has remained under treatment a sufficient length of time.

The term "sanatorium treatment" includes broadly those measures now adopted by all sanatoriums devoted to the treatment of pulmonary tuberculosis: (1) Constant life in the open air; (2) general hygienic measures; (3) an abundance of nutritious food, with rest or exercise, dependent entirely upon the condition of the patient. Success will vary with the ability of the physician to plan a proper daily program for each patient, and the cooperation of the patient in following his instructions, and this will be the basis of success rather than climatic considerations or the equipment of the institution, though these play no unimportant part in the work. Each case must be a study in itself, and in absence of any specific medication for the disease the therapeutic measures must be largely symptomatic, the one object being so to improve the nutrition of the patient that he is able to resist and overcome the effects of the invasion of the tubercle bacillus and its toxins, both in the diseased area and the organism in general.

A very important factor is a cheerful mind. Everything about the patient must be planned to bring this about, and he must be impressed with the necessity of cultivating it. I have often heard patients say when advised to go to a sanatorium, "Why can I not be treated at home, I do not want to go where there are so many sick people," and very often the physician gives way to the patient, himself fearing the ill effect of such surroundings. Those who have visited a sanatorium need not be told how erroneous is this view and how little depression is present among the merry, happy people who jocularly refer to themselves as "lungers;" they know what brightness and cheer there is about the place. Though it is impossible, however much one may try, to limit the admissions to purely incipient cases, patients in the very advanced stages are not admitted, and any admissions of advanced diseases are limited to those in whom the constitution still shows some resisting power and the disease is not advancing rapidly. When the patient does reach the sanatorium he is surprised to find so many healthy looking people and soon realizes that he is at once recognized as a new patient by his pale face, which has not yet been bronzed by life in the open air. Any depression which may appear in a patient is not from seeing other patients

about him, but is always traceable to other influences, such as worries about affairs at home; for instance, a father or mother troubling about the family left behind, or the consideration of the financial burden of six months to a year away from home with no earning capacity. Everything about the sanatorium is cleanly, bright, and cheerful, and what can be more encouraging to any one afflicted with tuberculosis, which he has been taught to look upon through his life as inevitably fatal, than to see 20% or 25% of all those about him returning home apparently cured, 25% to 35% more in perfect general health, though perhaps not quite free from cough, and another 25% markedly improved, *i. e.*, of all patients treated, and many leaving before they should do so, he has a picture of 75% with marked improvement, another 15% stationary, and in only 10% any progress of the disease. When he sees this for himself he cannot but be encouraged. There is with many at first a feeling of strangeness and perhaps homesickness, but this is soon replaced by an intense interest in the new surroundings and new method of life, and immediate improvement satisfies him that he has made a wise decision in leaving home.

It is unfortunate that for the proper classification of cases there has been no uniform standard of terms adopted by those working in this department of medicine. At the meeting of the American Climatological Association in 1901 a committee was appointed to arrange a satisfactory classification and a definition of terms employed. They were, I believe, hopelessly divided among themselves, and we must go on with our own arbitrary divisions until the matter is settled. In my own work I have followed Dr. Trudeau's definitions, classifying patients as incipient, advanced, and far advanced, and after treatment apparently cured, disease arrested, much improved, stationary, or failed.

DEFINITIONS OF TERMS EMPLOYED.

Incipient.—Cases in which both the physical and rational signs point to but slight local and constitutional involvement.

Advanced.—Cases in which the localized disease process is either extensive or in an advanced stage, or in which with a comparatively slight amount of pulmonary involvement the rational signs point to grave constitutional impairment or to some complication.

Far Advanced.—Cases in which both the rational and physical signs warrant the term.

Apparently Cured.—Patients in whom the rational signs of pulmonary tuberculosis and bacilli in the expectoration have been absent for at least three months, or who have no expectoration at all; any abnormal physical signs remaining being interpreted as indicative of a healing lesion.

Disease Arrested.—Cases in which cough, expectoration and bacilli are still present, but in which all constitutional disturbance has disappeared for some time, the physical signs being interpreted as indicative of a retrogressive or arrested process.

Improved.—Cases in which there has been some marked gain in the condition of the lungs, or in which there has been marked amelioration of the constitutional disturbances. Cases with simply a slight gain in weight are not placed under this term.

The classification is, I must admit, open to criticism, but at present I see nothing more satisfactory. The use of the term "apparently cured" in cases in which tubercle bacilli have been absent three months only, or in which there is no sputum, is open to question. It cannot certainly be used as equivalent to the term "absolute cure" used by some specialists. For this to be used there should be a probationary period of at least two years, possibly longer. Using the term in this way we would naturally expect some relapses or recurrences in the course of a few years, while in the case of those discharged with disease arrested the maintenance of the gain made will be entirely dependent upon the mode of life adopted after the return home.

Instead of presenting to you three years' statistics separately, I shall avoid confusion and save time by grouping together the results of five years' work. It will be noticed that many advanced cases have been admitted. Though our sanatorium is for the treatment of the earlier

¹ Presented at the annual meeting of the Canadian Medical Association, Montreal, September 16, 17, 18, 1902.

cases, we have from time to time admitted the more advanced cases rather than have our beds vacant—not hoping to cure these patients, but knowing there is no provision for them elsewhere. We have worked on the principle of the greatest good to the greatest number, and we never admit them to the exclusion of patients in whom a return to health can reasonably be expected. For the past three years we have been endeavoring to establish in or near Toronto an institution for the more advanced cases, but we have so far been constantly blocked by the property owners in the vicinity of each suitable site. So soon as the site can be arranged we are prepared to erect the home at once, and have already the promise of two cottages and \$25,000 for the erection of a suitable building. Being in or near Toronto, it will be built with the expectation of using it for clinical teaching.

	Patients.
Up to August 31, 1902, there have been admitted	. . . . . 606
On this date there are still under treatment	. . . . . 52
<hr/>	
There having been discharged	. . . . . 554
During this five years there remained under treatment less than one month	. . . . . 80
and these are obviously not to be reported on.	
<hr/>	
Leaving to be reported on	. . . . . 474

Condition on admission.	Number of cases.	Apparently cured.	Disease arrested.	Much improved.	Stationary.	Failed.	Died.
Incipient	134	78	38	16	2		
Advanced	300	17	100	48	23	10	
Far advanced	140	1	22	45	39	27	2
Total	474	96	160	109	64	37	2

These results show out of 474 cases, a large proportion of which were far advanced, 96 patients, or over 20% apparently cured, and 54% of apparent cures and arrested cases; of the incipient cases, 78 patients out of 134, or 58% apparently cured, and 87% of apparent cures and arrested cases. These are the actual results with patients remaining under treatment, in the majority of cases, an insufficient length of time. But every patient, whether apparently quite well, or with the disease quiescent, leaves the sanatorium knowing how to live properly, and is in a position to carry on his new method of life wherever he may go. He is taught that he may reasonably expect to retain all he has gained, but that continued progress will depend entirely upon the care he takes of himself, that if careless, reinfection or an extension of his disease may occur at any time. Knowing what is necessary to keep good health, the patient feels his own responsibility, and in the majority of cases the after results are very encouraging.

PRESENT CONDITION OF 256 PATIENTS DISCHARGED FROM AUGUST, 1897, TO AUGUST, 1902, WITH DISEASE ARRESTED OR APPARENTLY CURED.

Realizing that the value of any plan of treatment depends not only on the immediate result, but also on its permanency, and that the after history of discharged patients is of great importance, it has been my endeavor to keep in correspondence with all the patients who have left the sanatorium. I have sent letters of inquiry with question blanks to those who have left either apparently cured or with the disease arrested; their present condition I give in the following table:

96 PATIENTS "APPARENTLY CURED."

(Of these 62 had bacilli in the sputum on admission.)

In good health, August 1, 1902	. . . . . 79
Not perfectly well, but in fair health	. . . . . 3
Dead	. . . . . 5
Not heard from	. . . . . 9
<hr/>	
Total	. . . . . 96

160 PATIENTS WITH "DISEASE ARRESTED."
(Of these 142 had bacilli in the sputum on admission.)

Apparently in perfect health, and no cough nor sputum	. . . . . 26
As well as on discharge	. . . . . 88
Not so well as on discharge	. . . . . 2
Dead	. . . . . 24
Not heard from	. . . . . 20
<hr/>	
Total	. . . . . 160

That so many remain in excellent health after the elapse of from one to five years is most encouraging, and by following the rules of life learned at the sanatorium in a fair proportion of the cases classed as arrested, the patients have progressed to apparent cure.

The five deaths occurring among the "apparently cured" cases call for a short note of explanation. The first was a youth of 19, who on discharge appeared quite well. He was, however, growing very rapidly, and was not putting on weight quite in proportion to his height. He was advised to go to Calgary, or if he remained in Ontario to live on a farm. Contrary to all advice he remained about his home in a large town doing nothing and spending the greater part of his time indoors. The result which followed could scarcely be unexpected. A second patient died of tuberculous meningitis a year after discharge, having been in the meantime at work on the farm, and having at no time any return of his pulmonary symptoms. The other three patients were women, all of whom returned to their household cares and worries without allowing themselves sufficient relaxation and hours out of doors. These cases have only served to teach and impress me with the fact that the after history is almost altogether dependent upon the patient himself, and that the exercise of strict care is all that is necessary to keep well. A few patients have been sent to the West to live, but almost all have again taken up life in their former homes. They comprise tradesmen, clerks, bookkeepers, stenographers, physicians, dentists, barristers, farmers, engineers, tinsmiths, and men and women from many other walks in life. They are living in all parts of Ontario, and in the lower provinces. If a patient is cured in his home climate, there seems to be no reason why he should not remain well in it.

There is no need of sending every patient to the West or South as soon as a diagnosis of tuberculosis is made; fully as good results can be secured at home. It is not climate that cures, it is the careful supervision of the patient by his physician which is of most importance, climate being entirely secondary. Rather than have your patient go away from home among strangers, where he will not have proper attention, treat him at home if you can devote the necessary time to ground him thoroughly in the essentials of cold sponging, life out of doors, care of the sputum, the use of the clinical thermometer, regularity at his meals, in the hours of sleep, rest and exercise, and see him at frequent intervals that his daily program may be changed according to indications. I want the profession to realize fully the curability of tuberculosis and the necessity of an early diagnosis to secure the best results. For those who cannot leave home for treatment the physician must make it his duty to give them the necessary time and attention and see that his instructions are faithfully carried out. If the physician would do this conscientiously and not treat his patient as a chronic with little hopes of cure there would be more cures and the public would be less apt to take so readily to proprietary nostrums.

I hope that the success that has attended our efforts in this work and the unvarying success of sanatorium treatment in the United States and in Europe will be a stimulus to the profession and the public to urge on our governments and our philanthropists the necessity for the provision of sanatoriums throughout Canada. The National Sanitarium Association has established two at

Gravenhurst, one with 60 beds for paying patients at \$10, \$12 and \$15 per week, and a second with at present 75 beds for the indigent and those who cannot pay the full rates. Both are for the earlier cases. More sanatoriums are required, each province should have one or more. The earlier we can have them established and use them as centers of hygienic education for our people the sooner may we hope to control the ravages of this dread disease which is accountable for the yearly loss of so many of our fellow-citizens.

DANGERS FROM THE INDISCRIMINATE USE OF MORPHIA.¹

BY

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of Hartford, Conn.

Morphinism and other narcomanias are rapidly increasing in this country. Some of the more apparent causes are the nerve and brain exhaustions which are so common in all circles of life. Next are the toxic conditions, following failures of nutrition with auto-intoxications from lowered vitality and general debility. From these and other sources the brain centers lose their vigor and power of endurance and become highly sensitive to pain. The absence of proper rest to the brain centers is followed by irritation and instability which are transmitted to the next generation; this is apparent in the neurotic and hypersensitive states. The increasing number of neurotics and psychopaths in every community is an unmistakable sign of brain and nerve failure. In such persons morphinism, alcoholism and narcomania generally are symptoms of low vitality, starvation and poison states. It is these conditions that prepare the way and make ready the soil for the growth of nervous diseases, of which morphinism and other narcomanias are common instances. There are reasons for believing that physicians are responsible for many of these conditions which a larger and more accurate knowledge would have prevented. One class of physicians who are more or less responsible are the thoughtless, unreasoning ones who believe that the highest achievement of art is to relieve pain and suffering irrespective of all consequences. These physicians have never been taught that morphia therapeutically is dangerous except when used in special doses and in certain conditions. Professors of therapeutics describe at great length the value of morphin in medicine, but say little of the possible dangers from its use. In nearly all medical colleges little or no instruction and seldom any warning is given the recent graduate concerning the danger of addiction to morphia. The moral theory of vice in the wilful giving way to the impulse for relief from morphia is prominent in both medical and lay circles, and the victim who has become an habitué is regarded as one who might have done otherwise by the exercise of his will. A prominent physician recently wrote that the mania for morphin by the needle was more a moral lapse than a physical one. Another writer of eminence in this country talks at great length of the moral treatment of morphinism, conveying the same idea. Physicians believing these theories would naturally use morphia by the needle with great indifference. It is urged by some writers that in all conditions of pain it is justifiable to use morphin by the needle. Some physicians when called to an obscure case give morphia at once, before making a diagnosis, believing that after a certain narcotism of the pain centers the symptoms of the disease can be determined more easily, or they reason that the effects from cessation of pain by the needle will create confidence in the mind of the patient that will be followed by more successful after-treatment. Other physicians use morphin in the most routine way, giving

it in nearly all cases either alone or combined with other drugs, varying with the amount of pain present. In neurotic and rheumatic cases, in which the use of morphia brings rapid relief, it not infrequently happens that the physician instructs the patient in the use of the needle, trusting to his judgment when and how to use it. Instances are not uncommon in which the physician has given morphia daily for months. When it dawns on the mind of the patient that he is contracting an addiction, the physician is discharged but the drug is continued in some form or another. When the physician has concealed the drug from the patient, a change of physicians is almost sure to reveal the fact and show the inability of the patient to get along without a narcotic. Many very excellent physicians have thoughtlessly given morphia until its poison effects were marked and the patient was unable to bear its withdrawal. In that case, the patient usually drifts away from the doctor, falls into the hands of quacks and soon becomes incurable.

A second class of medical men who are very active in promoting morphinism and other narcomanias are spirit and drug-takers themselves. They are the physicians who believe in the food, tonic and stimulant qualities of alcohol and use it in so-called moderation as a stimulant, socially and at meals, or upon any occasion of strain or overwork. Morphia is used in the same way. If suffering from insomnia or overwork, morphin by the needle is used for relief. These physicians believe implicitly in the stimulant value of morphia and do not hesitate to use it on all occasions. The morphia-taking physician will combine this drug in nearly all his prescriptions whenever pain suggests its use. To them there is no possibility of an addiction, and should it follow, it is ascribed to other than the real cause. In one instance a physician of this kind was known to have made or assisted in promoting morphinism in at least six different persons.

A third class who are active in promoting narcomanias are druggists and manufacturers of proprietary medicines. The former soon discover the magic effect of prescribing doses of morphia for pain, and later teach the person how to use the needle, the druggist profiting by the sale of the drug. Many druggists change inebriates to morphinomaniacs by counter-prescribing some of the forms of opium. Physicians may start these cases, then the druggist helps on the addiction, and continues to sell the drug as long as the habitué can pay for it. The patent medicine proprietors use large quantities of opium, morphin and cocain in the pain-killers and nerve remedies. In one of these widely-advertised drugs $\frac{1}{4}$ grain of morphia was found in every teaspoonful. Many of the brain and nerve remedies contain cocain in addition to some form of opium. The popularity of such compounds often depends largely on the narcotics they contain. After their use a few months the druggist substitutes for them similar compounds containing morphin. The patient is then a narcomaniac. Not infrequently the history of the case begins with the use of proprietary medicine. The effect of morphia is then realized, although the drug is unknown. The physician is called in and he discovers morphinism in the abstinent symptoms, when the proprietary drug is stopped. After an ineffectual struggle, he continues the morphia concealed in some other drug, and from this on the course down is rapid. The patient drifts from one physician to another, each one discovering the addiction, and, unable to check it, allows the patient to drift into other hands. Sometimes the case begins with the druggist, who prepares a mixture of morphin concealed in some flavoring substance, which is used for a time, then the patient drifts away to a physician and finally becomes confirmed in the use of morphin.

There are in every community neurotics and psychopaths who are constantly seeking relief from states of exhaustion and depression. Indigestion, excitement,

¹ Read before the Connecticut State Medical Society, May 20, 1902.

overwork and underwork are followed by general emotional disturbances for which drugs are taken. Such persons seek panaceas and specifics. When morphin is given, the narcotism is so perfect as to be a revelation of a new world of comfort and peace, and this is repeated with eagerness and reckless disregard of consequences. Should the drug produce nausea, and after a short period of quietness and rest be followed by still greater depression, it is not usually used again. It is one of the unmistakable signs of danger when the morphin brings complete abolition of pain with quiet, restful slumber and no after-depression. Such patients are sure to become morphinomaniacs with little temptation. In one instance a physician found two members of a neurotic family peculiarly susceptible to the narcotic action of morphia given by the needle. Fearing that this would lead to a serious addiction later, he gave large doses of apomorphia, which produced intense nausea and disgust, breaking up the mental fascination for morphia. Neurothics seeking relief from both physical and physic pain should never be given morphia by the needle except for some special purpose, and then only when concealed. In these cases there is often a needle mania or an intense desire to get instantaneous effects from the drug, to feel the prick of the skin and see the raised surface into which the fluid is forced. This needle mania is serious and persistent, requiring great skill on the part of the physician to break up. Hypersensitive men and women insist on having drugs given this way, and when nothing but hot water is used are satisfied. The danger of addiction to morphia by using it indiscriminately and on all occasions, while always a serious one, is by no means the most important. The physiologic action of morphia on the nerve centers is first a slight stimulant or irritant and then a narcotic. This narcosis falls most heavily on the sensory brain centers, and while checking pain symptoms and depressing functional activities, reacts on nutrient centers and the metabolic processes. Narcotism of these higher centers disturbs elimination and when continued increases the growth of toxins, which still further depress and derange the equilibrium of the nerve centers. The physiologic effect of morphia, first causing irritation, increasing the heart's action, then depressing nerve activity and consciousness to the degree of coma and sleep after which reaction in nausea and depression follow, are certainly very serious interferences with the normal physiologic processes of the body.

Recently several eminent surgeons have sharply condemned the custom of giving morphia after operations, asserting that the following narcotism still farther depresses the nerve centers, deepening the shock from the operation and depressing the vitality. Some English surgeons have recently protested very emphatically against the common use of morphia, giving as a reason the diminished secretions and changed metabolism which always follow. Dr. Price, of Philadelphia, believes that opium in any form increases the mortality from abdominal operations and sustains his argument with strong clinical proof. Other authorities condemn the use of morphia by the needle, reasoning that the sudden introduction into the blood of a toxic agent, lowering the nervous activity and concentrating its power on the sensory centers, is a far more dangerous and serious interference with the vital processes than if used by the stomach. There seem to be good reasons for believing that chemic interference from suddenly changing the hyperesthetic sensory centers is followed by other and more serious states. The mere cessation of pain may be prolonging the cause of which pain is a symptom. Morphia used to quiet pain is simply treating symptoms while the cause remains. Dr. Barrett has shown conclusively that water may be used in the place of morphia as a narcotic in nearly every instance when pain is to be overcome. Dr. Cowles concludes that the continued use of morphia favors the growth of intestinal toxins, absorption of which still further poisons

and deranges the vital processes. Opium, as a fluid or solid, has far more pronounced narcotic action and when given by the stomach is followed by more prolonged after effects. The alkaloids, morphia, heroin and other new combinations are more intense and brief in their action and all of them seem to fall more heavily on the higher brain.

Another source of danger is apparent in many of the common cases which come under daily observation. For example, a person taken down with all the symptoms of la grippe is given morphia in small doses for days and sometimes weeks. He recovers, but complains of symptoms which have all the appearance of derangements from morphia poisoning, such as nutrient disturbances of the stomach and bowels with periods of depression, irritability, and emotional sensitiveness. The appetite is variable and the brain is easily exhausted by the slightest over-exertion. While all these symptoms are usually attributed to the influenza, they resemble closely the withdrawal symptoms of morphinism and sustain the belief that they are in a large measure due to the poison action of morphia. More familiar examples are the neurotic persons who are affected suddenly with chills and coryza called colds, accompanied with mental fears of pneumonia, pleurisy, and other diseases, with morbid dreads concerning the symptoms and their meaning. Morphia used with syrups in these cases is a common remedy and is sometimes used for weeks. When discontinued, the same symptoms of nutrient disturbances, with mental and motor irritability seen in the withdrawal of morphia, follow. In an example of this kind the patient continued to be a nervous invalid for a year or more then found a specific in a quack medicine containing morphia. Later this patient became a morphinomaniac. The order of sequences was clear from the time of the first morphia prescription for the cold up to the development of morphinism. The patient was not aware of the nature of the drug, but only conscious of the good effects. Other equally common examples are those of rheumatism, nutrient and neurotic disturbances or states of toxemia in which morphia is given, alone or with other drugs. While the pain symptoms are checked, new sources of poison and new derangements follow evidently due to the action of morphia. Malarial affections, for which morphia may be given, are frequently followed by equally significant and almost pathognomonic symptoms. After a period of continuous use of this drug, either concealed or known to the patient, its withdrawal is followed by neuralgias, depressions and obscure psychopathic symptoms, for which the physician prescribes wines, and tonics containing alcohols, and inebriety and alcoholism are almost sure to follow. Cough mixtures containing morphia have been condemned by many authorities. There is not only the danger of the addiction, but marked nerve and nutrient disturbances which lead to very serious diseases later. Continual narcotism of the pain centers leaves a degree of susceptibility and feebleness of control that may continue a long time. States of neurasthenia, marked by obscure pains, both physical and psychic, with morbid fears of disease and irritability, credulity and skepticism, when treated with morphia are supposed to be cured. The temporary subsidence of the irritation and pain is followed by an increased debility and exhaustion. Patients so treated often become alcoholics and morphinists; and later the effects of this continued narcotism and covering up of the pain symptoms may culminate in pneumoparesis with death in a few hours, or tuberculosis ending fatally in a few days. The sudden pneumonias and tuberculosis so often noticed are frequently traceable to narcotism from either alcohol or opium. The routine treatment of our fathers, using calomel and venesection for all forms of disease, was infinitely superior and scientific when compared with the present use of morphia by the needle for all aches and pains.

The first fact I wish to make prominent is, that while morphia is a most valuable remedy and cannot be dispensed with in medicine today, it is an exceedingly dangerous one, and should be used with great caution and never continued long, except for special reason and under special conditions. In cases of carcinoma or fulminating diseases that are incurable to a large extent, it is invaluable. Even here the derangement that follows its use is apparent, but this is insignificant when compared with the comfort it brings. There are other diseases often successfully controlled and managed largely by the use of morphia, but the wise physician anticipates and provides for the dangers and lessens them. The second fact I wish to emphasize is, that morphia, given to neurotics and psychopaths, is almost certain to increase the brain and nerve degeneration, and even if it does not produce an addiction will increase the instability of control and the hypersensitiveness of the nerve centers. The possibility of narcomanias, including spirit addictions, is greatly increased, no matter for what purpose morphia is given. The third fact is, that morphia, while relieving the pain incident to the common disorders of the functional activities of the body, actually increases the disturbances of metabolism and favors the growth of toxins. The pain symptoms which it checks obscure the disease and make the treatment more difficult. By paralyzing the sensory centers, diverting nerve energies and breaking up their nutrition, this checking is always dangerous. Our knowledge of the good effects of the drug on the brain centers are obscure, but the injuries which follow its use can be clearly mapped out in any clinical study. Another fact, although well known to all physicians, cannot be emphasized too strongly, namely, that proprietary drugs given for the purpose of controlling pain always contain dangerous and uncertain narcotics, and their use should be condemned. Reckless prescriptions over the counters of drug stores for sudden symptoms of pain are equally hazardous. Physicians should be more cautious in the use of narcotic drugs, particularly opium and its alkaloids, and should remember that many obscure diseases can be traced to reckless medication, and are the direct result of poisons from morphia.

ROUTINE EXAMINATIONS OF CHYME.

BY

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Test-Meal.—For ordinary purposes the following test-meal is most convenient, as it can be taken on a train or in the waiting-room or obtained at any restaurant, and it does not clog the tube: Bread, 2 slices, or if weighed, 50 grams; butter enough to spread the bread, or 5 grams; water, one glassful, or 250 cc. However, in an emergency almost any simple meal that the patient may have taken may be investigated.

Time of Extraction.—For the test-meal given, 1½ hours; for a meal containing meat and vegetables, 1½ to 2 hours; hearty and varied meals can be used only for reaching approximate conclusions.

Method of Extraction.—Use a large tube, preferably No. 11 or No. 12 (referring to circumference in millimeters), with an open distal end, or with not more than two eyes, which must usually be enlarged with a wet knife and smoothed with sandpaper. To empty the stomach some patience is required, and the tube must be used at different depths, from 55 to 60 cm. from the incisors. Suction should be combined with compression of the stomach; the former applied by an aspirator bottle, a Politzer bag, or the modern vaginal syringe of similar shape, or by my roller pump, which strips the stomach tube and affords a suction equal to the resiliency

of the tube itself. Violent suction, as by the Allen pump or the direct suction of a piston pump, should not be used. Compression of the stomach is effected partly by external manual pressure, as in Credé's method, following the movement of the abdominal wall during deep respiration and using considerable force; partly by diaphragmatic respiration and straining with closed glottis by the patient.

After withdrawal, the chyme should be immediately cooled by running cold water outside the jar, in order to stop digestion.

Amount.—The stomach contents should be measured; the amount normally is 50 to 100 cc. Smaller quantities suggest hyperkinesis, but are usually explicable by failure to extract the total amount present in the stomach. These statements and all following apply to the standard test-meal mentioned, unless qualified. In states of supersecretion, the amount extracted may be double that ingested.

Amount of Filtrate.—The filtrate, obtained as described in a foregoing article, is normally about half as large as the total unfiltered chyme. Lower percentages indicate failure of secretion, and are found in gastric catarrh especially. Higher percentages usually coincide with hyperchlorhydria, often with pyloric closure, but there may be a supersecretion without excess of HCl, and if much mucus is present in the filtrate, the fluidity may be due to the secretion of mucus itself. In cases of dilation, abnormal fluidity suggests the presence of water or other beverages preceding the test-meal. Gross increase of stomach contents, with dilation or stagnation, of course leads to the suspicion that we have obtained not only the test-food, but the remains of other meals, and the patient should always be warned against drinking, lunching, or swallowing mucus and saliva within three hours of the time of taking the test-meal.

Acidity.—As the stomach-contents for some hours after a meal are practically always acid, and as the quantitative tests by titration are simple, the theoretic qualitative tests for acidity may be, for the most part, omitted, unless special attention is called by the results of titration to the necessity of qualitative examination. Using 10 cc. of filtrate, or less if only a small amount is available, free HCl is titrated with dimethylamidoazobenzol as an indicator (see preceding article), and the same portion may be used for the successive estimation of total acidity. The free HCl should be neutralized by 25% to 50% or degrees of decinormal NaOH, taking the reading when the red begins to change to orange. The total acidity should be just about twice that of free HCl, a higher ratio indicating fermentation acids, a ratio of less than 1:1.5 indicating lack of combination with proteids. The mistake should not be made, in successively titrating for free HCl and total acidity, of measuring the latter from the end of the former reaction, but both should be measured from the same beginning. If 10 cc. of chyme are used, each tenth cc. division in the buret is a degree or percent. If other amounts of chyme are used, the degrees are obtained by rule of three. In general, the higher the free HCl, the lower the relative total acidity, since a considerable amount of HCl prevents much fermentation, while the combining power of HCl with proteids rarely keeps pace with the increase of secretion of HCl.

Combined acidity is, by simple clinical methods, best determined by titrating a separate sample of chyme, using alizarin as an indicator, stopping when a purple or lilac color is reached. The difference between the free HCl reading and that by alizarin gives the fermentation acids and acid salts, which should not exceed 15°, and which may be only a few degrees in hyperchlorhydria. In ordinary cases of hypochlorhydria, catarrhal or otherwise, we may expect a free hydrochloric acidity of 5% to 10%, while the alizarin reading will vary up to 25% to 40%, the difference representing organic acids and

acid salts. On the other hand, the difference between the alizarin reading and the total acidity represents combined proteid—HCl which is normally about 20% to 30%, but which may vary considerably either way without explanation. As a practical matter, this test is neither accurate nor especially significant, unless corroborated by proteid analysis and the tests for ferments. If there is scarcity of available filtrate, it may be omitted.

Qualitative Tests for Acidity.—If the reaction with dimethylamidoazobenzol is uncertain, a drop of filtrate is heated, without charring, with a drop of the following:

Resorein	5
White sugar	3
Add water or alcohol	100

A vermilion ring, on drying, indicates HCl (or other mineral acid which, of course, cannot normally be present), the delicacy of the test being about 1:20,000. As explained in a previous article, this test may be used in titrating without an indicator to determine the proportion of HCl accurately after a preliminary rough test with dimethyl.

The differentiation of the various organic acids is not very important, nor is it important to know how much of the acidity is free and how much in the form of acid salts. Or, perhaps, it would be more correct to say that these points cannot be determined clinically with any degree of accuracy, so that we do not know how significant they might be. For instance, using congo-red or benzopurpurin, we may find no free acidity, and yet obtain a degree or two of free HCl, not to mention some free fermentative acidity which is undoubtedly present. Dr. Mark I. Knapp, of Brooklyn, has written in a very interesting way on these points, but his observations are not generally accepted by chemists.

An excess of butyric acid may be diagnosed from a strong, rancid odor. That of acetic acid is indicated by a reddish reaction with dilute solution of ferric chlorid and by the characteristic odor of the compound ether formed with alcohol. Lactic acid and lactates impart a yellow to greenish-yellow tint to almost colorless solutions of ferric chlorid. Or the color of the ferric chlorid may be masked with carbolic acid, 4% in water, or a single drop of liquor ferri chloridi may be mixed with a faintly colored solution of gentian violet, 1 or 2 cc. of the latter being used. Either of these solutions becomes yellowish or greenish-yellow on adding a drop of filtered chyme, if there is a considerable lactic fermentation. Even a moderate excess is demonstrated by the same color change on heating, and all stomach contents give the reaction if a considerable quantity is used or if the lactates are first extracted with pure ether. The quantitative determination of lactic acid is of no practical importance and, in my opinion, lactic fermentation is no more diagnostic of cancer than any other fermentation. Indeed, the diagnostic value is primarily of stagnation and only secondarily of cancer, in the sense that marked stagnation is more frequently due to cancer of the pylorus than to any other one condition. In this connection it may be repeated I have never been able to prepare a test-meal of oatmeal or other cereal free from lactic acid. In general, only a marked and persistent organic fermentation has any diagnostic significance.

Hydrosulfuric acid is detected by holding a piece of filter paper wet with lead acetate solution over a test-tube and volatilizing the stomach contents by heat. No other substance likely to be present will make the paper brown or black. Eructations may be similarly tested by having the patient expel the gas through a tube which passes beneath the surface of a lead acetate solution. Hydrosulfuric acid gas indicates proteid decomposition either in the stomach or in the intestine, with regurgitation or passage of intestinal gas through the pylorus. It is said that H₂S is formed from proteids only by the colon bacillus.

Tests for Carbohydrates.—Starch and dextrins are

tested for by iodin. A watery dilution of the tincture may be used or the liquor. For laboratory purposes the following may be used instead of the liquor:

Iodin.....	1
Potassium iodid.....	10
Water.....	100 or 200

A bluish color indicates starch; a reddish tint, erythro-dextrin. A failure of reaction shows that the ptyalin digestion of cooked starch has passed at least as far as the achroodextrin stage. Usually a muddy, reddish purple color shows that both starch and erythro-dextrin are present and the achroodextrin stage is rarely found until at least 1½ hours after eating. Maltose may be detected by any of the modifications of the alkaline-copper-sulfate test for glucose. It is practically always present when cooked starch has been included in the test-meal, unless after a long interval, as three or four hours. In the absence of proper and, as yet, unachieved discriminations of dextrinization and quantitative standards of carbohydrate digestion in the stomach, these tests are practically valueless and may well be omitted. Even if their exact significance were worked out they would be essentially tests of salivary digestion which amount to very little physiologically. Starch can practically always be found in the residue after filtration, even many hours after a meal, as insalivation is rarely thorough and ptyalin is a weak ferment.

Bile.—It has been claimed that the greenish or yellowish tint of chyme, commonly attributed to regurgitation of bile, is really due to ingredients of hyphomycetes. In nearly every case macroscopically suggesting bile and actually tested by me bile has been found. It is certainly the true explanation of a yellow color not seen in the chyme at first extracted but appearing in the latter portions obtained after expression and suction, especially when the patient retches. Green bile always indicates the presence—*i. e.*, the oxidizing power—of free HCl and if the patient gives a distinct history of yellow or green vomitus and we can rely upon his observation we can safely conclude that HCl has been absent, or present, respectively. However, yellow bile may be found in chyme yielding free HCl in notable quantity, but it will change to green on standing. Aside from Gmelin's and the iodine ring test, the following may be employed: Equal parts of 1% aqueous solutions of sulfanilic acid and sodium nitrate, respectively, are mixed. To 1 or 2 cc. of the mixture a few drops of the suspected fluid are added. In the presence of bile a ruby red color develops, changing to amethyst, on the addition of one or two drops of strong HCl. If HCl is already present in the chyme, equal parts of the mixture and of chyme give a deep violet. It may be necessary in chyme containing but little free HCl to add a little more of the acid—a drop of the strong HCl.

Proteids.—In applying the ordinary copper sulfate and alkali test for sugar, the fluid to be examined—would not the term *investigandum* be convenient for general use?—should be added in a ring above the reagent and, if necessary, slightly warmed but not boiled. A lilac band indicates albumoses or peptones. It is almost always present in chyme, but its complete absence indicates achylia. The ordinary qualitative tests for proteids are practically valueless, but my method of centrifugal quantitative examination is of comparative value if used as a matter of routine. Dissolved albumin, which is apparently due to the action of acids but is not acid albumin in the technical sense, is precipitated by heat. After thorough centrifugalization this should amount to 2-4%. The decantate is treated with ammonium sulfate, throwing down albumoses amounting normally to a mere trace up to 4%. The decantate from this test, which still contains a minute amount of very light albumoses, is precipitated with phosphomolybdic acid, which throws down a very bulky precipitate of ammonium—if present—peptones and amido and other nitrogenous compounds. This

precipitate should amount to 20–30%. There is, as yet, no feasible method of separating true peptones from the other nitrogen compounds. If, however, a small amount of phosphomolybdic acid, preferably 1 cc. of 10% watery solution, be first added and the mixture centrifugalized, and then the same solution is added up to 5 cc.—the centrifuge tube then containing 15 cc. in all, if 10 cc. of filtrate be used as the *investigandum*—there will be found to be a fairly distinct demarcation in color between the two parts of the precipitate, the lower, more bulky part, representing more nearly the peptone. This usually amounts to about $\frac{2}{3}$ of the total precipitate. As the albumose precipitate is small and quite different in color from that by phosphomolybdic acid, the latter test may be performed without decanting. Or the albumoses and peptones may be precipitated together with phosphomolybdic acid, ignoring the small amount of albumose which I have never found greater than 5% and seldom more than .5%. If the albumin precipitate is high and the peptone precipitate low, or if both or all are low, we may conclude that peptonization is impaired. This condition is found in general with diminished HCl secretion, chronic catarrh and cancer. If the first or second precipitates are high and the last low we may guess that the primary acidification is normal, but that the later, peptic, digestion is faulty, probably on account of impaired secretion of pepsin. If the final precipitate is abnormally high, the demarcation line is almost always relatively low, and we may infer an abnormal formation of ultra-peptone products, but the exact explanation and significance is not known. A final precipitate between 20% and 30% may be considered normal. Differential N-determinations of these precipitates have been essayed by several investigators, but practical results have not yet been reached and the methods are beyond the clinician's ability.

Microscopic Examination.—Various forms of starch, muscle fiber, plant hairs, cellulose, spiral ducts, diatoms, etc., are found, but are of no special clinical value, unless some medicolegal problem should arise, based on the food ingested.

Various microorganisms are found and high grades of fermentation are marked by an excess of long, thread-like forms, sarcinas, yeast cells, baseball bat bacilli, etc. While the last and thread-forms are especially common in lactic acid fermentation, no pathognomonic value attaches to such examinations, and differentiation of bacteria, etc., depends upon culture-methods.

It is worse than searching for a needle in a hay stack to attempt to diagnose cancer, ulcer, catarrh, etc., from the microscopic examination of the residue after a test-meal. Occasionally diagnostic material might be detected, but for any serious investigation with regard to these points the jejune stomach should be washed out. Scraps of exfoliated gastric epithelium are practically always found, as well as some leukocytes and mucous strings. Pavement epithelium and ciliated epithelium from above the stomach are of no direct diagnostic value but must be distinguished. Very minor traumatism by the stomach tube frequently cause the presence of a few red blood cells and the guaiac-turpentine test will then usually respond, although red cells may be seen when there has not been enough hemorrhage to meet the limit of delicacy of the hemoglobin test. Red cells resemble yeast cells, minute bubbles, fat drops, etc., but any considerable number may be detected by a skilled observer. In digested blood, hemin crystals may be developed by the use of a few particles of salt and a drop of acetic acid and by drying and examining under the microscope. Grumous blood has often passed the point at which hemin can be developed, but the brownish, irregular masses may be distinguished by one familiar with them. The appearance of bismuth must be learned by experiment to avoid confusion. Shreds of normal or catarrhal mucosa are quite often detached by the stomach tube and

it is sometimes difficult to distinguish these from indications of cancer or ulcer, although some authorities claim to be able to make the distinction in all instances. I freely acknowledge that the more I study these bits of tissue the less confident I am of their nature in any given specimen. Setting aside cancer and ulcer, it is extremely difficult to distinguish between the normal shedding of epithelium and indications of genuine gastritis. Indeed, I am disposed to think that every stomach is almost constantly in a state of localized catarrh. L. Kuttner,¹ in discussing achylia gastrica, makes the general statement that the study of particles of gastric mucosa is practically valueless. In many instances, however, shreds of mucosa, infiltrated with red and white cells, are found, which justify the belief that they emanate from the borders of an ulcer of some kind. In connection with the history we may differentiate between peptic, varicose and other forms of gastric ulceration. Cancer can never be diagnosed by the microscopic examination of gastric debris till it has reached an ulcerative stage—it ought not to be necessary to state such a truism. Occasionally considerable fragments of a cancer are brought up by vomiting or lavage, when a definite diagnosis can be made after teasing or cutting into sections. The ordinary, partially decomposed and digested debris from an ulcerating cancer is much more difficult of detection than has been stated by some authorities. I have never found any such fragment upon which I would be willing to base a diagnosis, yet the accumulation of probabilities by the appearances of a considerable number of such scraps has frequently led to a positive diagnosis, subsequently verified, and in no case has such a diagnosis been disproved in my personal experience.

BRIEFS ON PHYSICAL TRAINING.

BY

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No. 1.

The Physician Should Have a Practical Knowledge of Physical Training.

It has been said that the general trend of the profession is toward therapeutic nihilism. To this statement I would most respectfully demur. In my opinion, the present trend of medical thought is toward drug nihilism, not therapeutic nihilism. There is a most beneficial tendency on the part of the latter-day physician to rely less and less upon drugs, while seeking methods of health-building more in accordance with rational medical philosophy and along strictly physiologic lines. Preventive medicine is becoming richer in resources. Physical training has this advantage, that it is not only a very important department of preventive medicine, but it can enter largely into curative therapeutics. When it is understood by the profession generally that the physiologic training of muscles invariably results in an improvement of circulation and visceral conditions, general nutrition and all the bodily functions permanently profiting by proper exercise, the importance of the subject will be much better understood. Physical training as a distinct department of therapeutics has been neglected. Nowhere has the profession exhibited more inattention and absolute ignorance than in this particular field, unless perhaps it be in the field of dietetics. It seems to be quite the fashion for the physician to prescribe exercise in an offhand manner for his patients.

The grim humor of the situation is illustrated by the occasional prescription of the walking habit to a sick postman, and of plenty of outdoor air to a gripman on a

¹ *Zeitschrift für klinische Medizin.*

cable car. These incongruities, however, do not disturb the doctor. He goes right on prescribing a remedy of which he knows nothing.

The routine prescription of an abundance of walking is perhaps rarely ill-timed, but as a system of physical training, when such is indicated, it is rank fallacy. A department of physical training should be an adjunct to the chair of general therapeutics in every modern medical school. The instruction ought to be practical, not theoretic, and the various forms of physical training, which should, of course, be based upon rational physiologic principles, should be practically studied, not only upon the persons of their classmates, but upon themselves, by all students. I would suggest that practical experience in dietetics, hydrotherapeutics and electrotherapeutics should be conjoined with the practical study of physical development. This department of physical culture should also include massage and Swedish movements; these valuable therapeutic resources should no longer be relegated to irregulars and quacks. If the medical profession had done its duty in this respect, osteopathy would not have been possible.

The layman not infrequently has a valuable lesson to convey to the profession. I remember once taking an interest in an intelligent young mulatto who chanced to be working in a gymnasium which I frequented. Noticing that he had a special predilection for exercises tending to chest development, I asked him what his special object was in training.

He said that he was suffering from his third attack of incipient tuberculosis. In the two previous attacks he found that medical men could do nothing for him so he determined to take exercises to develop the chest, thinking this would help him. He improved and got apparently well both times, but had been compelled to discontinue training because of lack of time and to this fact he attributed the attack from which he was then suffering. Upon being asked if he had confidence in getting over his present trouble by training, he replied that he was sure he would get well, as he was getting better every day.

At last accounts, some years later, this man was perfectly well and taking systematic exercise as a matter of precaution against recurrence of his pulmonary trouble.

It has been my fortune to observe many persons in training in whom incipient tuberculosis, or a distinct tendency to pulmonary disease, with the usual contracted chest and weak lungs, with or without hereditary predisposition, existed, and I have accumulated ample evidence of the value of physical exercise in the prevention and cure of pulmonary tuberculosis.

So far as the value of general muscle training is concerned, there is much more to be said than it would be wise for me to attempt in the series of short papers which I purpose writing upon the subject. The individual who has systematically trained his muscles within physiologic limits is better capacitated thereby for the battle of life. In addition to the advantages of symmetric muscle development I would mention the increased activity of tissue metamorphosis and stimulation of the excretories of the body which is always beneficial when kept within reasonable bounds, but which, contrary to the ordinary belief, may become injurious. Like all other remedies which are potent for good, physical training has within it the capacity for evil.

The physician, of all men, should endeavor to attain physiologic muscular development. The impression made by the springy step and vigorous breezy manner of the physician whose muscles are well trained and under perfect control upon the *morale* of his patient is decidedly tonic.

It is a common experience that, while the phenomenal athlete and the ideal scholar are rarely, if ever, combined in the same individual, the best mental effort and the most abundant intellectual products are likely to emanate from the man whose muscular system is in

a physiologic condition—*mens sana in corpore sano*. Exceptions to this rule are abundant, but the fact remains that it is not from the Fitzsimmons and Sandow types, nor from physical degenerates, that the highest intellectual capacity is expected. It must be remembered that in such individuals intellectual development can never be, in the ordinary acceptation of the term, of a high order.

The value of a knowledge of physical training in such special departments of medicine as neurology and surgery, more particularly of orthopedic surgery, is at once obvious.

In the consideration of physical training and its methods, the end and aim of the latter should be understood to be, to express it briefly, the utilization of such physical capital as is inherent to the particular individual and to bring it up to its normal physiologic standard. The object of physical training should not be to bring the individual up to any standard save that which is determined by his natural capacity.

The character of work should be selected with this end in view, the object being to develop the muscular and visceral capacity of a given individual to the full normal standard. A small muscle under proper control, and the nutrition of which is normal, may be ideal in its development, while on the other hand a large, bulgy, illy controlled and stiff muscle is merely pathologic, and is the direct antithesis of the standard at which we should aim. Not to put an abnormal amount of muscle upon an individual whose natural capacity for muscular development is small, from the standpoint of bulk, but to develop thoroughly and make ready to his command the muscular tissue to which he is naturally entitled, should be the ultimate aim of physical training. The round, smooth, supple, "intelligent," cat-like muscle is the ideal standard.

It must be admitted that anything which tends to the physical improvement of the race within strictly physiologic limits must be of inestimable value to humanity. It needs not the testimony of artists to demonstrate that humanity has drifted widely from the ancient ideals. It is a wellknown fact that the ideal human form is very rare, that depicted by the modern artist being usually a composite, and often a very poor one. He is compelled to use one model for the torso, another for the lower limbs, another for the upper, another for the neck, another for the head, and the feet and hands must usually be taken from separate models.

It is not my intention to endorse the ideal proportion standards of the average artist, as idealism and normal anatomy and physiology do not usually harmonize in his hands. There is still, however, a lesson to be learned from the difficulties which beset him in his endeavor to secure suitable models of the human form. As illustrative of the infrequency with which figures approximating the ideal are to be found in the male, I will state that, in a series of two thousand examinations for military service, I noted but one subject who, from a casual study, would conform to my ideal of perfection of physical proportions. This individual was physically untrained, and had never performed much muscular labor. He was as ignorant as possible, and had no idea that there was anything out of the ordinary in his physical proportions.

The tendency on the part of human nature is to glorify the extremes of intellectual and physical development. The standard of intellectuality, on the one hand, is the degenerate genius, and, on the other, the physical freak. The advantages to the race, of harmonious physical and intellectual development are not appreciated as they should be. It is not well to lay physical perfection as a burnt offering on the altar of genius, nor to sacrifice intellectual culture to physical development. Neither the extraordinary genius nor the physical phenomenon are such potent factors in our social system as hero-worshippers would have us believe. It is the well-balanced

man and woman who furnish the power that moves the world. The crank genius is, after all, but an incident in the machinery. He may develop certain things in literature, science, and the arts, which constitute a long step in advance of his day and generation, but oftentimes the same things would eventually be accomplished in a normally progressive manner by the average intelligence which constitutes the mainstay of the body social. It is true there are exceptions to this rule.

The happy medium between physical and intellectual development, if acquired by the human race, would stamp out degeneracy, and, far more than this, the transitory flight of geniuses across life's horizon would raise the average of intellectual capacity of the human race. The attempt to attain either the physical or intellectual ideal, as ordinarily measured, can bring only disaster—intellectual death on the one hand, and physical death upon the other—to man, the most precious fruit of the tree of life. Both the physical and intellectual average of the human race might be raised to the physiologic ideal if man applied the same common sense rules to the breeding of human beings as he does to that of the lower animals. Under present conditions there must be a large proportion of weaklings, both intellectual and physical. A more intelligent treatment of these weaklings will, however, do much toward the prevention of disease, pauperism and crime. More attention should be paid to the bodies of the weaklings in our social system, as a direct prophylactic against evils, in the correction of which vast sums are yearly expended. When our social system expends at least as much in giving clean and healthy bodies to the individuals composing it, and especially to the young and growing children, as it does to correctionary and curative institutions, the expense of the complicated machinery of our legal and penal systems will be enormously reduced. The experience of the Elmira Reformatory in the matter of physical training of young culprits has proved the truth of the foregoing assertion beyond dispute.

GONORRHEA IN CHILDREN.

BY

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The occurrence of extragenital infection by the gonococcus of Neisser among infants and young children is by no means uncommon. The usual seats of attack are most often found upon the conjunctivas and the mucous outlets of the body, as the mouth and anus. So great, indeed, is the frequency and so destructive are the effects of ocular infection that many States have upon their statute books laws which are mandatory in compelling the physician and accoucheur to exercise the most careful and approved methods of prevention. Gonorrheal ophthalmia neonatorum is most often encountered among the poverty-stricken and illiterate. Its origin can, in the majority of instances, be traced to those cases in which the physician is handicapped by ignorant parents or his own carelessness.

The textbooks of medicine and surgery are fully descriptive of these various forms of gonorrheal infection, and contain full accounts of the latest methods of prevention and cure. But upon gonorrhea of the urogenital tract, especially in males, they are generally silent; and apart from the mere statement that such infection can occur they leave the student uninformed as to the more important points in symptomatology and therapeutics. Gonorrheal vulvovaginitis between the ages of 2 and 5 is frequently seen, especially in dispensary practice, and is traceable to gonorrhea in the mother or nurse, unclean rags and towels and the use of infected syringes. Many apparently innocent cases of vulvovag-

initis, diagnosed as secondary to oxyuris, ascarides, filth, and other local irritants, very often may be proved to be gonorrheal by microscopic examination of the discharge.

The literature upon gonorrheal infection of the urethra in boys is very scant. Holt mentions the case reported by Poynter, of a boy of 5 who required treatment for urethral stricture secondary to an attack of gonorrhea at the age of 3. Reese records a case of specific urethritis occurring in a boy of 7, the subject of rape. That the disease is rare is unquestioned, since it has been met but twice within the past two years in a total number of dispensary patients exceeding 1,500. This fact alone is sufficient cause, however, why we should be on the alert and view with suspicion all instances of urethral discharge in young children.

One case which came under my observation was that of a colored boy, aged 8, who was the victim of rape. The second case is of sufficient interest, as to the manner of infection and complications, to warrant a full report:

CASE.—R. S., white male, aged 4, was brought to the dispensary of the Medico-Chirurgical Hospital with the following history: Both parents are living and well, as are two brothers, one younger than the patient.

Previous History.—The patient's birth was normal, and he was breast-fed for one year. Dentition was normal. He had measles at 2 years, chickenpox at 3. Otherwise he has been well.

Present History.—February 14, 1902. The patient complains of burning and painful urination and intense itching about the penis. When seen, he had not been able to micturate for 16 hours. There is severe pain and a feeling of weight in the hypogastric region. He cannot walk erect, but leans forward with legs separated. Examination of the penis reveals an intensely inflamed and adherent prepuce, which is in the position of phimosis with a small preputial orifice from which exudes a thick, creamy, yellowish discharge. The foreskin is edematous, and the bladder is easily palpable for 1½ inches below the umbilicus. The child is fretful and his expression is anxious. Pulse is 100, temperature 101° F.

Some smears were made and examined immediately by Drs. L. N. Boston and P. J. Craney, who reported the presence of gonococci in large numbers. The mother was questioned and denied any vaginal disease. She lived in a disreputable neighborhood, and stated that the lad was wayward and was in the habit of picking rags and cloths from refuse boxes. At night he slept with his 8-year-old brother and during the day was left in charge of a female friend. This woman also denied any vaginal discharge, and subsequent examination of the vaginal secretions of both women failed to discover the micrococcus of Neisser.

The presence of gonococci was not considered a contraindication to circumcision, the necessity for which seemed urgent to relieve the symptoms and to provide for better drainage. The operation was done under chloroform anesthesia, and within a short time a large quantity of urine was eliminated. The parts were kept moist with a wet mercuric chlorid dressing, and the cotton which received the discharge was changed frequently. Irrigation was tried, but had to be discontinued on account of the pain and fear. Within ten days the circumcision wound had healed, but the infected urethra still continued to emit its purulent discharge. Restricted diet, broken doses of calomel at times, plenty of water and alkaline drinks, together with a modified Lafayette mixture, completed the treatment, and within two months the discharge had ceased. The boy was ordered not to handle his penis nor to carry his hands to his eyes, which fortunately escaped infection.

This boy probably received the gonorrheal pus upon his hands and by this means transferred the infection to the parts involved. The lesson which this case teaches may be embodied in the following conclusions:

1. All urethral discharges in young boys should be viewed with suspicion.
2. All such discharges should be submitted to a microscopic examination.
3. Should the gonococcus be found the possibility of the case assuming a medicolegal nature should be remembered.
4. The question of rape should be carefully eliminated or conclusively proved.
5. Treatment consists in securing local cleanliness and a free action of the emunctories in conjunction with the administration of urinary antiseptics and alkalies.
6. Gonorrhea is no contraindication to circumcision.
7. Vulvovaginitis in little girls is very often due to gonorrhea.

SPECIAL ARTICLES

VITAL STATISTICS: A PLEA FOR ACTUARIAL ADMINISTRATION AND CONTROL OF THE GREAT RESOURCES OF PREVENTIVE MEDICINE.

BY

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of Baltimore, Md.*[Concluded from page 289.]*

SOME OLD USES AND NEW COMPLICATIONS OF STATISTICS.

The laboratory has of late filled so large a place in the prosecution of scientific research that other and older methods of inquiry do not attract enthusiastic and patient workers as they formerly did. The practice of numerical statement has, with the development of laboratory methods, grown to a degree of tediousness far exceeding that of vital statistics and holds hundreds of workers to tasks of mere enumeration. The statistics of hematology, for instance, although involving minute and protracted labor, are studied with marvelous patience and have become indispensable to the practice of medicine and surgery.

Numerical statement is more extensively demanded and more generously supplied at present than ever before in the history of medicine, though some of the older and no less profitable uses of the statistical method have fallen somewhat into disuse.

For the purpose of showing that studies in vital statistics may and often do point to true conclusions well in advance of the studies of minute phenomena, I venture to produce here a statement of Longstaff made in 1880 which has come to the final proof in this year of grace, about a quarter of a century after it was written. At the end of an interesting statistical study on "The Causation of Summer Diarrhea" Longstaff says: "There exists . . . a specific form of diarrhea which makes its appearance in the summer months, disappearing again with the advent of cold weather; this disease kills persons at all periods of life, but in much larger numbers at the extremes, and in by far the greatest proportion during the first two years after birth." This is a remarkably definite statement, which, if it be affirmed by the results of other and more conclusive methods of investigation, will be entitled to admiration as a feat of logical analysis.

Many of us remember the long battle of the unicists and dualists concerning croup and diphtheria. The first proclaimed unicast, Bard, appeared forty years before the word diphtheria was coined. From Bretonneau (1828) to the sixties the unicists grew numerous, and from then to the nineties the dispute was hot. It is of more than curious interest to note that the medical statisticians were unicists. When presented in graphic form the statistics of croup, diphtheria, cyanche maligna, and quinsy from 1850 to 1880 seem as suggestive as those from 1880 to the present are confirmatory of the demonstrated truths of the later period. The records display the medical mind in process of discovering its own common sense.

Another vague perception almost as ancient concerns the relation of puerperal fever to erysipelas. In 1874 Minor wrote a paper on "Erysipelas and Childbed Fever," based upon the returns of the Ninth Census and upon an epidemic of puerperal fever in Cincinnati. This paper attracted wide attention.

It happened that 1874 was a memorable year for English obstetricians, and the soul of Matthews Duncan was vexed that the unprecedented ravages of puerperal infection should be connected with the unusual prevalence of erysipelas. He published a paper in 1876 in which, by pointing out the no less striking parallelism of the rheumatic curve to that of erysipelas, he sought to prove that neither puerperal fever nor erysipelas is an epidemic disease, and that the two diseases are not etiologically related. Two years later a trained medical statistician, Longstaff, attacked by the graphic method some 89 of the causes of death found in the Registrar-General's reports, and when he had completed 1,425 of the 3,916 operations undertaken, he found himself strongly impressed with the apparent kinship of puerperal fever, erysipelas and rheumatism. He says with

regard to the former two, "I find it difficult to avoid the conclusion that they are both due to one poison" (1880). And again in 1890, on the same subject, "A relationship which holds good in the several parts of the country as well as throughout the entire area cannot be fortuitous." With respect to erysipelas he says in 1880, disregarding the settled notions of the time: "We may infer some close relationship to rheumatic fever—a point that I must reserve for further investigation." Again in 1890, having in the meantime read Duncan's paper, he expresses surprise that Duncan should have selected rheumatism as a typical nonepidemic disease, and says with admirable caution, "The term rheumatism is too vague for our purpose, and another ten years must pass before we can draw a conclusion." "Another ten years" brought Döderlein, and with respect to rheumatism, in so far as the vagueness of the term has diminished, Longstaff's opinion of 1880 might now be stated more boldly.

Not only have statistical studies pointed in this way to true relations, but they have also definitely distinguished diseases which bore superficial evidences of kinship, as, for instance, scarlatina and diphtheria, variola and varicella.

I cannot leave the subject without considering for a moment one or two comparatively new points in the practical application of the statistical method to the problems of hygiene. Some well recognized sources of error have, through the growing complexity of modern life, grown more serious and more puzzling. The classification of population according to age has always been difficult on account of false statements by young women, by old people of both sexes, and by parents with respect to the ages of children. This tendency to falsification has become more important of late years, through the influence of the laws on child labor, by the increasing difficulty experienced by men above 40 in getting employment, and by the spread of industrial insurance. Great corporations will no longer engage men who appear to be, or who admit they are beyond a certain age. Many of them also retire their employes at a certain age. Altogether the man of today is as hard beset as ever woman was by the temptation to conceal and misrepresent his age.

It is possible that a similar stress of circumstances may have operated to alter the relations of causes of death. For instance, a notable decline of the pulmonary tuberculosis rate has of late been a cause of congratulation among hygienists, while a steady and strong rise of the pneumonia rate has given them some concern. The two diseases have, in some large cities, exchanged rank.

Almost every experienced hospital physician may recall his sensations on the occasion when he first learned that his certificate of death from tuberculosis annulled the insurance claim of an impoverished family. The dispensary records of the case may have covered a period of years with occasional intervals when the patient appeared to be well. During one of these intervals he may have obtained insurance, acting in good faith, never having been informed of his disability. But no matter what may have been the moral aspects of the original contract, its outcome is in all cases distressing. The stiff uprightness that is always equal to such an occasion is a trifle beyond envy. Few attain and none aspire to moral ankylosis. One may admit that men of any and every calling can withstand the pressure of these circumstances as well, almost, as physicians, but this proposition has two cutting edges. It offers advantages to the dishonorable, and it takes advantage of the honorable. The results are possibly discoverable in the decline of the tuberculosis curve.

Mr. Frederick Hoffman has furnished conspicuously fine statistical studies of the tuberculosis mortality experienced by the Prudential among the industrial classes. Prudential does not void its contracts on account of the history of tuberculosis, and it would be of great interest to compare the tuberculosis experience of Prudential with that of companies pursuing the opposite policy. But statistics for this use are, so far as I know, not published.

If the decline of the tuberculosis rate should be in part explained by the medical perversion of the death certificate, one could face the proof without blushing for his profession, for this phase of medical certification is perfectly familiar with

regard to alcoholism, syphilis, gonorrhoea, abortion, and suicide.

The prevarication of medical men is about as unsophisticated as "peek-a-boo," and the missing data are not usually very far to seek. Since the pneumonia rate has risen with the fall of tuberculosis and with the spread of industrial insurance, one would examine first the pneumonia returns. A study of the general mortality from pneumonia alone would not suffice, but it would furnish some indications. If the age incidence of the pneumonia mortality has been markedly altered during the period of its rise, and particularly if an excessive mortality appears to have fallen upon the middle periods of life; if the occupation distribution of the pneumonia mortality has changed so as to fall disproportionately upon the wage earners; and if a similar analysis of the tuberculosis mortality shows that the gains are credited to corresponding ages and occupations, then an indictment of the death certificate will surely be found. Next, if by appeal to the figures of the companies it is found that the mortality accounts of those companies whose contracts are contestable for tuberculosis, when compared with the general mortality account, are somewhat long in pneumonia and short in tuberculosis, while the accounts of those companies whose contracts are incontestable for tuberculosis are, as compared with the general mortality, long on tuberculosis and short on pneumonia, a conviction of the death certificate must follow. That such an investigation would result in a correction of the tuberculosis rate is more likely than that the pneumonia rate would be reduced in a corresponding degree.

The doubt which is here expressed concerning both of these rates is based upon something more than suspicion, for proposals to amend medical certificates of death have several times come within my experience, and attempts on the part of claimants in insurance to suppress the facts concerning tuberculosis are often referred to in medical gossip. Observe, also, that this suspicion of error concerns the largest single problem of the day in public hygiene.

SUMMARY.

The natural sciences have contributed to the welfare of mankind no gifts more beneficent than those which are appropriated to medical uses. Preventive medicine, in particular, has been vastly enriched, insomuch that we seem in danger of forgetting that resources so great need to be economically administered. But even unlimited means cannot, by mere distribution, either reach the greatest number of beneficiaries or confer the greatest benefit so far as they reach.

The profits of public hygiene are realized no more in individual safety and comfort than in improved business and social conditions. It is in the latter aspect that the benefits of public hygiene are most striking and have greatest influence upon appropriations of public money to sanitary work. Moreover, the agencies themselves, whose employment leads to such results, need both the highest form of certification for their present performances and the surest actuarial basis for their future enterprises.

As certainly as the problems of transportation wait at present upon the perfection of roadmaking rather than upon improvement of rolling stock or motive power, so certainly do the "giants of the hour," the natural sciences tributary to preventive medicine, wait upon a correct and economical administration of the resources of public hygiene.

The urgent need of the moment is a thorough and comprehensive plan of accounting for vital memoranda. The sources of essential information are, speaking broadly, two, viz.:

The federal census, which, being now maintained as a permanent part of the national government, should (a) be, at the approach of another census year, better than ever prepared rapidly and accurately to count the people, making notes of all the data needed for statistical purposes; (b) should make such *ad interim* studies of the births and deaths occurring in nonregistration areas as will serve for the better correction of the enumerators' returns for the census year; (c) should commit all vital returns to the hands of a trained medical statistician who understands the moods and tenses of vital mathematics.

Local registration under State laws, embracing in their operation all the people, rural as well as urban; with substantial agreement among the States as to the essential data of

record; respecting fully the rights of registration cities to the custody of their own records; but securing absolute unity of method in statistical treatment, with an open display of both gross and net mortality and of the means of arriving at population estimates.

Local registration must cover: (a) Records of death made at the time and place of their occurrence, by the most competent persons acquainted with the facts, including a medical certification of the cause of death, the making and filing of such a record being in every instance an indispensable preliminary to the disposal of the dead body; (b) records of birth, secured by the payment of fees, by every appeal to private interest and public necessity, including, if possible, conditioning of certain privileges of citizenship upon recorded evidence of attained age; (c) records of marriage and divorce, with all such items of information as have statistical importance; (d) records of sickness, including all cases of those infectious diseases which fall within the provisions of the notification laws, all cases of sickness which come under study in the public health laboratories, all sickness which is relieved at public cost, all sickness falling under the observation of inspectors of schools, tenements and factories, and all sickness occurring in the public services, *e. g.*, Army, Navy, police, and fire departments.

Finally, the data of vital statistics should be systematically utilized, not only for the broader purposes which have grown into common use, but for the minuter inquiries which such records may answer.

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THE IMPORTANCE OF MECHANICAL MANUAL TRAINING TO THE SURGICAL STUDENT.

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It is deplorable that the most superficial investigation and observation of the methods of the majority of surgeons today reveals that there are a great number sadly deficient in speed, dexterity, and ability to apply readily mechanical principles so important in the simplest surgical procedure. In making this statement it is not intended to give ground for inference that I think there is any retrograde tendency in surgical science, because it must be conceded that we have more brilliant surgical operators today than ever before, and that they are doing work creditable to the utmost degree. Let us, however, not be led into the unenviable position of believing the profession "can do no wrong." Better be honest with ourselves and admit deficiencies exist not only in the rank and file, but that all err at times.

We must admit that were we brought face to face with the proposition of having to be operated upon ourselves for some major or even minor trouble, we would quickly decline to have many surgeons of our acquaintance, who possess great reputations, perform the operation because we know they are lacking in the points mentioned.

With such conditions existing we are confronted with the question, Why is it? It certainly is not the result of any one cause, but like most evils is due to a combination of influences, chief of which, in my opinion, is the little attention that is paid in our medical schools to manual training and the practical teaching of mechanical principles. Were curriculums more thorough in that respect it would work a twofold good. A long and thorough course of such teaching would develop and train the future surgeon in manual dexterity as nothing else will; secondly, when we remember that the dream of 9 out of every 10 medical students, prompted as they are by the tangibility of operative work seen from the much haunted first row of the amphitheater, is that they will some day be sur-

geons, it would, in many cases, be dispelled by the early recognition of their own natural deficiency in mechanical aptitude, manifested by their awkwardness and inability to handle the simplest tool. We need as many good medical men as we do surgeons, and the former should receive equally as good incomes as the latter. Better let those who have and those who have no natural aptitude for surgery learn early in their course of study that they may, so far as is possible, choose wisely the branch upon which they should spend their greatest energy, time, and money. There are many graduates in medicine and surgery who, by studious application, have mastered the principles of surgery and surgical anatomy to a degree of perfection which enables them to give, theoretically, the technic of operations in the most masterly manner. Call on these same men to perform such operations, and how disappointed we may be to observe awkwardness in the very way a knife is picked up, much less handled in dissection. The number that will take hold of the handle of a hammer at the proper point, and not short up as if it were really too long, is surprisingly few. Those who attempt to sever a bone speedily by "jiggering" a saw are more numerous. Many could well learn a valuable lesson from our distastefully compared competitor, the butcher, as he divides the femur of a beef with the graceful strokes of a saw in cutting a round steak with far less muscular mutilation than is seen in the majority of amputations.

Admitting that these deficiencies in most instances are due to a lack of actual experience in the manual use of tools, or instruments, and that nothing but repeated practice in anything brings perfection in those blessed with natural aptitude, and that it is especially essential to the great majority not so gifted, it is reasonable to claim that opportunity for such experience should be open to all students of surgery whose one great accomplishment should be dexterity in the use of instruments.

How is such practice to be obtained? Not by insisting upon adding to the already long curriculum an apprenticeship at a mechanic's bench, although many practical lessons to the future surgeon can be learned by spoiling a few drills or other tools in an occasional attempt at such work. However, it cannot be too strongly recommended that all of the operative courses now given to surgical students should be lengthened, and not limited in the senior year to one or two hours of ligation and amputation work upon cadavers unfit for dissection, this being the extent of such courses in many of our medical schools. True, some have a more extensive course, but more have less or none. In every large hospital there should be a workshop for the manufacture and repair of orthopedic and other surgical appliances, and no college has a right to confer the degree of Doctor of Medicine unless its students have the clinical and other advantages only to be had in a modern hospital. Therefore I would suggest making it a requirement that all students aspiring to a surgical practice devote a certain number of hours each year in such hospital workshop making some of the simple appliances used in every-day surgical practice. If it were no more than the making of a fracture box, or a Bond splint, they will have gained a mechanical knowledge, a practical use of tools and a manual dexterity that in their future work as operating surgeons will be of the greatest value.

Since the advent of anesthetics the profession has lost the great stimulus to perform rapid and dexterous operations, viz., that of the patient's physical and mental suffering during the operation. Many patients die of "shock" who would be discharged as "cured" were the surgeons in charge able to operate more rapidly. At the same time, while speed is so desirable, haste should not be advocated at the sacrifice of accuracy. What we need most today to hold up the good name of the surgical profession and achieve the greatest good for suffering humanity is an increase in the number of good operators, competent to perform skilfully and rapidly those operations required most often. It is commendable in any surgeon to devote time and energy in devising new means or operations for the relief of conditions that at present are classed as incurable or inoperable; but the tendency on the part of some of our profession to be constantly on the alert to attempt that which no one else has ever done, or as the laity often expresses it, "see how near they can come to taking out the heart without

causing death," for the simple sake of notoriety, should be heartily condemned. It would be better for their patients, as well as their own good, did they devote their time and energy in perfecting their technic of herniotomy and appendectomy. They may think they are past masters at both, but they who feel they can improve with each successive operation as a rule do the best work, and those who devote time in mastering the mechanical principles and manual technic, so important in surgery, are more likely to be skilful, dexterous, and successful operators. We often laugh at the country boy for his lack of knowledge of customs urban, but the brilliant success of more than one of our American surgeons has been in a great part due to the store of common sense and self-reliance acquired by a youth spent in close touch with nature and her numerous practical lessons; with daily opportunity and constant necessity of application of mechanical principles so important in the development of manual dexterity, notwithstanding, in many instances, a jack-knife served as the only working tool.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

February 14, 1903. [Vol. XL, No. 7.]

1. Gunshot Wounds of the Thorax and Abdomen. From the Viewpoint of a Civil Surgeon. W. L. RODMAN.
2. Sanitation and Politics. WALTER WYMAN.
3. The Drainage Canal of the Valley of Mexico. HENRY O. MARCY.
4. Sporadic Cretinism in Children. With Report of a Case from the United Hebrew Charities Dispensary. ROSA ENGELMANN.
5. Report of Two Cases of Dermoids in Children: One of the Testicle and One of the Ovary. With Note on the Infrequency of the First; the Origin of Both. SAMUEL W. KELLEY.
6. A Study of the Contents of the Vesicles and Pustules of Smallpox. A Preliminary Report. JAY F. SCHAMBERG.
7. Postmortem Examinations. W. D. HAINES.
8. The Diagnosis of Carcinoma of the Larynx. OTTO T. FREER. (Concluded.)

1.—See *American Medicine*, Vol. III, No. 25, p. 1038.

2, 3.—See *American Medicine*, Vol. III, No. 24, p. 989.

4, 5.—See *American Medicine*, Vol. III, No. 25, p. 1049.

6, 7.—See *American Medicine*, Vol. III, No. 24, p. 993.

8.—See *American Medicine*, Vol. III, No. 25, p. 1058.

Boston Medical and Surgical Journal.

February 12, 1903. [Vol. CXLVIII, No. 7.]

1. Irrigation in Acute Urethritis. ARTHUR L. CHUTE.
2. A Report of a Case of Multiple Neuritis of Questionable Origin. ARTHUR W. MARSH; remarks by GEORGE C. SMITH.
3. Subradial Cervical Carcinoma, Secondary to Carcinoma of the Breast. E. W. TAYLOR and G. A. WATERMAN.

1.—Irrigations in Acute Urethritis.—Chute says this is not done with the idea of aborting the disease, as any antiseptic solution capable of killing the germs buried in the tissues would seriously injure the tissues themselves. The irrigation acts mechanically by washing away the products of the disease. Rather than increasing he thinks it lessens the tendency to posterior urethritis. Some of its advantages are: A great increase in comfort; speedier recovery; lessened liability to complications peculiar to the acute stage, and probably a decreased liability to late complications. The amount of discharge is much lessened, ardor is reduced, and chordee is absent. Irrigation should be instituted so early as diagnosis is made. Potassium permanganate 1:8,000 gradually increased to 1:2,000; or protargol 1:2,000 to 1:1,000 gives the best results in the early stage. In the subacute or chronic stage, silver nitrate 1:15,000, gradually increased to 1:3,000 gives the best chance of cure. For internal medication he prefers oil of sandalwood in capsules of 10 drops. The technic of irrigation is fully given. [A.B.C.]

2.—Multiple Neuritis.—Marsh and Smith report at great length a case beginning with a slight attack of pharyngitis, followed by two weeks of general weakness with freedom from pain, but great nervousness; then seven weeks of pain, swelling, and tenderness in all four extremities, with hallucinations, followed by a month of freedom from pain, but increasing mental cloudiness, and finally four or five days of high fever, terminating in death. They discuss sewer gas poisoning, rheumatism or gout, a general nervous breakdown, and tuberculosis as the etiologic factors. [H.M.]

3.—Subdural Cervical Carcinoma, Secondary to Carcinoma of the Breast.—Taylor and Waterman report the case. A woman of 48 began to complain two years before her death of sensory and motor disturbances in the left arm, which in 21 months went on to complete paralysis. There was later disturbance of the left leg and less involvement of the right arm and leg. One year after the beginning of these symptoms a tumor of the left breast was first noticed, which proved to be cancer. There was kyphosis in the region of the fourth and fifth thoracic vertebrae, with erosion of one vertebra. At autopsy the membranes of the cord were found thickened in dorsal and cervical region. These thickenings when seen by the microscope were typically carcinomatous. The authors believe cancer of the breast had existed a long time before it was recognized and the malignant process spread to the membranes by metastasis. Important points in connection with the case are: A growth of long standing in the immediate neighborhood, but with slight involvement of the cord. Limitation of the new growth essentially to the subdural space. Extensive motor and sensory paralyzes from involvement of nerve-roots alone. Absence of pain attributable to invasion of sensory roots. [A.B.C.]

Medical Record.

February 14, 1903. [Vol. 63, No. 7.]

1. A Review of Some Recent Researches Relating to Cytolysis and Immunity. T. MITCHELL PRUDDEN.
2. The Problem of Epilepsy: Some Suggestions for Its Solution. L. PIERCE CLARK and THOMAS P. PROUT.
3. The Radical Cure of Inguinal Hernia with Local Anesthesia. J. A. BODINE.

1.—Cytolysis and Immunity.—Prudden traces the development of present theories from the early years of the new bacteriologic era. He explains the side-chain hypothesis of Ehrlich by which he strove to account for the phenomena of antitoxic immunity in diphtheria and tetanus. He illustrates his conception by the use of graphic figures, and shows the further application of the hypothesis in explaining cytolysis and bacteriolysis. He discusses the resulting modification of the doctrine of phagocytosis and the investigations leading to the discovery of agglutinative and precipitating substances with their diagnostic and forensic bearings, and briefly reviews Welch's hypothesis as to the cause of the greater potency of infectious organisms developed in the body over cultures of the same. He gives a table showing various forms of adaptation products, with their relationships and synonyms. He dwells on the problem of securing suitable complements to act with immune substances and on the importance of maintaining sufficient of these complements in the human body as protectives against infection, noting the reduction of them by alcohol, thus explaining predisposition. He touches on the outlook for the preparation of sera which will limit or destroy malignant or other tumors. Further development of present theories may help us to understand internal secretion and those disturbances of chemical adjustment which give rise to auto-intoxication. [H.M.]

2.—The Problem of Epilepsy.—Clark and Prout submit the results of histopathologic examination of the cortex in 21 cases and conclude that epilepsy is a disease resulting in diffuse and profound cortical degeneration; a highly complex sensory motor phenomenon, primarily sensory with a motor expression. The lesions are a swollen nucleus, destruction of the nuclear membrane and intranuclear network; easy extraction of the nucleolus by the knife, as it becomes a loose body in the nucleus; diffuse chromatolysis and other protoplasmic changes. These lesions result in disappearance of the cell as a biologic unit and its replacement by a gliosis. The lesions are induced by a toxic or autotoxic agent operating upon an organic anomaly of the cerebral cortex, which forms the predisposition. They urge special accommodations for the reception and study of each new case admitted to the colonies, arranged on similar lines to the psychopathic hospitals abroad, and they suggest that some central scientific advisory committee be appointed to formulate a correlated plan for future research. [H.M.]

3.—Radical Cure of Inguinal Hernia with Local Anesthesia.—Bodine has operated on 48 cases, using local cocaine

anesthesia in all cases, and in no case was more than one-half grain used. After getting through the skin and external oblique muscle, his aim is to find the iliohypogastric, the ilioinguinal and genitocrural nerves and cocaineize them by injection into the nerve substance. This abolishes all pain. The iliohypogastric is the most constant, was found in all his cases, and is the most important. All were inguinal hernias, in patients from 16 to 76 years. Five were strangulated, and these were slightly more painful than the nonstrangulated. Of the 43 non-strangulated cases, 6 had thick, adherent sacs, requiring scissors and gauze rubbing to separate the cord. In 5 the omentum was ligated and excised. In 1 the amputated omentum weighed 16 ounces, and was ligated in 16 sections. There was no pain in this manipulation. The appendix was adherent to the sac in one case, and was painlessly amputated without additional cocaineization. Three cases were of the congenital type. In 18 cases there was entire absence of pain; in 28 the pain was moderate, and in 2 it was acute when ligating the neck of the sac. In 3 cases of double hernia, which are classed above as moderate in pain, the second side was done with local anesthesia at the patient's request. [A.B.C.]

New York Medical Journal.

February 7, 1903. [Vol. LXXVII, No. 6.]

1. An Astigmatism Cured by Operation. GEORGE J. BULL.
2. Immigration a Factor in the Spread of Tuberculosis in New York City. HENRY L. SHIVELY.
3. Tuberculous Laryngitis. J. CLARENCE SHARP.
4. The Modern Aspect of Common "Colds." JOHN ZAHORSKY.
5. Some Unusual Cases of Appendicitis from Private Practice. HOWARD LILIENTHAL.

1.—Astigmatism cured by operation is reported by Bull. The left eye had an inverse astigmatism of 1.75 D., due in large part to the corneal curvature being greatest in the horizontal meridian. There was also an exophoria of 6° or 8°. He made a complete (subconjunctival) tenotomy of the left external rectus, being careful not to cut the capsule much beyond the upper and lower borders of the tendon. Three days later the ophthalmometer showed that the corneal astigmatism of the left eye had disappeared. The curvature of the vertical meridian had not changed; that of the horizontal meridian had diminished. An astigmatism of 1.75 D. had disappeared and the vision had changed from $\frac{1}{16}$ to $\frac{5}{8}$. Bull says that such an operation for the cure of astigmatism should be undertaken only in exceptional cases. If a tenotomy of one of the straight muscles of the eye can have the effect observed in this case, it is obvious that the tension of the external muscles has an important bearing on intraocular tension. He suggests that the cause of inverse astigmatism, sometimes progressive, in many cases of glaucoma, may be found in the position and relative tension of the ocular muscles. [C.A.O.]

2.—Immigration and Tuberculosis.—Shively takes up the subject of immigration and shows that it is a very important factor in the spread of tuberculosis in New York City. Of 497,791 steerage passengers inspected upon arrival at Ellis Island last year there were certified on account of dangerous contagious or loathsome diseases or of other physical causes 2,833 persons. The increase of alien immigration over the previous year was not quite one-third, yet the comparative increase of diseased immigrants for the same period was more than two to one of the entire number of diseased persons reported; only 29 were certified for pulmonary tuberculosis, one for chronic phthisis, and eight for chronic pleurisy. Shively believes that many cases of unrecognized tuberculosis were passed, as the staff of examiners is too small to permit of any but the most hasty and superficial examination. If the proportion of tuberculosis were the same for the entire number of immigrants coming to this country as for applicants for aid of the same class to the United Hebrew Charities, 4.8%, it would make the total number of the tuberculosis admitted 23,893 for the year 1902. Illiteracy renders futile the propaganda of education against tuberculosis among immigrants. [C.A.O.]

3.—Tuberculous Laryngitis.—Sharp divides these cases into two main classes: Cases in which the ulceration is confined to the true cords, ventricular bands and interarytenoid commissure, without infiltration of the surrounding structures;

and cases with ulceration of the arytenoids, aryepiglottic fold, true cords, and ventricular bands with infiltration, or infiltration without ulceration. He believes that this condition is always secondary to pulmonary tuberculosis. In patients with ulceration without infiltration, and with pulmonary involvement not far advanced, particularly if little digestive disturbance has occurred and the patient can well tolerate large doses of creosote, the chance of recovery is good. But if infiltration of the aryepiglottic fold and arytenoids has occurred, no matter how slightly, the patient will certainly die unless he can at once be removed to a high altitude and dry climate. If to the infiltration is added an ulceration of the aryepiglottic fold and arytenoid the patient will die in from three to six months. He should receive morphin enough to keep him comfortable and to quiet his cough. Creosote should not be given in these cases, as it irritates the mucous membrane. Cases in which the tuberculous deposit has not broken down the author prefers to send to the Adirondack Mountains. Cases in which there is ulceration of the interarytenoid commissure, ventricular band, and true cord, but in which infiltration is absent, will do well on large doses of creosote; and if the drug is well borne a large percentage of the patients will recover if they lead an outdoor life. Sharp insists upon these patients bathing every morning in as cold water as possible and sleeping in a well-ventilated room. He does not advise any spraying of the larynx. [C.A.O.]

4.—Common "Colds."—Zahorsky maintains that colds are contagious and that a relative immunity follows an attack. The immunity conferred is fleeting. The disease is prone to occur in the winter because of imperfect ventilation. Repeated colds may be explained on the ground that different germs produce disease at different times. The digestive apparatus and general nutrition should receive attention. A change of diet is often advantageous. The chronic deformities and affections of the upper air passages must be corrected. [C.A.O.]

5.—Appendicitis.—Some unusual cases are reported by Lilienthal. The first case was that of a girl aged 16, who apparently suffered from an acute attack of recurrent appendicitis. An almost solidly obliterated appendix was removed that showed no evidence of acute infection. It was noted that the ileum was thickened and injected, and that the mesentery was filled with swollen lymph nodes. The diagnosis of typhoid fever was made. Death occurred after several days. The second case was appendicitis accompanied by a severe hemorrhage from the bowel. Partial recovery followed, but some months later the symptoms again became acute, and there was a profuse discharge of dark blood from the rectum. On incision, an axial twist of the appendix with its mesentery was found. There was a distinct hemorrhagic appendicitis with clots within the organ. Prompt recovery followed. The third case was severe septic nephritis following an operation for an apparently mild appendicitis. In another case the gangrenous appendix, already perforated and containing a large concretion, was found between the walls of the mesocolon, which was itself extremely edematous. Perfect drainage was established, but death occurred three days later. A case is reported of a man of 33, who three years before and again one year before had been operated upon for suppurative appendicitis. A third attack following, the appendix, a nodular tumor, and the cutaneous cicatrix were removed. Complete recovery followed. A case is also reported in which syphilis caused delayed union in the abdominal wound which healed readily following the administration of potassium iodid and mercurial inunctions. There was no signs of syphilis, except the progress of the wound and a mealy eruption one month before operation. [C.A.O.]

Medical News.

February 14, 1903. [Vol. 82, No. 7.]

1. A Study of a Bacillus Resembling the Bacillus of Shiga, from a Case of Fatal Diarrhea in a Child; with Remarks on the Recognition of Dysentery, Typhoid, and Allied Bacilli. PHILIP HISS and F. F. RUSSELL.
2. Postdiphtheric Ocular Paralysis. P. N. K. SCHWENK.
3. Postdiphtheric Paralysis Affecting the General Nervous System. LUTHER C. PETER.
4. Postdiphtheric Paralysis Affecting the Ear and Throat. CARLE LEE FELT.
5. Laboratory Aids in the Diagnosis of Typhoid Fever. E. E. SMITH.

6. The Influence of Sodium Chlorid Upon Gastric Secretion. L. B. STOOKEY.

1.—**Bacillus from a Case of Fatal Diarrhea.**—This organism described by Hiss agglutinates in high dilutions with the serum from dysentery patients and animals immunized with Shiga bacilli. Formerly this bacillus "Y" could not have been differentiated by valid culture tests from the bacillus of Shiga, and the mannite test being unknown might easily have been confounded with Shiga's organism, unless its agglutinating reactions had been carefully studied in such a serum as that from typhoid immune animals, or from the normal beef, in neither of which the true Shiga bacillus, according to the tests, agglutinates in appreciable dilutions. The bacillus described is closely related to *B. typhosus* in agglutinating and cultural characters, but can be separated by absence of motility and its reactions in the maltose and dextrin media employed. It differs from all hitherto described dysentery-like bacilli in its agglutination in high dilutions of dysentery serum. Its etiologic significance has not been yet determined. Its description seemed important to prevent its being confounded with Shiga's bacillus and its subsequent use for serum diagnosis. [H.M.]

2.—**Postdiphtheric Ocular Paralysis.**—Schwenk notes that the ciliary muscles are more frequently involved than any other portion of the muscular system except the velum palati. Diphtheric paralysis is generally bilateral, and the total hypermetropia after this exceeds all that can be rendered manifest by any cycloplegic after the patient has recovered from the paralysis. The paralysis manifests itself in two to six weeks after the attack of diphtheria, and generally passes off in about the same time. When the external muscles are affected the duration is generally short, except when the internal recti are involved. The external rectus is peculiarly liable to be affected. The seat of the lesion is still under discussion. It is impossible to account for the active pupil, the frequency of paresis rather than paralysis, and the bilateral character of the lesions on any other theory than the peripheral one. [H.M.]

3.—**Postdiphtheric Paralysis Affecting the General Nervous System.**—Peter believes the frequency of paralysis is in direct proportion to the severity of the general infection, although a severe palsy may follow mild intoxication. Diphtheria of the nares especially predisposes to both local and general paralysis. The generally accepted view is that the entire neuron, either motor or sensory, may be the seat of pathologic changes, the peripheral neuritis usually predominating, and often existing without demonstrable change in the cord. All degrees of severity are met with, from a mild, general paresis with slight emaciation to complete palsy of all the body muscles associated with cardiac and respiratory paralysis. The prognosis is good, except when the heart and respiratory muscles are involved. That extensive use of serum has lowered the mortality without diminishing the proportion of cases followed by paralysis, is explained by the hypothesis that many of the present paralytic patients are those that would have died without the serum, the palsy being due to the severity of the infection. In animal experimentation early injection of the serum is absolute protection against paralysis. Second to serum as a prophylactic Peter places absolute rest, not only during the acute stage of diphtheria, but for some days after the external evidences of the disease have disappeared. It is also the best curative agent, aided by massage, galvanism, iron and strychnin. [H.M.]

4.—**Postdiphtheric Paralysis Affecting the Ear and Throat.**—The most frequent site of paralysis is the throat. The muscles of mastication are rarely implicated. Felt has been able to find but two recorded cases of deafness. The location of the membrane has little to do with determining the subsequent distribution of nerve or muscle degeneration. Antitoxin prevents, never causes paralysis. If the injection is delayed the toxin attacks the cells of the organism and only that part is neutralized which is free in the system. Streptococcal infection, so frequently found with diphtheria, may cause paralysis, which would not be prevented by even the early injection of diphtheria antitoxin. The author recommends rest combined with the usual remedies. [H.M.]

5.—Laboratory Aids in the Diagnosis of Typhoid.—While the New York Health Department finds the diazo reaction present in over 90% of cases, Smith has found it distinctly less frequent. Various conclusions as to the value of Ehrlich's test are explained somewhat by the different standards as to what constitutes a positive reaction. Isolation of the infecting organism is of clinical value only when it can be expeditiously accomplished. By the use of special media the typhoid organism in many cases can be identified in 48 to 72 hours. It is difficult to get specimens in private practice except from the urine and feces, but this should be done more frequently than it is at present. A positive Widal test must be given great weight in diagnosis. Absence of reaction with typhoidal symptoms may point to paratyphoid infection, and the clinical pathologist has two additional agglutination tests to distinguish the paratyphoid species. [H.M.]

6.—Influence of Sodium Chlorid on Gastric Secretion.—As a result of autoexperimentation Stookey concludes that excessive quantities of NaCl apparently exert an inhibitory influence on HCl secretion, and thereby may impede gastric digestion. The ingested NaCl is apparently not directly converted into HCl in the stomach to the extent—if at all—which one might theoretically expect, assuming the theories of Koeppel and Brasch to be tenable. [H.M.]

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1. Tropical Diseases: Fourth Lecture in a Course on Tropical Diseases. CHARLES F. KIEFFER.
2. A Physician's Holiday in Vichy. JAMES TYSON.
3. Remarks on the Treatment of Pneumonia. FREDERICK P. HENRY.
4. The Röntgen Treatment of Malignant Disease. CHARLES LESTER LEONARD.
5. Acute Urethritis. D. A. SINCLAIR.
6. A Contribution to the Therapeutics of Children. N. G. PRICE.

1.—Tropical Diseases.—Kieffer discusses epidemic gangrenous rectitis, chronic diarrhea, hill diarrhea, and sprue, psilosis or atrophic enteritis. The first is treated by antiseptics of the rectum with creolin or hydrogen peroxid, adding opium to the local treatment for the relief of pain. If prolapse of the rectum occurs it should be covered with an antiseptic powder, or with freshly ignited charcoal. This disease is very fatal, but patients may recover after the comatose stage and even after the prolapse and sloughing of the rectum. Chronic rectitis is very stubborn and resists every plan of local treatment. The only procedure of service is a wide divulsion of the sphincter and the insertion of a tube, wrapped with iodoform gauze, sufficiently large to include all the inflamed rectum. The tube is retained three days. The treatment of hill diarrhea is directed to the restitution of intestinal digestion and the maintenance of a relative degree of rest to the alimentary tract by liquid or milk diet. Small doses of calomel are of value. Clinically, sprue presents three cardinal symptoms: sore mouth, flatulency, and diarrhea. The treatment of the latter disease consists in putting the patient upon an absolute milk diet, gradually increasing it until a gallon a day is being taken and assimilated. [F.C.H.]

2.—The Vichy Waters.—Tyson describes a trip to Vichy. There are many minor conditions which are well treated at Carlsbad and at Vichy, cases in which a change of scene, diversion and a restful life are needed. Pure gastric derangements, such as deranged secretion and fermentation processes, renal lithiasis of the uric and oxalic kinds, should be sent to Vichy; while cases requiring depletion of the upper alimentary canal, hepatic torpor, biliary lithiasis and gout should be treated at Carlsbad. [F.C.H.]

3.—The Treatment of Pneumonia.—Henry confines his remarks to primary pneumonia dependent upon the diplococcus of Fränkel. The general state of the system at the time of the attack is of great prognostic significance. The tendency of acute lobar pneumonia, in uncomplicated cases, in children and in young, healthy, and temperate adults, is undoubtedly toward recovery. Pregnancy is a serious complication, the gravity of which depends upon the degree to which it is advanced. The best prophylaxis for pneumonia consists in protecting the body against cold and dampness with woolen underclothing, and the avoidance of prolonged exposure

during the inclement seasons of the year. In accordance with the fact that pneumonia is an infectious disease, the sputum should be carefully disinfected. Into the spit-cup is poured a solution containing 3% each of caustic potash and borax, which is colored red by a trace of phenolphthalein. The sputum is completely dissolved in this alkaline solution. Enough of a solution of hydrochloric acid and mercuric chlorid is added to decolorize the red alkaline solution, and when this has taken place the cup is emptied. Pain, when it interferes with pulmonary function, is injurious and demands relief. This may be obtained in the majority of cases by external applications or leeches. Occasionally these will fail, and a small dose of morphin should be given hypodermically. If the temperature remains persistently at a high level, and is associated with other marked signs of nervous disturbance, measures must be taken to reduce it. For this purpose hypodermic injections of quinin are of the greatest value. For the cough and to promote expectoration kermes mineral, 1/32 grain every two hours, is strongly advocated. Strychnia may be used to decided advantage. No drug relieves venous congestion more effectively than nitroglycerin. In the writer's opinion the most valuable of the recent contributions to the therapeutics of pneumonia is the subcutaneous use of quinin. Henry prefers the hydrochlorosulfate of quinin for hypodermic purposes, because it is the most soluble of the quinin salts. [F.C.H.]

4.—The Röntgen Treatment of Malignant Disease.—Leonard believes that even if recurrence does take place, the results of the treatment of malignant disease by the Röntgen ray demonstrate the efficiency of this method and that renewed treatment will free the patient from the disease. The best method of treatment seems to be the combination of early radical surgical operations and the Röntgen treatment. The best results, in the average case, are achieved through the replacing, as the result of a retrograde metamorphosis of the malignant tissue, by fibrous or adipose tissue. More rapid results, but possibly more dangerous, can be produced by the sloughing and necrosis of the pathologic tissue. [F.C.H.]

5.—Acute Urethritis.—Sinclair emphasizes the following: That the malaise, and to a certain degree, the pain and burning in acute urethritis are due to the gonotoxin, a subject hardly considered in former years, but of late receiving much attention from competent observers; that protargol as a hand injection, while powerful and, compared to silver nitrate, a very unirritating preparation, is useful only as an adjuvant in the treatment of urethritis and does not prevent the infection of the posterior urethra. The patient after all must seek the constant care of the surgeon and receive irrigation treatment. This applies to all other hand injections. [F.C.H.]

6.—A Contribution to the Therapeutics of Children.—Price concludes that heroin is a nonirritating remedy, and its dose to a child 1 year old should be $\frac{2}{10}$ gr.; it possesses antispasmodic properties more potent than the bromids and the belladonna groups; it is a sedative to all mucous membranes, especially the mucous membrane of the respiratory tract; it diminishes peristaltic hyperactivity and hypersecretion of the intestine; this drug is completely oxidized in the symptom and produces no cumulative symptoms; heroin hydrochlorid is preferable to the alkaloid, because it is readily soluble in all vehicles; heroin hydrochlorid is compatible with the expectorants and with the other antispasmodic analgesic and sedative remedies. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

EDITORIAL COMMENT

Tuberculosis in Cleveland.—An energetic committee, with Professor William T. Howard, Jr., at its head, has undertaken the study of tuberculosis in Cleveland. The subject has been distributed among several subcommittees, and some of these have just issued their reports.¹ Drs. John C. Darby and Henry P. Parker have examined 658 autopsy records for

¹ Cleveland Medical Journal, February, 1903.

the frequency, site, and course of tuberculosis, and have found definite tuberculosis in 296%. The adding of 5.75% of cases with apical adhesions or puckering, gives a total of 35.3%; *i. e.*, more than one-third of all autopsies showed tuberculous change. This they consider (and we are sure that it is) a very conservative estimate. Active tuberculous processes were found in practically half of all cases showing definite tuberculosis. The relative frequency of tuberculosis in a few of the principal organs was in the following order: lungs, bronchial glands, spleen, intestines, kidneys, liver, and nervous system. The primary focus seems to have been almost invariably in the lungs, and occasionally in the bronchial glands. Dr. Cullen F. Welty took up the subject of the nativity of those that had died of tuberculosis during the period from 1895 to 1901, and compared the figures with those given by Köhler in his report of the tuberculosis mortality in the several countries of Europe. It would seem that the mortality for Germany and England is 1.6 times that for persons of German and English birth in Cleveland, while in the case of Ireland the mortality is almost the same. The Hungarian seems to have profited greatly by his change of residence, Hungary giving 2.5 times the mortality shown by persons of Hungarian birth in Cleveland. The mortality from tuberculosis in Cleveland, according to Dr. George Wilton Moorehouse, constitutes 8.7% of the total deaths; 55.6% of all deaths were in males; 44.4% in females. Some attention was paid to the influence of the conjugal condition upon the deathrate from tuberculosis, but no definite results were obtained, and it could not be inferred that marriage increases the liability to death from tuberculosis. Regarding the distribution of tuberculosis in Cleveland, Drs. William O. Osborn and Frederick C. Herrick found that certain districts of the city show a mortality from that disease much above that of other districts. These districts are (1) old portions of the city; (2) the part within one and one-half miles from the Square, excepting a single ward (the Twenty-fourth); (3) the parts in or near manufacturing or railroad districts; and (4) those occupied by the laboring classes. House infections were not discovered in any considerable number. In the same symposium Dr. Martin Friedrich discusses municipal prophylaxis. He advocates reporting tuberculosis cases to the Health Office, at present for the sake of the records alone. The Health Department should prepare printed instructions for tuberculous persons, which should be handed to the physicians for distribution to their patients. The physicians should see that the necessary precautions are taken, and should call in the Health Department when it is thought necessary. Dr. Friedrich also advocates a municipal hospital in Cleveland for incurable consumptives who are too poor to support themselves and need the aid of the city.

REVIEW OF LITERATURE

Nutrition of the Newborn.—To control Schlesinger's statement that undiluted cow's milk is the most rational artificial diet for nurslings, Rissmann and Pritzsche¹ have tried this method of feeding for 19 newborn children, using exactly the same precautions which Schlesinger advises. But few of these children gained in weight at all and only one seemed to be in a thriving condition; they conclude that it would be unwise to start with undiluted milk immediately at birth. They do not agree with investigators who advise considerable dilution, but instead propose the use of a dilution at birth of one-half, gradually diminishing this so that the child is getting full milk by the time it reaches the age of 3½ months. To support this advice a number of chemie and physiologic calculations and observations are given. [E.L.]

Infantile Diabetes Mellitus.—Lomax² writes a very readable article on infantile diabetes mellitus and reports two

cases, one in a male aged 3, terminating by death during coma, the other in a female of 2 years and 9 months, terminating in recovery. In the latter, fasting for 24 hours followed by absolute milk diet for two weeks produced immediate improvement. Lomax states that the most rational dietetic treatment of adult diabetics is to allow them as much carbohydrates as they can assimilate. In children, in whom the disease is more acute, it is of paramount importance to enforce the most rigid diet, a sudden transition to this giving good results while old people often rapidly fail when carbohydrates are suddenly eliminated from their diet. Arsenic and iron give better results in infantile cases than do drugs of the opium group. [A.G.E.]

Inoculation Metastases in Carcinoma.—Olshausen¹ reports the case of a woman, who 21 years ago had both ovaries removed for papillary cysts. He is of the opinion that all such tumors are carcinomas. She remained well until six months ago, when a mass began to show itself in the abdominal wall. At operation this was found to be a malignant tumor, which extended to and along one side of the previous scar, but not across it. He believes it a metastatic mass inoculated during the first operation. He believes benign ovarian cysts are also capable of producing such metastases in the connective tissue. [E.L.]

The So-called Hardening of Children.—Hecker² opposes the "hardening" of infants and children as it is usually conducted. To use cold water in the bathing of infants, to douche them after a warm bath with cold water, to make them sleep in cold rooms, or take them out in all kinds of weather, he considers deleterious to their general health. It does not diminish their tendency to cold, but rather increases it; it is also conducive to inducing other diseases of the respiratory tract (bronchitis, rhinitis, adenoids, etc.). He reports a number of cases where grave anuria, pneumonia, general nervousness, intestinal catarrhs, and various psychic disturbances have been traced to such a manner of hardening. He approves of a system of hardening, but it should be arranged for every individual case by the physician in attendance and no kind of hardening should ever be attempted with nurslings; they must always be kept warm. All hardening should be done gradually and almost imperceptibly in the manner of getting accustomed to a strong electric current. The idea of the hardening process should not be the lessening of parents' work and worry but rather the strengthening of the child's forces, so as to permit it to overcome inclement influences of any kind. He describes a number of methods capable of gradually producing this seasoned condition.

Congenital and Infantile Myxedema.—Pathologically sporadic cretinism, or infantile myxedema, may be separated, according to Pineles,³ into two or more distinct diseases. The first of these, congenital myxedema, is dependent upon congenital absence of the thyroid gland. He bases this classification upon 20 autopsies made in cases of so-called sporadic cretinism, and states that he is of opinion that the greater number of cases of sporadic cretinism are really congenital myxedema. Another division is infantile myxedema; this condition arises as the result of a diseased state of the thyroid gland, the affection beginning some time after birth, usually about the sixth year. A very small number of cases of sporadic cretinism does not fit in with either of these, and they should be the only ones to retain the name "sporadic cretinism." Clinically, congenital myxedema, infantile myxedema, and endemic cretinism are easily differentiated. [E.L.]

Pleural Effusions in Heart Disease.—Esser⁴ reviews the opinions of various authors concerning the cause of increased right pleural effusions over left in chronic heart disease. He reports three cases of his own, in each of which the autopsy showed very much enlarged, indurated, pigmented, and calcareous lymph glands at the right hilus, while those of the left were but little changed. The right mediastinal glands were affected. This proves the pleural effusion to be due to mechanical obstruction and not to inflammation; but ordinarily such an obstruction is of little importance, on account of the venous

¹ Deutsche medicinische Wochenschrift, October 16, 1902.

² Münchener medicinische Wochenschrift, November 18, 1902.

³ Wiener klinische Wochenschrift, October 23, 1902.

⁴ Münchener medicinische Wochenschrift, November 4, 1902.

¹ Archiv für Kinderheilkunde, 1902, xxxiv, 249.

² Albany Medical Annals, February, 1903.

anastomosis; is more frequent in myocardial disease than in valvular, because of the greater weakness of the heart muscle in the former. From the right pleural cavity the lymph is collected by the right lymph duct; this terminates in the right subclavian vein. Ordinarily, if there is an obstruction along the lymph paths, the veins will directly absorb the lymph, but when associated with cardiac weakness this is impossible, because of the increased pressure in the veins. The combination also explains the persistence of such effusions in spite of all treatment. The longer such an effusion exists the higher is its specific gravity. [E.L.]

The Best Means to Control Tuberculosis.—Le Cavalier¹ concludes that the majority of the tuberculous die because we are not given the means with which to treat them and holds that provincial governments are bound by humanitarian laws to provide for each city of more than 60,000 people a sanatorium for the indigent tuberculous. With suburban sanatoriums should be combined urban antituberculous dispensaries having a threefold object: (1) to aid there as many people as possible to prevent overcrowding of the sanatoriums; (2) to give gratuitous advice, hygienic and medical, to persons suspected of tuberculosis; (3) to visit the homes of the tuberculous, disinfect and prevent spread of the contagion. High tribute is paid the women of France and Canada for their part in providing funds for this cause and for their work, moral and humanitarian, in the homes. [A.G.E.]

The Value of Leukocytosis in the Diagnosis and Prognosis of Diseases.—Marcel Labbe² discusses the relation of leukocytosis to the infectious diseases, the intoxications, diseases of the skin, parasitic affections, cancer and leukemia. He believes that (1) hypoleukocytosis coincident with a grave general condition is a serious indication in which the prognosis is usually fatal. It indicates that the organism can not react nor defend itself; (2) a hyperleukocytosis of moderate degree indicates a disease of moderate gravity; (3) but hyperleukocytosis and excessive polynucleosis are indications of grave importance in which, however, the diagnosis is not necessarily fatal. They show a profound infection and also an extraordinary degree of resistance. It must not be forgotten that each individual has a characteristic leukocytosis, so that leukocytosis has no absolute diagnostic or prognostic value, and to be properly interpreted it is necessary to take into consideration all the clinical signs in each particular case. [J.H.W.R.]

The Course and Etiology of a Hospital Epidemic of Diphtheria.—Sixteen light cases of diphtheria were observed in different parts of one of the hospitals at Frankfort during a period of 15 weeks. To find the source of infection Cuno³ examined the throats of every one who came in contact with the patient. From the throat of two of the nurses diphtheria bacilli were isolated; one of these presented the picture of chronic pharyngitis; the other had a subacute laryngitis, and cultures from her had been found negative at several examinations. The former's routine of service corresponded to the onset of the individual cases, all of them taking place while she was on duty in the respective rooms. She was isolated and no more cases occurred. Cuno is of the opinion that the one Sister carried the infection to the children, while the other was herself infected by the children. [E.L.]

Effects of Acid Fermentation Upon the Curd of Milk.—W. G. Murphy⁴ believes a precipitation of the curd of milk by a fixed quantity of acid is not a fair criterion to the precipitation of the curd during digestion. When acid is added slowly precipitation is not as rapid and the curd not as heavy and solid as when it is added quickly. Certain experiments described indicate that the purer and fresher the milk the more loosely organized and easier of digestion the curd. The acid coming in contact with an alkaline milk has to transform this to an acid medium before the precipitate can be thrown down and the resulting curd is more gradually formed. In inflammatory conditions in which there is hyperacidity, the curd is large and tough. Babies can digest a stronger milk in winter, when there are fewer bacteria and less acidity, than in summer;

babies in the country where milk is obtained fresh twice daily, are less liable to digestive disturbances than city children fed on milk 24 hours old. A breast-fed child gets its nourishment more gradually than bottle-fed babies and slower precipitation occurs. [H.M.]

Stenocardial Pain in the Epigastrium.—Kaufmann and Pauli¹ report eight cases, in all of which there was stenocardial pain; the pain was violent and cramp-like, lasted anywhere from a few seconds to five hours, and usually followed bodily exertion, horizontal position, or a hasty meal, associated with abdominal distention. The quality of the food seemed in no way connected with the attacks. In some cases the pain preceded a typical attack of angina pectoris, in others there was no connection at all, but there was always anguish and a sense of oppression. The pain was situated in the epigastrium, or around the umbilicus. The patients were all middle aged men with some degree of arteriosclerosis, and often other pathologic conditions of the circulatory system. There is, during the attacks, marked tenderness over the abdominal aorta. It exists to some extent also between the attacks. [E.L.]

Mercurial Injections in the Treatment of Syphills.—Renault² gives his experience with this method when a hospital interne in 1868 and also details later cases. Results have been contradictory, though asepsis now avoids the occurrence of abscesses which formerly followed injections. The question is still open, both as to the method itself and the best solution to use when injection is employed. Renault is not able to satisfy himself regarding it. The question is an important one and can only be settled by comparative study of all the methods employed. [A.G.E.]

A New Sign of Pleuritic Effusion in Children.—S. W. Kelley³ has observed that with the advent of effusion the child who has previously been lying on the affected side in order to relieve the pain due to adhesions, now instinctively turns and prefers to lie on the back or be propped up high, and avoids bending toward that side or pressing upon it. After emptying the pleura by aspiration, the patient will again turn to the affected side until the fluid reaccumulates, when he will roll over on the back. It is only when a large effusion has existed so long as to create tolerance that the patient prefers to lie on the side. When on the back there is the least pressure on lung, heart, and vessels, allowing freer breathing and circulation. The child with pneumonic consolidation may lie on the back, but does not make the marked change from the lateral to the dorsal position, and it does not refuse the lateral position. [H.M.]

The Treatment of Barlow's Disease.—Bolle⁴ reports a typical case of Barlow's disease in a child of 2½ years. It had been suffering for 1½ years with diarrhea, which persisted in spite of treatment. Different varieties of milk and food preparations had been tried without avail. The child could not walk, was fretful, sleepless, and had swollen feet and legs. There was bleeding from the gums. He gave the child uncooked pasteurized milk, warm oatmeal, carrot juice and liquid yeast. Improvement was at once noticeable; later he added uncooked, diluted beef juice. Within 10 days the child was taking uncooked milk, and by the seventeenth day recovery was complete. Barlow's disease, in Bolle's opinion, is brought on by the prolonged use of sterilized milk, and its cure is dependent upon a return to uncooked milk. If cooked, seven minutes should be considered the limit of heating. [E.L.]

Care of the Tuberculous.—Bracken⁵ considers three classes of cases, the uninfected, the mildly infected or incipient cases, and the advanced or probably fatal cases. He condemns the rejection by State institutions of advanced cases. These demand the same care as acutely ill and surgical patients. Municipal sanatoriums are believed to have an advantage over a single State sanatorium. It is an imperative duty to protect the nontuberculous by removing all tuberculous individuals from the homes in which they are a menace. The work of the Free Hospital for Poor Consumptives in Philadelphia is highly

¹ *Montréal Médical*, January, 1903.

² *La Médecine Moderne*, January 14, 1903.

³ *Deutsche medizinische Wochenschrift*, October 23, 1902.

⁴ *Archives of Pediatrics*, October, 1902.

¹ *Wiener klinische Wochenschrift*, October 30, 1902.

² *Montréal Médical*, January, 1903.

³ *Archives of Pediatrics*, October, 1902.

⁴ *Zeltsehr. für Diät. und Physic. Therapie*, September, 1902.

⁵ *St. Paul Medical Journal*, February, 1903.

commended. Every tuberculous patient should be told that he has that disease. These patients are hopeful, and the physician must have their cooperation. Notification is advisable. [A.G.E.]

Morphin Poisoning in Early Childhood.—Katzenstein¹ reports the case of a child, 24 days old, which was given a powder containing 0.007 gram ($\frac{1}{3}$ grain) morphin. The symptoms of poisoning consisted chiefly of tonic contraction, with recurring eclamptic convulsions, and cramp asphyxia, marked lowering of temperature, cyanosis, irregular heart, pin-point pupils; no vomiting occurred. The child recovered, chiefly due to long continued artificial respiration, heat constantly applied locally, hot rectal enemas, and subdermal saline infusions. It was 26 hours before the child was considered safe. Albuminuria persisted for six weeks. [E.L.]

Antistreptococcic Serum in Scarlet Fever.—Baginsky² examined the throats of 701 children and found streptococci in 696. Streptococci were found at autopsy in the organs of 100 bodies of scarlet fever patients. Hence he concluded that scarlet fever is caused by the streptococcus. Four cases are reported in which the patients were treated with the new Aronson antistreptococcic serum. The patients improved and finally recovered. Baginsky employed 20 cc. injections two or three times during the course of the disease. He considers this new serum a success, and although its action is slow, yet its effect is of long duration. [W.E.R.]

Angiosclerosis of the Intestinal Arteries.—Ortner³ reports the case of a man of 55 who, two to three hours after every large meal, was seized with violent burning pain around the umbilicus and over the ileocecal region. The ascending and transverse colon became plainly visible, the sigmoid flexure contracted, and he complained of abdominal distention, dyspnea, oppression, belching, etc. There was no visible peristalsis. These symptoms always lasted several hours. Constipation was marked in spite of all treatment. He died of septic peritonitis several days after an exploratory laparotomy. The autopsy showed chronic endarteritis of the thoracic and abdominal aorta and all its branches. The case is evidently analogous to Charcot's intermittent claudication of the lower extremities. As the result of the sclerosis of the vessels, there is produced during the activity of the bowel an ischemia in the area supplied by the mesenteric vessels; this induces a secondary spasm and the symptom-complex above described. [E.L.]

Concerning the Detection of Lactic Acid in the Gastric Juice.—Bönniger⁴ has made a large number of tests in all sorts of patients to settle the dispute concerning the detection of lactic acid in gastric contents. He says if a distinct ferric chlorid reaction is obtained after the use of Ewald's test-breakfast, lactic acid is present; in cases of motor insufficiency the presence of lactic acid is proved if a strong reaction is obtained from the lavage material after a night's fast. Riegel's test-meal is of no value. Should motility be good, should there be suspicion of lactic acid fermentation, and a test-breakfast give a reaction not absolutely positive, a liter of gruel should be given and removed after 2 to 2½ hours. A positive result always indicates the presence of lactic acid. [E.L.]

A case of chronic empyema of the frontal, ethmoidal and both sphenoidal sinuses, with extensive necrosis, complicated with adenoma of the posterior, ethmoidal and sphenoidal regions (and a review of the literature) is reported by Bryan.⁵ [A.O.J.K.]

Leukemia and Miliary Tuberculosis.—Quinke⁶ reports two cases of leukemia and one of splenic pseudoleukemia, in each of which the development of miliary tuberculosis caused a remarkable diminution in the size of the spleen, and in the leukemic cases caused a pronounced reduction in the number of leukocytes. Since other infectious diseases influence leukemia in the same manner, it may be assumed that the infectious processes produce substances which act destructively on the leukocytes. According to Lazarus, it is probable that in the ordinary course of leukemia a somewhat rapid cell destruction

is going on, and that this destruction is offset by a corresponding cell production. But under the influence of miliary tuberculosis the new formation of leukocytes is reduced to a minimum. This influence has suggested to Quinke the idea that the administration of the tuberculosis toxins, as contained in tuberculin, may be of therapeutic value. He tried tuberculin injections in six cases of leukemia. In three incipient tuberculosis had been suspected, and a febrile reaction was produced. In the other three cases there occurred a marked reduction in the number of leukocytes and size of the spleen, and a decided improvement in the general symptoms. [B.K.]

Scarlatiniform Serum Eruptions During the Course of Diphtheria.—Leiner¹ reports a number of these cases, all of which turned out to be true scarlet fever. Of 297 diphtheria patients, 22 showed this exanthem. They all occurred within five days of the serum injection, were followed by typical desquamation; a number of them had glomerulonephritis as a sequel. The eruption was contagious to other children; the tenacity of the contagium was great, and was not destroyed in every case by formalin disinfection. When transferred to the scarlet fever department such children never developed scarlet fever. All these points make the author certain that he did not have to do with scarlatiniform eruptions, the result of a serum injection, but with true scarlet fever. [E.L.]

Diphtheria With and Without Antitoxin; 159 Cases.—C. G. Kerley,² in calling attention to the immunity of the very young, records that in an epidemic covering three years in an institution where there were constantly from 75 to 100 infants from three weeks to six months of age, but one took the disease. In suspicious cases he uses antitoxin without waiting for a culture, giving 2,000 units to children under one year, and 3,000 to those over one year. If after 12 hours no improvement has taken place, he reinjects. If there has been a fall in temperature and the membrane has taken on a ragged, granular appearance, he waits 12 hours more. If then the membrane remains unchanged or shows fresh deposit, with increased temperature and prostration, the antitoxin is repeated, and so on until the membrane disappears. When in doubt, intubate; so when in doubt, inject. About 20% develop urticaria, which which is annoying for a few days. He has seen no other unpleasant symptoms. [H.M.]

Diagnosis of Pulmonary Cavities.—Cybulski³ says if the ear is held close to the widely-opened mouth of the patient, and he is told to take a deep breath, sonorous and metallic rales are heard which are identical with those heard while auscultating the cavity in the ordinary manner. This sign is of importance in case the cavernous rales are obscured by other noises originating in the surrounding tissues. [E.L.]

Prophylaxis of Tuberculosis.—Roberts⁴ considers first how the healthy individual may avoid contracting the disease, and second, how the tuberculous individual may avoid giving the disease to others. The control of the spitting habit receives a large share of attention. Chicago has an antisputting law, etc., but an impression is not yet made on the people. The American habit of spitting can nowhere be entirely stopped, and authorities should be made to place receptacles in all public places or conveyances. Dry sweeping of the city streets is criminal. Compulsory registration of cases will come later, but the time for enforcing it has not yet arrived. [A.G.E.]

The Relations of the Enlarged Thymus Gland to Sudden Death.—After reviewing the cases reported in literature concerning "sudden death as the result of hypertrophy of the thymus," and discussing the reasons given by different authors for and against the possibility of an enlarged thymus producing death, Penkert⁵ reports two cases in support of the theory. In both of them no other cause for sudden death was found except the enlarged thymus gland. He concludes that an enlarged thymus without anything more is capable of producing difficulties in respiration; it may even completely compress the trachea, and through this indirectly produce air hunger and death. [E.L.]

¹ Münchener medizinische Wochenschrift, November 4, 1902.

² Berliner klinische Wochenschrift, December 8, 1902.

³ Wiener klinische Wochenschrift, October 30, 1902.

⁴ Deutsche medizinische Wochenschrift, October 9, 1902.

⁵ American Journal of the Medical Sciences, cxxiv, 416, 1902.

⁶ Deutsche Archiv für klinische Medicine, Band 74, Hefte 5 and 6.

¹ Wiener klinische Wochenschrift, October 23, 1902.

² Archives of Pediatrics, October, 1902.

³ Münchener medizinische Wochenschrift, November 4, 1902.

⁴ St. Paul Medical Journal, February, 1903.

⁵ Deutsche medizinische Wochenschrift, November 6, 1902.

The Pancreas in Cirrhosis of the Liver.—Steinhaus¹ reviews the literature on the subject of the relation of diabetes to diseases of the liver and pancreas, and details the autopsy findings in 12 cases of cirrhosis of the liver. Eleven of these cases showed a chronic interstitial inflammation of the pancreas, similar in each case to the condition found in the liver of the same subject. In only one case were the islands of Langerhans affected. The diminished tolerance for sugar frequently observed in cirrhosis of the liver is therefore probably due to the implication of the pancreas and not to the liver condition. It is not necessary to classify separately the glycosurias accompanying cirrhosis of the liver, arteriosclerosis, pancreatic disease, etc. Rather is it to be inferred from all recent investigations that every case of glycosuria is probably due to some disturbance in the function of the pancreas, and that this organ alone controls the carbohydrate metabolism of the organism. [B.K.]

Congenital Diabetes Insipidus Associated with Epilepsy Arising After Insolation.—Lichtwitz² reports the case of a young man, who from birth had an insatiable thirst, so much so that he drank of the water he was bathed in. He had polyuria. As he grew older his deficient intellect was marked. He was always weak, but no convulsions occurred. At the age of 23, after an afternoon of hard work in the sun, symptoms of heatstroke appeared, and two weeks later he had his first epileptic seizure. They have been frequent since. The author believes the cause of the diabetes, deficient intellect, and microcephaly, to be a congenital brain anomaly, and that the epilepsy was induced by the sunstroke. [E.L.]

Arizona as a Resort for the Tuberculous.—Stroud³ writes from a personal experience of 20 years in Colorado, California, and Arizona, and considers Phoenix as having the fewest disadvantages and most advantages of any place in the United States. He speaks of three winter resorts, Yuma, Phoenix, and Tucson, these having altitudes of 90, 1,080 and 2,500 feet respectively, and two summer resorts, Prescott, 5,500 feet, and Flagstaff, 7,000 feet. Roughing it will never do for the tuberculous, and fresh air and sunshine, with unexceptionable food, must be secured without this element. Rest and exercise must be adapted to the individual case. Stroud protests against the action of physicians regarding these points, most patients sent to Arizona coming with instructions to ride, drive, play baseball, football, etc. Rest is harder to enforce than any other measure, and patients who indiscriminately follow the above advice of their home physicians bring on injurious and often fatal results. [A.G.E.]

The Results of Sanatorium Treatment of Tuberculosis.—C. J. Macalaster⁴ believes that if we are guided only by the registers of institutions we shall get wrong impressions concerning the real results of treatment, a considerable proportion of the "cures," "arrested cases," and "greatly benefited cases" subsequently breaking down again. The Germans have taken great pains to establish data concerning permanence of cures in connection with certain insurance institutions. Their statistics do not give great encouragement as to absolute permanence. From six months onward after dismissal from the sanatorium there is a rather rapid decline in the capability of the patients to work, and by the end of four years only 20% are wholly or in part capable, the remaining 80% being either dead or incapacitated. Lasting benefit can be obtained only by suitable surroundings after treatment, or by emigration to favorable climates. It is difficult to select cases suitable for sanatorium treatment. Some of the earliest ultimately break down and some in which there are cavitation become to all appearances quite well, and the latter should be given a chance. The sanatorium does much good in prolonging life and in educating the public in preventive medicine. [H.M.]

Palpation of the Pylorus.—Normally the pylorus is covered by the left lobe of the liver and cannot be felt. If the liver is displaced upward, or the stomach downward, it can be palpated. The transverse colon can be felt distinctly some dis-

tance below it. Obrastzow¹ was able to palpate it in but nine instances in 900 cases, but he thinks if all patients were regularly examined for this organ it could be felt oftener. He relates briefly the nine cases. [E.L.]

Sanatoriums and Hospitals for the Tuberculous.—Klebs² states that to accomplish the desired ends of sanatoriums, and to insure the adoption of their rules by patients after they return to their homes, the arrangements must be of the simplest type. Too often their complication is a hindrance. Covered walks connecting cottages are better than ordinary galleries. Day rooms, except those for meals, are but little needed, and to make them too attractive is a mistake. The kitchen should be so placed that patients will not be annoyed by its smell, this important point being often neglected in the building of sanatoriums. The statement is made that nearly all the German sanatoriums are founded for economic rather than humanitarian reasons, organs of legal insurance being the prime movers in the effort to return people to work. Tuberculous children in all countries are too much neglected. [A.G.E.]

Lobar Pneumonia with Consecutive Acute Pemphigus in a Child.—Moos³ reports a case of acute croupous pneumonia in a child of 2½ years. On the ninth day of the disease numerous vesicles containing a clear fluid appeared on the chest. They grew rapidly in size, appearing at the same time over other parts of the body. The child's condition became critical. Desquamation followed several days later, and about the same time the pneumonia terminated by lysis. The author considers it a case of mild infection, the acute pemphigus being engrafted upon the pneumonia. [E.L.]

Importance of the Sanatorium in the Crusade Against Tuberculosis.—Elliott² speaks from the experience gained as physician-in-charge of Muskoka Cottage Sanatorium. Attention is called to the difference in meaning of *Sanatorium* and *Sanitarium*, and their wrong synonymous use. The proper location and arrangement of sanatoriums are considered, followed by the means of treatment, including aërotherapy, diet, dress, disposal of sputa, constant supervision of patient, and medicinal. The results are shown by the fifth annual report of Muskoka. During the year 102 patients were treated, of whom 28 were discharged apparently cured, and 45 with disease arrested. Of 84 with bacilli in the sputum, 31 became free under treatment. The average length of stay was 169 days. Sanatorium patients learn hygiene and the rules of health, and are missionaries among their friends when they return. [A.G.E.]

The Blood in Ulcerous and Gummatous Forms of Syphilis.—Löwenbach⁴ and Oppenheim add to their previous investigations in the early stages of syphilis the results of their present investigations in the later stages. They detail the symptoms and blood-counts in 36 cases, and draw these conclusions: In tertiary syphilis the hemoglobin and iron content of the blood are considerably diminished. Neither factor is influenced by the usual therapy. The iron and hemoglobin determinations correspond fully with each other. The number of red and white blood-corpuses varies within normal limits. [B.K.]

The Intestinal Action of Atropin with Reference to Its Use in Obstruction.—Pal's⁵ experiments justify the following conclusions: Atropin injures the nerve endings of the pneumogastric and splanchnics, sometimes paralyzing them completely. The muscular coil of the intestines and the ganglia governing peristalsis are not injured. The intestinal tone is considerably diminished for a time, but as the intestines are made less susceptible to inhibitory influence, the conditions for intestinal motion are made more favorable. To produce these, doses of morphin and opiates produce similar results. Atropin is therefore useful in dynamic and paralytic obstruction in cases in which the obstruction is a symptom and not the disease. Atropin should be rigidly excluded when true stenoses are suspected, or when the nature of the condition is in doubt. It may, beside doing harm, obscure the clinical picture and prevent an operation at the proper time. [E.L.]

¹ Deutsche medicinische Wochenschrift, October 23, 1902.

² St. Paul Medical Journal, February, 1903.

³ Münchener medicinische Wochenschrift, November 11, 1902.

⁴ Deutsche Archiv für klin. Med., Bd. 75, Heft. 1 and 2.

⁵ Münchener medicinische Wochenschrift, November 25, 1902.

¹ Deutsche Archiv für klinische Medicine, Band 74, Hefte 5 and 6.

² Münchener medicinische Wochenschrift, November 11, 1902.

³ St. Paul Medical Journal, February, 1903.

⁴ Liverpool Medico-Chirurgical Journal, October, 1902.

A Case of Intestinal Obstruction Treated With Atropin.—Gebauer¹ reports a case of intestinal obstruction due most likely to adhesions which, as operation was refused, was treated with hypodermic injections of atropin. The dose varied from 1/65 to 1/10 grain daily, and was followed at first by relief of some of the symptoms, but neither bowel movement nor flatus resulted. All symptoms returned with greater violence, the patient dying on the seventh day. In mechanical obstructions atropin is valueless, and in all cases in which such an obstruction cannot with absoluteness be excluded, no time should be wasted trying atropin. [E.L.]

Tuberculosis of Lungs in Early Infancy.—Hohlfeld² reports two cases of pulmonary tuberculosis in infants 7 and 10 months old. The mother of the first child had died of tuberculosis a short time after its birth. The symptoms and signs in both pointed clearly to lung affection with its principal seat in the right upper lobe. Cavities were diagnosed in both of them during life, and sputum collected directly from the pharynx was found loaded with tubercle bacilli. The autopsy of the first case showed a large cavity in the right upper lobe, with miliary tubercles scattered through the rest of the lungs. In the second patient the cavity signs were traced to several bronchiectatic dilations, which were surrounded by tuberculous infiltration. Almost all the organs showed tuberculous nodules. [E.L.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

REVIEW OF LITERATURE

Geographic Distribution of Stone and Calculus Disorders.—Reginald Harrison³ asks the question, has the study of the geographic distribution of calculi added to our knowledge of their causes, and if so, to what extent? He says that no one disputes that calculus disorders prevail more largely in some sections of the country than in others. The prevalence of calculi in some portions of India is well known. They are likewise plentiful in the eastern counties of the British Isles, whereas urinary calculi in Ireland are remarkably rare. His idea is that when we recognize fully and understand accurately the formation of urinary calculi we will be better able to institute some means not purely empirical which will prevent their formation. This could probably be accomplished if Rainey's views on molecular coalescence relative to the causes and formation of stone are accepted. Stone outside the human body can be formed artificially if Rainey's directions are carefully followed. The element of coalescence must be present as well as the necessary salts. Presence of urinary salts cannot possibly lead to the formation of stone unless the element of coalescence, whatever it may be, is present. Geographic considerations would seem to indicate the presence in certain districts of conditions necessary to effect a concretion of the normal or abnormal supply of concretible material, though these conditions are poorly understood. Our object should be to introduce some means to combat these conditions which lead to the concretion and preserve the salt in soluble form until excretion takes place. The author refers to a former paper in which he analyzed 110 cases on which he had operated for stone by various methods with a mortality of only six. This seemed promising, but when he realized that in the 110 persons 23 were known to have had recurrences of stone to some degree the result seemed serious. The author then began the study of some means to prevent concretion of the urinary salts within the viscus, and his later statistics as to recurrence are much more promising. These means are not detailed to great length, but change of climate, hygiene, certain waters, certain drugs, are mentioned as the agents with which the tendency to recurrence are combated. [A.B.C.]

Operative Treatment of Pulmonary Tuberculosis.—Landerer² advises operation in stationary or slowly advancing cases in which cavities are present. If they are situated in the

lower lobes operation is almost imperative, as such cases rarely do well with medical treatment. Moderate fever is no contra-indication. Acute cases are not suitable for operation. Tuberculous individuals take the anesthetic (chloroform) well as a rule. The operation should be performed rapidly and hemorrhage avoided. Landerer makes vertical L-shaped, T-shaped, or folding-door-shaped incisions of considerable length, resects the ribs quickly, going beyond the boundaries of the cavity in his resection; drains the base of the incision and closes the skin wound, his idea being to remove the rigid chest-wall, thus permitting the cavity walls to collapse; he rarely opens the cavity. He has operated on seven patients, all of whom were in advanced stages of the disease and hopeless; 2 were temporarily cured, 3 improved, 1 undecided, and the other 3 were certainly not injured by the operation. His conclusions are: The avoidance of operations in pulmonary tuberculosis is unjustified; such patients stand thoracoplasty well. Only in very rare cases do large cavities remain stationary. Thoracoplasty produces considerable improvement, even temporary cures. Operative interference should be especially undertaken in cavities of lower lobes. [E.L.]

A Case of Congenital Lateral Ventral Hernia.—Steinhardt¹ reports the case of a child three weeks old, which since its birth presented on the right side of the abdomen a soft mass the size of its fist; it presented all the characteristics of a hernia. At autopsy two weeks later this diagnosis was confirmed. The hernia was produced through the deficiency of all the muscles in this region, the external and internal oblique, as well as the transversalis abdominis, being absent at this point. The abdominal wall at this point consisted of only the skin, subcutaneous tissue and peritoneum. No other malformation existed. [E.L.]

Bullet Wound of the Bladder and Both Hips.—Goodman,² lately civil surgeon in South Africa, reports the case of a private who was shot, the ball entering 2 cm. above the right trochanter and emerging immediately behind the left sacrosciotic notch. The exit wound was large, ragged, and suppurating from a urinary discharge eight days after its infliction, when the patient came under the author's observation. It was evident that the bladder had been punctured by the ball. The author instituted perineal drainage at once by Cock's external urethrotomy method, and a drainage tube was placed in the wound. The entrance wound had healed, the exit wound was scraped and a drainage tube inserted. Later, this wound refusing to heal, a counter opening was made behind the left great trochanter. Recovery was uneventful. The following points are noteworthy: In all bladder wounds in which urine is escaping it is not enough to empty the bladder by a catheter, but it is advisable to drain the bladder by a catheter through the perineum at once, and to keep this drainage up continuously until the bladder wound is healed. The perineal catheter completely drained the bladder, the wound in which healed within 14 days after perineal drainage was established. The perineal wound healed without trouble in about 10 days; indeed, a fistula very seldom results after a Cock's perineal urethrotomy. [A.B.C.]

The Hartley-Krause Flap in Hemorrhage from the Middle Meningeal Artery.—The value of this flap as a means of access to the middle meningeal artery is highly extolled by Plummer.³ He is not in accord with Krönlein's statement that this flap will not expose a hematoma posticum of the latter's classification. Such a hematoma has of course no definite limit but if it is of fairly large size its anterior edge will be exposed at the posterior superior border of the flap. If not exposed the opening can be easily enlarged. In 60% of Plummer's cases the artery ran in a bony canal and was ruptured in turning down the flap, but it is in full view and easily secured. Two cases of meningeal hemorrhage are reported, one resulting fatally from fracture of the base and hemorrhage into the ventricle. The rectal temperature in that case was 107° before death and 109.5° postmortem. [A.G.E.]

Treatment of Empyema.—Isreal⁴ removed two inches of

¹ Deutsche medizinische Wochenschrift, November 20, 1902.

² Münchener medizinische Wochenschrift, November 23, 1902.

³ British Medical Journal, January 17, 1903.

¹ Jahrbuch für Kinderheilkunde, Vol. lvi, p. 220, 1902.

² British Medical Journal, January 17, 1903.

³ Illinois Medical Journal, February, 1903.

⁴ Deutsche medizinische Wochenschrift, November 20, 1903.

the eighth rib, external to the costal angle, from an empyema patient and opened the abscess in a horizontal direction. After four weeks, during which the abscess did not get smaller, he resected the ninth rib for 1½ inches, and continued the incision downward in a vertical manner. Drainage now was perfect and the patient was discharged cured after 10 days. He has adopted this method of incision and opening in all cases since, extending the vertical limb to tenth rib in many cases. The advantages are the complete evacuation, the natural drainage, irrigation is made unnecessary, the cavity closes rapidly, hemorrhage is easily controlled, and cough is almost unknown. [E.L.]

Total Extirpation of the Prostate by Freyer's Method.—Elsworth¹ reports the case. The patient was aged 67. He had lived a catheter life for the last 12 months, but recently had required the assistance of a physician for his relief. The prostate was much enlarged, especially the right lobe—was smooth, firm and elastic. The patient was exceedingly frail but insisted upon an operation for his relief. Under anesthesia a coudee was passed and the bladder irrigated with hot boric solution. The bladder was then opened by the suprapubic route. The mucous membrane over the prostate was snipped through with scissors and the front finger of the left hand insinuated into the opening thus made. The finger was carried over the surface of the prostate, and the fibrous bands connecting it with the surrounding tissues were broken down. The only difficulty occurred in separating the apex of the prostate from its capsule. The whole prostate was enucleated, raised into the bladder and delivered with a volsellum. The hemorrhage was free for a short time, but rapidly ceased under the application of a hot boric solution. Suprapubic drainage was left in and the bladder was irrigated with hot boric solutions daily. Seven weeks after the operation the patient was comfortable and was able to retain the urine from two to three hours at a time. Later the length of time was much extended and the patient made a complete recovery. The tumor removed weighed 3½ ounces. The repair of the torn ureter did not seem to produce any untoward effect except increase of hemorrhage. [A.B.C.]

Diagnosis of Acute Glanders in Man.—Based upon a clinical observation and autopsy of a personal case, and a consideration of all cases thus far reported, Koch² discusses the diagnosis of acute glanders, which he considers a difficult diagnosis to make. Ordinarily the period of incubation is three to five days, during which the patient complains of the symptoms of malaise. His patient, a veterinary surgeon, had been complaining for three days, when he was taken with high fever, and a small pleural effusion appeared; he soon became very ill. A large mass developed over the lower left chest-wall, which required incision. Two days later the characteristic eruption appeared, and only then could the diagnosis of glanders be made. Hundreds of red spots, similar to flea-bites, came out all over the body, which quickly grew to pea-sized pustules with serohemorrhagic contents; they were surrounded by a red halo; they ruptured, producing ulcers. Pustules are an expression of general infection and are a bad sign. Boils, abscesses, lymphadenitis and lymphangitis are usually a very prominent sign. His nose became erysipelatous, and the nasal mucous membrane became diseased. The discharge, bloody mucus, contained the characteristic organisms. He died on the twelfth day. In spite of the gravity of his illness he never once considered his life in danger. The lungs and spleen presented characteristic lesions; the other organs showed cloudy swelling. In this case the disease was acquired through the respiratory tract, as shown by the large lesions in the apices of both lungs. Organisms were cultivated from the pus, the nasal secretions, and the urine. [E.L.]

Internal Urethrotomy.—Lockewood¹ finds fault with the various urethrotomes, and says that the ideal one should be small enough to pass a stricture of very narrow caliber, and that it should cut accurately from behind forward. To meet these requirements Teevan's instrument and that of Thompson are unsatisfactory. The author then calls attention to the

instrument devised by himself, which possesses all the advantages and none of the disadvantages of the two instruments above named. Illustrations are given and the instrument described in detail. [A.B.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Hysterectomy for puerperal sepsis as discussed by the Fourth International Congress of Obstetricians and Gynecologists in Rome, September, 1902.—Vineberg¹ quotes Fehling's dictum that the attempt to divide the various forms of puerperal infection bacteriologically cannot be considered thus far as successful. Fehling is not an advocate of hysterectomy for puerperal sepsis, though it might be justifiable in those cases in which the sepsis is of uterine origin, due to retained placenta which could not be removed by the ordinary methods. He does not consider the results obtained by ligating the thrombic pelvic veins encouraging. Leopold divided the cases of severe puerperal sepsis into six groups: 1. Cases in which the pyogenic germs have penetrated the uterus and set up a general peritonitis. Hysterectomy in these cases would be useless; for the infection is now in the peritoneum and there should be an attempt to treat the peritonitis surgically. 2. Cases in which the pyogenic germs attack particularly the venous system and lead to a septic thrombosis. In some of these removal of the uterus is sufficient, in others the affected veins should also be removed. 3. Cases in which the infection principally affects the endometrium and extends and becomes localized in one or other of the adnexa, in which case the proper procedure is the removal of the affected ovary. 4. Cases in which all the symptoms point to multiple abscesses of the uterine muscularis and pelvic peritonitis. In some of these drainage of the pus foci may be sufficient, but if the uterus is thickly studded with small abscesses its removal is necessary. 5. Cases in which during labor severe bruising is inflicted upon pelvic tumors, causing gangrene and subsequent peritonitis and often requiring hysterectomy. 6. Cases in which putrefaction of the uterus occurs in consequence of retained placenta which cannot be removed by the vagina and hysterectomy becomes necessary. Vineberg agrees with Leopold's conclusions. [w.k.]

The Neighboring Lymph Glands in Uterine Carcinoma.—In a Vienna hospital a histologic and pathologic study was made of the lymph glands removed in 141 cases of uterine carcinoma. Wertheim² states that in 35% of these cases the glands had been attacked by the cancer. In nearly all of these they were more or less enlarged; but the long, spindleformed, very thin glands which lie between and near the large vessels showed no signs of carcinoma. About 30% of the cases showed enlarged glands, although no evidences of carcinoma could be detected, the enlargement being due to hyperplasia and infiltration. The region most frequently affected was that between the external and internal iliac arteries and the inguinal region, toward the obturator foramen. In the other third of the cases there was not the polymorphic, alveolar formation of the others, but tubular, cylindrical, often cystic cells with mucous filled spaces. Wertheim describes in detail the formation of these glands; and in order to answer the question whether there was any causal connection between their formation and the presence of uterine cancer, he had two of his pupils examine the lymph glands taken from 80 corpses without any cancer, and in none of these was there a like condition found. Hence he concludes that where the peculiar cell structure described occurs in the lymph glands we have to do, not with anything caused by disturbance of development, but with metastases of uterine cancer. [w.k.]

Anuria in a Case of Ovarian Tumor and Pregnancy.—Anuria from the pressure of a nonmalignant tumor is exceedingly rare, and those recorded have been pelvic tumors which pressed upon the ureters. Bernard Pitts³ reports a case which

¹ British Medical Journal, January 17, 1903.

² Archiv für klinische Chirurgie, Vol. lxxv, p. 37, 1902.

¹ American Gynecology, January, 1903.

² Zentralblatt für Gynäkologie, January 24, 1903.

³ Lancet, January 31, 1903.

is exceptional in that the pressure appears to have been upon the kidneys and their vessels. The patient, a woman of 44, was in the sixth month of pregnancy, complicated by the presence of a large ovarian tumor. After admission to the hospital, the urine became very scant and albuminous in spite of the treatment until only one ounce in 24 hours was passed. Symptoms of uremia set in, the temperature began to rise, and life was seriously menaced. Hence immediate operation was deemed necessary. The opening of the abdomen showed a large multilocular tumor, partly solid, and the fluid so thick and tenacious that repeated tapplings failed to reduce its size. The tumor had no proper pedicle, and was so attached to the ureters that the latter had to be sacrificed, and both were removed as rapidly as possible. No careful examination of the ureters was possible, but it was clear that the pressure was in the upper part of the abdomen, and upon the kidneys themselves. After operation anuria ceased and the patient ultimately recovered. [w.k.]

Atypical Cases of Ectopic Gestation Illustrating the Difficulty of Diagnosis.—Grandin¹ asserts that the classic symptomatology of ectopic gestation is the exception, and he believes that scores of women have died and many still die from unrecognized ectopic gestation. He states three axioms which the wise physician should ever bear in mind: 1. Any woman whatever, married or single, during her period of sexual activity, may be subject to this malignant disease, and the man who suspects every woman of having the condition is less liable to err in diagnosis. 2. Hemorrhage from the genitals of a woman who has subjected herself to the possibility of conception, means that if she be pregnant it is not after the normal fashion. 3. We should endeavor to forget the symptomatology of ectopic gestation copied from one textbook to another, and reconstruct a symptomatology which eliminates amenorrhea and enlargement of the uterus as symptoms, but which lays stress on the fact that colicky pain is diagnostic of impending or actual rupture. Any woman who complains of deviation from the normal as regards menstruation may be carrying an ectopic gestation. These points he emphasizes by the recital of eight cases seen or operated upon by him in recent years. He advises in each and every suspicious case in which diagnosis is uncertain to make it certain by means of a posterior vaginal section. [w.k.]

Operation for Fibromyoma of the Uterus.—Hegar² traces the operations for fibroids through the different stages from the beginning to the modern abdominal and vaginal hysterectomy. At first only fibroid polyps were removed, usually by strangulation; later fibroids visible through the uterine os were enucleated, and after ovariectomy became popular they were removed through an abdominal incision. Morcellement, the technic of which was very much improved by Hegar, was the next operation. Intraperitoneal and extraperitoneal methods of treating the stump were tried, but none proved very successful. Necrosis of the stump, general infection or suppuration of long duration often resulted. Castration and enucleation through an abdominal incision were the next operations; the former was suggested by Hegar. Both are suitable operations still in specially selected cases. The best and most modern operations are hysterectomy, if possible through the vagina; if not, through the abdomen. In some cases the two may be combined. [E.L.]

Instrumental Dilation of the Cervix.—Zangemeister,³ after reviewing the history of several series of cases in which Bossi's or some other metallic dilator was used, is convinced that a serious objection to such instruments is the frequency of cervical and vaginal lacerations, and he warns against any dilator which is worked by a screw. When the cervix cannot be dilated with sufficient rapidity by means of intrauterine balloons or a colpeurynter, he thinks deep cervical incisions should be made, as they are less liable to septic infection than the bruised tissues of the lacerations due to the use of metallic dilators. If necessary a long sagittal incision through the anterior cervical wall is a more certain and less dangerous procedure than the use of any metallic dilator controlled by screws. [w.k.]

Early Diagnosis and Treatment in Fibromyomatous Tumors of the Uterus.—Bowers¹ insists that when a woman has had unusual hemorrhage for a few menstrual periods without apparent cause we should prepare to curet; she can be thoroughly examined while under an anesthetic and if a polypus exists it can be removed and the uterine cavity cureted and packed with gauze. The relations of any growths to the cervix or body may best be determined by examination through the vagina. Early in these cases he believes that animal extracts deserve a trial, especially the thyroid extracts. Hydrastin also has given him very good results, materially reducing the menstrual flow. It should be taken three times a day. We are justified in early operation before severe hemorrhage and other urgent symptoms exist, especially in a patient under 35, for the following reasons: It may save her a future cesarean section; it may save her from a more radical operation and greater mutilation; the operation can be done when the resistance of the patient is at the best; there will be no danger from degenerative changes; if excision is delayed until tumors become large there may be rupture of the uterus should pregnancy occur. [w.k.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPELMAN

REVIEW OF LITERATURE

Thiocol in the Treatment of Tuberculosis.—Thiocol or potassium sulfonoguaicolate is indicated in all forms of tuberculosis, and may be administered in the presence of hemoptysis.² It is odorless, nontoxic, very soluble in water, and may be given in large doses either by the mouth or hypodermically. By the mouth it may be given in doses of 0.5 gram (7 grains) every 3 hours, or in the following solution:

Thiocol	10 grams	(2½ drams)
Syrup of bitter orange-peel	100 cc.	(3½ ounces)
Boiled water	150 cc.	(5 ounces)

One tablespoonful every 4 hours.

In laryngeal tuberculosis, Fasano recommends the following insufflation:

Thiocol	0.15 gram	(2½ grains)
Cocain chlorid	104	grams (3½ ounces)
Boric acid	1	gram (15 grains)

Thiocol should be continued internally in the dose of 1 to 2 grams (15 to 30 grains) daily. Under the influence of this drug weight increases, cough and fever decrease, the arterial pressure is raised, the quantity of urine is increased, and the elimination of uric acid is diminished. [L.F.A.]

Treatment of Inoperable Cancer.—Morris³ concludes, after an exhaustive survey of the subject: 1. That the bacterial treatment of malignant disease is not of the slightest use in carcinoma; that not one-half of the cases of spindle-celled sarcoma disappear under treatment with Coley's fluid; that in cases of sarcoma, other than the spindle-celled, Coley's fluid is not of value; that the treatment by Coley's fluid has many dangers, and should never be employed except in absolutely inoperable cases. 2. That Beatson's treatment (oophorectomy) is limited to cases of mammary carcinoma, and the local and glandular recurrences after mammary carcinoma; and even in these only a small proportion are influenced by the treatment. 3. That rodent ulcer has in Finsen's light and in the Röntgen rays its most successful treatment, so far as we at present know. There are cases of rodent ulcer, however, which resist these means, and some are successfully treated by excision and caustics. 4. That sarcoma, epithelioma, and the other forms of carcinoma are best treated, whenever possible, by early excision. 5. That the boundary line between what are considered operable and inoperable cases needs revision from time to time; the tendency to extend the limits of operable cases needs in some instances to be restricted, and in others there may prove room for further extension. 6. That it is open to question whether some of the operations performed for relief or prolongation of life in inoperable cases of malignant disease

¹ American Gynecology, January, 1903.

² Münchener medicinische Wochenschrift, November 25, 1902.

³ Zentralblatt für Gynäkologie, January 24, 1903.

¹ American Gynecology, January, 1903.

² Bulletin Général de Thérapeutique, Vol. cxliv, No. 24, p. 968, 1902.

³ British Medical Journal, October 25, 1902.

should not be abandoned. 7. That investigations into both the cause and nature of cancer are of the first importance, as being more likely to lead ultimately to cure than any treatment at present known. 8. That, with few exceptions, the attempts to cure cancer by means other than early and free operations have been hitherto almost invariably futile. [A.B.C.]

Home Treatment for the Morphin Habit.—Moody¹ points out that contrary to the general teaching it is possible in a very large proportion of cases to cure the morphin habit without sending the patients to a sanatorium. It is essential that the patient be earnest in his desire for cure and that there shall be a nurse or friend sensible enough to carry out the physician's orders without attempting to exercise his own judgment as to their wisdom. It is also necessary that the physician understand completely the pathologic condition and have the unflinching confidence of the patient. On account of the deleterious effect of accumulated effete material, the result of the habit, the treatment should commence with a thorough cleansing of the system. Many of these patients have frequent bowel movements but are nevertheless always constipated, the discharge being the result of irritation of the mucous membrane from hardened feces. The first prescription should be a purgative such as the following:

Extract of colocynth compound	ʒ ss	(2.0 gm.)
Calomel	gr. xx	(1.3 gm.)
Strychnin hydrochlorate	gr. ʒ	(0.016 gm.)
Extract hyoscyamus	gr. x	(0.065 gm.)

Make 10 capsules.
One every 4 hours until directed to stop.

This should be followed the next morning by a Seidlitz powder. The patient should be told that this prescription will purge him freely and that he will feel relieved afterward; the fulfilment of this prophecy will tend to increase his confidence in the physician. The other part of the treatment is a combination of suggestion and the use of nerve sedatives. At the preliminary examination of the patient the physician should make use of all possible instruments of precision such as the stethoscope, microscope, etc., as much for the purpose of making an impression on the patient as for determining the physical condition. After the purgation the patient should be told that he will receive a substitute for morphin for a few days after which he will no longer have a desire for it. This substitute should be a combination of sodium bromid and dionin, so arranged that each single dose contains half the number of grains of dionin that has been the daily dose of morphin. If the patient has been using 12 grains a day, the following prescription may be used:

Sodium bromid	ʒ iv	(15.0 gm.)
Dionin	gr. lxxij	(4.6 gm.)
Distilled water, to make	ʒ vj	(185.0 gm.)

Tablespoonful as directed.

This is given every two hours until the patient becomes sleepy, after which it may be given every four hours. As each dose is taken from the bottle an equal quantity of pure water should be poured into the bottle, the patient seeing this done; he should be told that by the time the mixture is weak he will not need it. He should be thoroughly impressed with the idea that he is going to get well and that he will remain permanently cured. The belief of the patient that he is hopelessly dependent upon morphin is often one of the most difficult features to combat. If the patient is restless or complains of discomfort the most potent agency at our command is hyoscin hydrobromate, which produces a quiescence, somewhat like that of hypnotism, during which the patient's mind is freely open to suggestion. Spartein sulfate may be given simultaneously with the hyoscin if the heart is weak. The hyoscin should be given hypodermically in doses varying from 0.3 mg. to 1 mg. ($\frac{1}{30}$ to $\frac{1}{15}$ grain) according to the susceptibility of the patient. During its use the physician should constantly reiterate that the desire for morphin is disappearing. [H.C.W.]

Sodium Cacodylate in Chorea.—Lannois² employs sodium cacodylate hypodermically in the treatment of chorea in the dose of from 2 to 4 cg. ($\frac{1}{10}$ to $\frac{1}{5}$ grain) daily for 15 days. At the end of this time its administration is stopped 4 or 5 days,

then continued in the same dose. It may also be given in pills in double these doses for 3 days a week. Good results have followed this treatment. [L.F.A.] [Sodium cacodylate at times irritates the alimentary tract. Caution is therefore necessary. S.S.C.]

The Treatment of Typhoid Fever.—According to Hare,¹ of all diseases, typhoid fever is the one in which it is most important to avoid harmful interference. The motto in typhoid fever should be "Let the patient get well." Great attention should be paid to the kidneys, as it is through them that the toxins must be eliminated. For maintaining the function of the kidneys he advises the frequent use of water, if need be, aided by mild refrigerant diuretics, intestinal antiseptics are useless so far as the typhoid infection is concerned and are likely to add a burden to the kidneys; they may, however, prove of value by diminishing tympanites. Antipyretics are in no way beneficial, and if used in conjunction with the cold bath are capable of harm. Reduction of the temperature is the least important result of the cold bath; its dominant influences are the equalization of the capillary circulation, the redistribution of the stagnant blood, and the general stimulating effect upon the metabolism. The indiscriminate use of the cold plunge in all cases of typhoid fever is to be deprecated, equally good results can be obtained by the use of the cold rub. When there is a failure of reaction after the rub, it is owing to faulty technic. In some cases the temperature may be lowered more by the tepid (80° to 90°) than by the cold bath. This is explained by the initial contraction of the bloodvessels of the skin interfering with the peripheral circulation and the shivering following the cold bath which increases the production of heat. Turpentine is useful to combat tympanites, while alcohol is the most valuable remedy for overcoming heart failure; strychnin he believes is used too frequently, it is only a temporary stimulant and may add distinctly to the nervous irritation. As to diet, he believes the addition of easily digested starchy foods, digestion being aided by takadiastase or pancreatin, and one or two eggs to the milk diet is advantageous. In the treatment of hemorrhage the majority of substances advised are irrational. Calcium chlorid and gelatin are logical remedies, but in Hare's experience have not given good results. In this case he has found the best drug to be pill of Monsell's salt. [H.C.W.]

Aristochin.—Aristochin is a white, tasteless powder, freely soluble in dilute hydrochloric acid; it contains 96% quinin and is excreted as such by the kidneys in large quantities. On account of these virtues Stursberg² considers it an excellent substitute for quinin in children's diseases. He has used it in 18 cases of whoopingcough with partially satisfactory results. Its dose for children under 1 year is 0.05–0.1 gram ($\frac{1}{20}$ – $\frac{1}{10}$ grains); for older children 0.3 grams ($\frac{1}{2}$ grains) three times daily. [E.L.]

Treatment of Tuberculosis by Gualacol Cacodylate.—Gonzalve-Menusier³ has obtained excellent results with gualacol cacodylate in the treatment of tuberculosis. This drug acts not only as an antiseptic to the respiratory passages by the gualacol which it contains, but it is an excellent reconstituent, due to the cacodylic acid. The modification of the tissues produced by the drug renders them unfavorable to the growth of the bacillus of tuberculosis. [L.F.A.]

On the Use of Sulfur in Typhoid Fever.—Woroschilsky,⁴ led by the favorable results obtained in dysentery from the use of sulfur, has employed it in typhoid fever with good results. He gives it in doses of 1.25 grams every two hours (20 grains) so that the patient receives as high as 10 grams a day. The cases in which it was employed seem to run a milder course than might otherwise have been expected. He believes the beneficial action of the drug to be a direct one upon the mucous membrane of the intestines. It does not cause diarrhea; on the contrary, in cases presenting this symptom it seems to act beneficially. He believes that it is altered in the intestine into an alkaline sulfid, and that the portion of the sulfur undissolved acts as a protective antiphlogistic and antiseptic. [H.C.W.]

¹ Therapeutic Gazette, 1902, Vol. xxvi, p. 793.

² Münchener medicinische Wochenschrift, November 11, 1902.

³ Bulletin Général de Thérapeutique, Vol. cxliv, No. 24, p. 939, 1902.

⁴ Therapeutische Monatshefte, Vol. xvi, p. 563, 1902.

¹ Merck's Archives, December, 1902, Vol. iv, p. 470.

² Bulletin Général de Thérapeutique, Vol. cxliv, No. 22, 1902, p. 879.

Ozone in the Treatment of Whoopingcough.—Delherm¹ states that although ozone is not a specific against whoopingcough, it has a marked antispasmodic power which justifies its employment in this affection. It is without action in the catarrhal stage at the beginning and at the end of the disease; it should be used only during the period of coughing in the average dose of 3 or 4 inhalations (of mildly ozonized air or oxygen) for 10 minutes in 24 hours. By this treatment the attacks of coughing become less frequent, and at the end of 10 or 12 days the patient is often entirely relieved or has not more than 2 or 3 attacks during 24 hours. [L.F.A.]

On the Open Air Cure for Pulmonary Tuberculosis.—Volland² believes that the open air cure for pulmonary tuberculosis is being greatly overdone in certain institutions, especially in his own town, Davos. He is persuaded that the results obtained in these sanatoriums are less favorable than they were a few years ago, and that the open air cure is becoming an immoderate fad. He quotes with approval the statistics of Hammer, who has found that in Heidelberg better results are obtained in the ordinary clinic than in the Heidelberg Sanitarium, and also the statement of Holdheim that even in Berlin, as good results follow intelligent individualizing treatment as are reached in Davos. Two or three decades ago the majority of physicians kept tuberculous patients indoors, in order to prevent their taking cold. In many of the institutions patients are today made to live constantly, no matter what the weather is, in what is practically the open air, under conditions which would make even a healthy person sick. He has seen patients come to Davos with comparatively little cough and no fever, who when placed under the routine open air treatment developed severe bronchitis, with great increase in cough and expectoration and the production of considerable fever. The reason that good results are obtained in Davos is owing to the excellent climatic advantages of this resort, and is rather in spite of, than on account of, the treatment. If the care and the same individualizing were employed in Davos as in the Berlin clinics, the conjunction of the climate and the treatment would bring about excellent results. The exposing of patients with lowered vitality to climatic conditions which even the healthy are unable to withstand, is certainly an irrational procedure. While not denying the advantage of the open air treatment when employed with moderation, Volland believes there is great danger if it is overdone. The development of bronchitis in these patients must of necessity be harmful. [H.C.W.] [Having preached "fresh air" to deaf ears for many years, I now gladly add my protest to Volland's against the irrational extreme to which this most useful method seems in danger of being pushed with the reactionary pendulum-swing. Sheep and bell-wethers alike are going over the fence too fast. Individualization of the most careful kind is necessary in the treatment of pulmonary tuberculosis. Air, too, must be mixed with brains. s.s.c.]

On the Value of Cinnamic Acid in the Treatment of Tuberculosis.—Robinson,³ after a thorough review of the literature on the use of sodium cinnamate in tuberculosis, comes to the following conclusions: 1. To regard sodium cinnamate as a specific in tuberculosis is absurd. 2. The drug is probably useful as an adjuvant, especially in the first stages. 3. The commencing dose must be small and gradually increased. 4. It is contraindicated in cases of hemorrhage or when the temperature is above 101°. 5. Rise of temperature following its use is evidence that the dose is too large. 6. Its action is that of a symptomatic rather than a curative agent. It is probably less useful than creasote. The dose of sodium cinnamate is 0.13 or 0.19 gram (2 or 3 grains) by the mouth, or 16 mg. (½ grain) hypodermically. [H.C.W.]

Ovarian Organotherapy.—Bestion⁴ has obtained very good results from the administration of ovarian extract in amenorrhœa due to chlorosis and anemia. In 15 cases in which this was used he had only one failure. In many cases of simple anemia menstruation returned after the administration of from 40 to 50 grams (1 to 1½ ounces) of ovarian extract daily for one or

two months. Bestion has also successfully employed ovarian extract in the systemic disturbances at the time of the menopause. He states that organotherapy should be tried in all functional disturbances of the ovaries at least, before any surgical intervention is considered. [L.F.A.]

The Efficacy of Enquinin.—Audry¹ reports the use of this drug in a case of typical intermittent fever in a boy of 13, the result being eminently satisfactory. The daily amount given was 1.5 gm. (22 grains) for four days, 1 gm. (15 grains) for three days, 0.5 gm. (7 grains) the eighth day, and as a precaution 0.5 gm. (7 grains) the tenth and fourteenth days. Audry believes the drug is to be commended, even though its cost is greater than the other preparations of quinin. [A.G.E.]

The Medicinal Treatment of Gallstones.—Richardson² says that gallstones are formed through the precipitation of cholesterin or coloring matters upon a nucleus of bacteria. Since the substances are held in solution by the glycocholate and taurocholate of the bile, the obvious therapeutics is the administration of sodium glycocholate. This treatment prevents the enlargement of the stones by further precipitation of the cholesterin, and is even capable of dissolving stones already formed. He gives it in doses of 0.32 gram (5 grains) three times a day. We have already called attention in a recent editorial to the fallacy of this treatment. [H.C.W.]

Treatment of Infectious Dermatitis and Lymphangitis with Carbolized Poultrices.—Jean Camescasse³ reports a case of dermatitis with lymphangitis following a severe bruise and excoriation of the leg. The patient suffered from fever, chills and great weakness. The leg was red, swollen and very painful; there was also marked polyadenitis. Treatment consisted in the application of a poultice made by mixing about four ounces of flour with sufficient boiling water to which one tablespoonful of carbolized glycerin had been added. This was alternated with lavage of hydrogen dioxid, water and sodium bicarbonate dressings. Following the application of the first poultice, the fever decreased and the patient fell into a quiet sleep. The following day the local symptoms had greatly improved. The poultices were renewed every three or four hours, but the quantity of carbolic acid in them was decreased. Camescasse considers this treatment very valuable in such cases. [L.F.A.]

Treatment of Tuberculous Disease with Sodium Cinnamate.—Riegner⁴ reports 21 cases of pulmonary tuberculosis treated with intravenous injections of hetol (sodium cinnamate). The results were sufficiently favorable to induce the author to recommend it to the profession for more general use. He states, however, that only intravenous injections will give these results. [E.L.]

Theocin, a Synthetic Alkaloid.—Schweitzer⁵ writes interestingly of theocin, which is the first vegetable alkaloid to be manufactured on a large scale by simple synthesis. In 1888 Kossel isolated from tea leaves a new alkaloid isomeric with theobromin to which he gave the name theophyllin. It occurs in such small quantities that its manufacture from natural sources was impracticable. Chemic skill, however, has succeeded in preparing the same substance synthetically at a cost of \$2.30 an ounce, as compared with \$93 for the natural product. In order that the artificial alkaloid might not be confounded with the natural one, the name theocin has been given to this material. It has been clinically and experimentally investigated by Minkowski and by Dreser, who have shown that it is more nearly allied in its physiologic effect to theobromin than to caffeine. Minkowski found that in various forms of cardiac dropsy the remedy exercised a remarkable diuretic influence. In one instance the amount of urine excreted was raised from 1,300 cc. a day to 7,600 cc., and Dreser found that the solid constituents as well as the quantity of fluid were increased. Although not freely soluble in water, it is much more so than theobromin, dissolving in the proportion of 1 part in 79. It is without effect on the heart or circulation. [H.C.W.]

¹ Bulletin Général de Thérapeutique, Vol. cxliv, No. 22, p. 875, 1902.

² Therapeutische Monatshefte, December, 1902, p. 614.

³ Merck's Archives, December, 1902, iv, 365.

⁴ Bulletin Général de Thérapeutique, Vol. cxliv, No. 23, 1902, p. 911

¹ Lyon Médical, December 28, 1902.

² Therapeutic Gazette, 1902, Vol. xxvi, 798.

³ Bulletin Général de Thérapeutique, Vol. cxliv, No. 22, 1902, p. 862.

⁴ Münchener medicinische Wochenschrift, November 18, 1902.

⁵ American Journal of Pharmacy, lxxv, p. 27, 1903.

Treatment of Bronchial Hemorrhages by Gelatinized Serum.—Demange¹ reports that he has obtained excellent results from the injection of gelatinized serum in the treatment of three patients suffering from bronchiectasis with frequent hemorrhages. One of these patients who, on account of the frequent hemorrhages was in a state of profound cachexia, was enabled to resume his occupation. He had not had any return of the hemoptysis since the beginning of the treatment. Demange injects 45 cc. (1½ drams) of a 5% solution of gelatin every two days. This dose is perfectly well borne. The action of the gelatin is favored by rest in bed and a very light diet, preferably of milk. [L.F.A.]

FORMULAS, ORIGINAL AND SELECTED.

In Early Pulmonary Tuberculosis.—

Iodoform . . . . .	.03 to .2 or .3 gm.	($\frac{1}{10}$ to 3 or 5 gr.)
Arsenic iodid . . . . .	.005 gm.	($\frac{1}{20}$ gr.)
Strychnin arsenate . . . . .	.0005 gm.	($\frac{1}{200}$ gr.)
Reduced iron . . . . .	.06 to .2 gm.	(1 to 3 grs.)
Balsam of Peru . . . . .	.3 gm.	(5 gr.)

Mix and encapsulate. Begin with the minimum dose and increase the iodoform and the iron at each (weekly) renewal of the prescription.

Dose: One capsule thrice daily after food. [s.s.c.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended February 14, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
Alabama:	Mobile Feb. 6	2	
California:	Los Angeles Jan. 17-24	4	
	Sacramento Jan. 24-31	4	
	Stockton Jan. 1-31	10	
Colorado:	Denver Jan. 17-24	17	
Illinois:	Chicago Jan. 31-Feb. 7	16	
	Galesburg Jan. 24-31	5	
Indiana:	Indianapolis Jan. 17-24	152	36
Maine:	Biddeford Jan. 31-Feb. 7	16	
	Eastport Jan. 31	7	
Maryland:	Baltimore Jan. 31-Feb. 7	4	
	Cumberland Jan. 24-31	1	
Massachusetts:	Boston Jan. 31-Feb. 7	6	
	Haverhill Jan. 31-Feb. 7	1	
	New Bedford Jan. 31-Feb. 7	1	
Michigan:	Detroit Jan. 24-31	43	
	Grand Rapids Jan. 31-Feb. 7	14	
Missouri:	St. Louis Jan. 24-Feb. 1	26	
Nebraska:	South Omaha Jan. 1-31	1	
New Jersey:	Camden Jan. 27-Feb. 3	2	
	Newark Jan. 31-Feb. 7	2	
New York:	New York Jan. 31-Feb. 7	2	
Ohio:	Cincinnati Jan. 30-Feb. 6	11	1
	Dayton Jan. 31-Feb. 7	6	
	East Liverpool Jan. 1-31	2	
	Hamilton Jan. 1-31	5	
	Toledo Jan. 10-31	19	
Pennsylvania:	Altoona Jan. 31-Feb. 7	1	
	Philadelphia Jan. 31-Feb. 7	33	2
South Carolina:	Greenville Jan. 24-31	1	
Utah:	Salt Lake City Jan. 24-31	19	1

SMALLPOX—FOREIGN.

Austria:	Prague Jan. 3-17	14	
Barbados:	Barbados Jan. 2-16	4	
Belgium:	Antwerp Jan. 3-17	10	3
Brazil:	Rio de Janeiro Dec. 27-Jan. 10	1	9
Canada:	Winnipeg Jan. 1-31	2	
Canary Islands:	Las Palmas Dec. 27-Jan. 17	31	1
Germany:	Altona To Jan. 22	11	1
Great Britain:	Birmingham Jan. 17-24	5	
	Leeds Jan. 10-24	19	
	Leith Jan. 10-17	2	
	Liverpool Jan. 17-24	51	1
	Nottingham Jan. 3-10	1	
	Sheffield Jan. 10-24	3	
Mexico:	City of Mexico Jan. 18-25	5	2
Russia:	Moscow Dec. 27-Jan. 3	1	
	Odessa Jan. 3-17	12	
	St. Petersburg Jan. 3-10	49	6
Straits Settlements:	Singapore Dec. 20-27	3	
Turkey:	Constantinople Jan. 4-11	3	

YELLOW FEVER.

Brazil:	Rio de Janeiro Dec. 27-Jan. 10	56	
Mexico:	Tampico Jan. 18-31	3	
	Vera Cruz Jan. 24-31	6	3

CHOLERA—FOREIGN.

Egypt:	Alexandria Jan. 12-19	4	3
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PLAGUE—INSULAR.

Hawaii:	Honolulu Jan. 29-30	2	
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PLAGUE—FOREIGN.

Brazil:	Rio de Janeiro Dec. 27-Jan. 10	6	
Mexico:	Mazatlan To Feb. 4	278	217

Changes in the Medical Corps of the U. S. Army for the week ended February 14, 1903:

The following assignments of officers are made: Colonel Alfred C. Girard, assistant surgeon-general, will report to the commanding general, department of Luzon, for assignment to duty as chief surgeon of that department, relieving Major Louis Brechemin, surgeon, who will report to the commanding general of that department for assignment to duty; Lieutenant-Colonel John D. Hall, deputy surgeon-general, now in Manila, P. I., will proceed to Iloilo, Island of Panay, reporting to the commanding general, department of the Visayas, for assignment to duty as chief surgeon of that department, relieving Major John M. Banister, surgeon, who will proceed to Manila, P. I., reporting to the commanding officer, First Reserve Hospital, for duty as chief operating surgeon at that hospital. Major George H. Torney, surgeon, is assigned to the command of the First Reserve Hospital, Manila, P. I., relieving Major Edward R. Morris, surgeon, who will proceed to Iloilo, Island of Panay, reporting to the commanding general, department of the Visayas, for assignment to duty. Captain Edward L. Munson, assistant surgeon, is, in addition to his other duties, assigned to duty as sanitary inspector, headquarters division of the Philippines, vice Captain Frank Du Bois, assistant surgeon, U. S. Volunteers, relieved. First Lieutenant Robert Smart, assistant surgeon, is, in addition to his other duties, assigned to duty as sanitary inspector, headquarters division of the Philippines.

MORROW, First Lieutenant CHARLES E., assistant surgeon, is granted leave for one month.

O'NEILL, JOSEPH A., contract surgeon, will report at Chicago, Ill., not later than February 13, for assignment to duty with the Fourteenth Infantry, and to accompany that regiment to the Philippine Islands, for assignment to duty.

YATES, WILLIS S., hospital steward, Military Hospital, Jolo, P. I., is relieved from further duty in the division of the Philippines, and will be sent to San Francisco, Cal., and will report to the commanding general, department of California.

DESHON, Captain GEORGE D., assistant surgeon, having reported his arrival at San Francisco, Cal., will proceed to Boston, Mass., and assume the duties of attending surgeon and examiner of recruits in that city.

WINN, First Lieutenant ROBERT N., assistant surgeon, is relieved from further duty at Fort Riley and will proceed to Fort Grant for duty.

MCCALLUM, FRANCIS M., contract surgeon, in addition to his present duties at Indianapolis Arsenal, is assigned to duty as examiner of recruits at Indianapolis, Ind., and will report accordingly to Major James E. Macklin, Eleventh Infantry, recruiting officer at that place.

AGRAMONTE, ARISTIDES, contract surgeon, now at Havana, Cuba, will report at Cabana Barracks, for temporary duty.

DAVIS, Major WILLIAM B., surgeon, leave granted is extended ten days.

Changes in the Medical Corps of the U. S. Navy for the week ended February 14, 1903:

GROW, H. C., passed assistant surgeon, detached from the Marblehead and directed to wait orders—February 7.

BELL, W. L., passed assistant surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the Marblehead—February 7.

PLUMMER, R. W., passed assistant surgeon, commissioned passed assistant surgeon, with rank of lieutenant, junior grade, from June 17, 1902—February 10.

BRIGGS, R. E., assistant surgeon, appointed assistant surgeon, with rank of lieutenant, junior grade, from January 19, 1903—February 10.

SUTTON, R. L., assistant surgeon, F. W. S. Dean, appointed assistant surgeon, with rank of lieutenant, junior grade, from January 26, 1903—February 10.

BLOCK, W. H., acting assistant surgeon, ordered to the Naval Recruiting Office, Chicago, Ill.—February 10.

Changes in the Public Health and Marine-Hospital Service for the week ended February 12, 1903:

MAGRUDER, G. M., surgeon, granted leave of absence for one day—February 6, 1903.

DECKER, C. E., assistant surgeon, granted leave of absence, on account of sickness, for ten days—February 10, 1903.

PARKER, H. B., assistant surgeon, to proceed to New Orleans, La., for special temporary duty—February 6, 1903.

HAMILTON, H. J., acting assistant surgeon, granted leave of absence, on account of sickness, for thirty days from December 27, 1902—February 3, 1903. Granted fifteen days' extension of leave of absence, on account of sickness, from January 27—February 7, 1903.

SIBREE, H. C., acting assistant surgeon, granted leave of absence for six days from February 7—February 6, 1903.

ULBICH, C. F., acting assistant surgeon, granted leave of absence for twenty-five days from February 15—February 11, 1903.

GAHN, HENRY, pharmacist, granted leave of absence for five days from February 6, 1903, under provisions of paragraph 210 of the regulations.

Resignation.

MALARET, PEDRO, acting assistant surgeon, resigned, to take effect January 31, 1903.

¹ Bulletin Général de Thérapeutique, Vol. cxliv, No. 24, 1902, p. 940.

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"Race suicide" is the phrase coined by President Roosevelt to indicate the lessened natality or birthrate of the more educated classes. President Eliot has published the statistics of the number of children of certain properly-selected graduates of Harvard College, and finds the suggestion that in all probability the intellectual and educated classes of the community are not reproducing themselves. The growth of the fashion of intentional childlessness is rightly and righteously condemned by President Roosevelt; those guilty of it are in truth "criminals against the race." But this is the crime that increases in all old, rich, and hence increasingly selfish and corrupt nations. The difficulty lies in getting the remedy, any remedy proposed, into effective action. All the statistics and arguments in the world will not make the individual parents have more children when the debasing influences of luxury and selfishness become active in over-urbanized civilized life. There are three causes, however, that if not fundamental are at least powerful in influencing the birthrate. The first is the postponement of marriage until so late in life that numerous children are impossible; the second is the murder of children before birth, and the third the license allowed the unfit to marry. It therefore behooves society and especially the lawmakers to learn and to discourage the causes of delayed marriages; to prevent the awful waste of life at present so great due to abortions and stillbirths; and more important still, to refuse the right of marriage to the hopelessly diseased and unfit, the insane, paupers, criminals, drunkards, idiots, etc. The rights of the unborn are superior to the pleasure of the living, and the rights of all the living are higher than those of a few.

The annual subsidization scramble in Pennsylvania has begun. It will be remembered that over one-half of all the money appropriated by all the United States to private charitable institutions is given by the Pennsylvania State politicians. On the boards of trustees and directors of these institutions are most of the influential men of the State. What more certain method could be devised to stifle criticism and independence in the face of corrupt political bosses than this of the threat to cut off the appropriations to the charitable institutions if a word is uttered? It is surely effective! And the millions are thrown into the trough

with the wink that the most corrupt will get the most. "You must make your cost of inpatients higher; charge up to this all the expenses of the outpatient department," said one of the dispensers of patronage to an applicant. It is said that some hospitals—according to their figures—now have twice as many bed-days as patients; that is, they could accommodate the reported patients each night only by means of putting two or more in a bed. Some of the best and noblest private charitable institutions in the State do not ask for help from the public treasury. Only when absolutely under State control should the State aid institutions. Any other plan leads to infamous abuses and injustice. There has been much discussion of late in the lay magazines and newspapers as to "tainted gifts." Should an institution, university, church, medical college, hospital, etc., accept the gifts of money obtained by corrupt methods from evil men? It would have been more instructive to find out if any such gifts were ever refused. More illuminating still would be the perfectly selfevident and historically proved truth that if they do accept the gifts of the wicked, it is to their great peril and certain injury. The character, whether giver or getter, which thinks that it can really profit by fraud and dishonor has still much to learn, even in worldly wisdom.

The Plans of the Rockefeller Institute.—According to Dr. Holt, the secretary, Mr. Rockefeller, who has already given \$1,200,000, will carry to full establishment the scheme for an institute for medical and pathologic research in New York City which will be without an equal in the world. The plans are for the immediate erection of a laboratory in which will be conducted investigations in all departments of medical research by a large resident staff and a coordinate staff of nonresident Fellows.

For the building of a hospital in which special groups of patients will be treated in order to develop new methods in the treatment of disease.

The establishment of a journal in which are to be published the results of the institute's investigations and which will serve as a medium for discussion of kindred topics.

The ultimate plans are:

The establishment of popular lectures by which to spread information on hygienic matters.

The institution of a hygienic museum and the dissemination of literature bearing on the problems investigated. Professor Simon Flexner has been appointed director of the laboratory, and will begin his work at the institute in July next. Full text of the official announcement of the institute is given elsewhere.

The Importance of Teaching the Art as Well as the Science of Medicine.—At a recent meeting of the New York Academy of Medicine special consideration was given to the necessity of radical reform in the teaching of medicine to senior students. The fact was emphasized that the scientific laboratory work of the first two years must be supplemented for at least an equal period by opportunities for acquiring the art of diagnosis and treatment through actual observation at the bedside and in the dispensary. The training of "the eye to see, the ear to hear, and the finger to feel," means to medical students training in the physician's art, in which skill is attainable only by oft-repeated and long-continued practice. Detailed knowledge of the human mechanism may be acquired in the laboratory and dissecting-room, but control of the mechanism in action can only be attained by continued dealing with the living organism. It is said that graduates of the foremost technologic institutes of the world flock to the shops of the General Electric Company at Schenectady to gain the practical skill and facility in applying scientific knowledge which can be secured by actually doing the tasks of regular workmen in the various departments. Here we have an adaptation of the old apprenticeship system as a postgraduate course in electric technology. So the modern medical school may with advantage combine the science and theory of the lecture-room and laboratory, with such practical opportunities for acquiring skill of eye and ear and hand which the old-time student secured by accompanying his preceptor on his daily round of visits or by assisting him in his office practice. How to utilize hospitals and allied institutions to the best advantage, in combination with the training of physicians, is one of the most difficult problems of medical education. Let us hope that hospital advantages which have heretofore largely gone by favor may soon become the privilege of every student.

Deserted Cities.—In historic times there are few instances of the complete desertion of cities, and these are of small ones, and the causes are well understood, as in the cases of Pompeii, Martinique, etc. But there exist the ruins of many large cities which in wealth and magnificence must have rivaled ours but which for some reason unknown must have been suddenly left by the inhabitants. The mystery of such a wholesale desertion is not to be accounted for by the reasons ordinarily surmised—the whim of a tyrant ruler, the failure of food or water, or the misfortune of military defeat. Possibly the reason we are about to suggest may have been offered before, but we are not aware of it, but no other than epidemic disease would seem able to account for such strange dying out or flight of enormous numbers of people. Prior to historic times the visitation of plague or of some other violently infectious disease would not

be understood and men would be able to avoid death only by flying from the pest which was really caused by their own ignorance and filth. Even in our time and in the very center of civilization the students of a great University are rushing pell-mell away from it instead of going to the trouble of boiling their drinking water.

Queensland More Progressive Than the United States as to the Adulteration of Foods.—While we wait in vain for our political bosses to do something for the health of the people, Queensland has perfected a system to protect her citizens from the scoundrels who seek to cheat them by the most vicious criminality in the manufacture of impure and poisonous foods. Strict laws are enforced in Queensland as to the substances that may and may not be used as ingredients, coloring matters, preservatives, etc., of beer, alcoholic liquors, mineral waters, fruit essences, foods, milk, tea, vinegar, butter, cream of tartar, etc. There are detailed laws also as to the carrying on of the businesses pertaining to the manufacture and sale of all such things, and a fine not exceeding \$250 is provided for infringement of any parts of the law. Were it not for the hope that the careless and corrupt and ignorant among our people and their lawmakers will at last renounce their ways and become interested in the health and welfare of the nation, the outlook for republicanism in government would not be hopeful.

The "Cry of the Children" Being Answered.—It is gratifying to know that one of the greatest and long neglected needs of preventive medicine is being met. Almost every method of relieving defectives and curing disease has found support by legislators, but the children have been allowed to go crippled and diseased until cure was impossible. Leaving out of view their suffering, the pity of it all, it is incomprehensible that the benevolent should have so neglected this method of avoiding the rooted and chronic morbidity and the permanent expense of the incurable. The visit of Dr. Lorenz brought from their hiding places thousands of crippled children whose existence was unsuspected. No institution was supported by the State for their benefit. Even now it is difficult to catch the attention of the lawmakers. Private charity is seeking to bring some relief to the little sufferers. One church in New York has established a day hospital for them and is caring for more than its funds will warrant. There is also Dr. Shaffer's noble attempt to solve the problem, and the special work of "Daisy Fields" at Englewood, N. J., has now gone on for ten years, its special task being that of taking half-cured cripples to the country for convalescence. We hope the Widener School for Crippled Children will soon be in operation, and widely imitated elsewhere. As to the general care of children a number of worthy institutions exist and should be supported more generously by the public. Noteworthy among these is the perfect Children's Seaside Home at Atlantic City under the general charge of Mr. K. M. Blakiston. Most encouraging also is the lately-opened Babies' Hospital in New York, which seems from the accounts to be ideally-constructed and equipped. If the women

of the land could have their attention turned to this splendid opportunity instead of to the fashions and fads of antiscience and selfish charities!

Yellow Fever in Vera Cruz.—The commissioners appointed by the government of Vera Cruz to investigate and report upon the existence of yellow fever in Cordoba and Orizaba find that yellow fever actually exists in an epidemic form in two wards of the city of Orizaba; that the disease was primarily imported; that it is possible to prevent the extension and spread of the same by stringent and rigorous measures; that it is possible to eradicate the infection centers by the isolation of the patients, the destruction of the mosquitos, and the observance of sanitary rules. One physician was of the opinion that the disease was transplanted by mosquitos carried in railway trains from Vera Cruz. In Cordoba wire screens had been provided for one entire hospital, but these were ineffective because the size of the mesh of the wire cloth was too large. The commission recommended that the screens should be painted with a thick coat of white lead to reduce the size of the meshes. In Orizaba much of the water used for domestic purposes was stored in barrels and other vessels, thus creating breeding places for the stegomyia; the floors of the tenements being of earth, much of the waste water and filth was absorbed by the same; garbage and all waste matter were simply thrown into the streets. Every discovery in medicine and every step taken in sanitary science discloses the fact that the hidden meaning of the seemingly selfish and illogical rage for imperialism and colonization on the part of modern nations consists in the extension of our knowledge of the prevention and cure of disease to the barbaric and semicivilized peoples of the globe. It is our duty to see to it that the "aim of history" is realized.

A union of scamps, medical, editorial, and manufacturing, is planned, and, according to the circular before us, is in existence. Over 25,000 physicians, we are told, are copartners in the scheme, and they get in free of charge. The nostrum-maker is charged \$10.00, but he gets his reprints of articles lauding his preparation written by the 25,000 physicians at 50% discount from the usual rates for such literature. All, absolutely "ALL," pharmaceutical products are to have practical tests by the 25,000, and all those are to be "weeded out" which have no merit, according to the 25,000. We suspect the weeder-out will have no work to do. All that have merit, according to any one of the 25,000, are to be "pushed to the front," etc., because "this is an age of enterprise and progress," and physician or manufacturer who does not "push" in this way "gets left in the rear." This "pushing to the front" of the "meritorious pharmaceutical preparations" praised by the 25,000 is to be done, we are assured, "in an entirely ethical manner, and wholly devoid of any sign of commercialism whatsoever." We are sorely puzzled to learn how the 25,000 are to be benefited, but that will evidently be attended to by the manufacturers who pay \$10.00 for the privileges of the "Association." The most interesting detail of the plan lies in the relation of

the "Association" to the medical journals of the country. "Almost every medical journal of the United States worthy of notice" is said to be in the game; the slight limit to all-comprehensiveness is encouraging to the few professional ones. The Association can get articles in "almost any one" when this is impossible "through the regular channels." "In all cases we guarantee the publication of the article at a merely nominal figure, and oftentimes utterly free of charge, especially if the preparation concerning which the article is written is advertised in the publication applied to." Could scoundrelism be more nauseating? Here are opportunities galore for all the pathologic pathologists in the country. And yet journals are blamed for refusing papers in praise of proprietary preparations! It is long past the date when honest manufacturers should also band themselves together.

Vaccination by "Variolinum."—In a "Catalogue of Morbific Products, Nosodes, and Other Remedies in High Potencies," issued by a drug store, and now lying before us, we find listed and for sale two articles, *Variolinum*, and *Variolinum ovillum*, both evidently intended for internal administration. In a recent epidemic of smallpox in Philadelphia, it was gravely contended, and by physicians, too, that vaccination "by the mouth," or "by the stomach" was a real and a legally valid form of inoculation. The prompt coming down with smallpox of some of the contenders put a quietus upon their missionary zeal, at least in public. But the superstition seems by no means to be dead, and the matter has a distinct legal aspect. At the recent meeting of the State and Provincial Boards of Health, Dr. Kennedy, of Des Moines, Iowa, asked the conference to formulate a definition of vaccination. He said:

There is a school of practice in our State administering internally a preparation called "variolinum." They say this is equivalent to vaccination. In our State we have a law or regulation to the effect that no child can be admitted to the public schools without furnishing satisfactory evidence of successful vaccination. Under that regulation we have had several cases of litigation. Children, who are not vaccinated, have applied for admission to the public schools, and the law has been invoked compelling the local Boards of Health or the School Boards not to admit such children. The courts have decided that inasmuch as no definition of vaccination has been made by the State Board of Health (the courts consulted the medical dictionaries, also Webster's and the Century), if a child with a certificate from a physician certifying that it had been vaccinated by inoculation, the child should be admitted to the public school. There are numbers of children going to our public schools who have been vaccinated legally by inoculation, who have not conformed to any of the methods that have usually been regarded as vaccination, and a resolution was introduced in our board meeting to define vaccination.

A committee report was adopted which defined vaccination as follows:

An inoculation, by scarification, puncture or injection beneath the epidermis, of a vaccine which produces, with some constitutional disturbance, the typical vaccine vesicle, which leaves, after the poek has healed, its characteristic scar.

Let us make an end, both medically and legally, of the "variolinum" nonsense.

"Of the Mutual Complete and Permanent Transfusion of the Blood," is the title of a leaflet

lying before us. As no epitome would improve the original we quote it verbatim and in full:

Brooklyn, February 13th 1903

Dear Doctor,

I did propose with letter February 8th 1903 to the New York State Medical Association a projet to graft together two men of different age, making two small wounds, each in a different individual, and putting the two wounds in complete contact. The best point is the tip of a finger which is vascularized enough, and leaves the most liberty of motion to the grafted men after the operation.

If there will be reunion, blood will be exchanged between the two men. If only a drop of blood is exchanged at each contraction of the heart, and we have 103680 contractions of the heart daily, consequently will be exchanged 5184 c. cm: in one day.

There will be a mutual, complete and permanent transfusion of blood between the two men.

If the vitality is a force, it will be at the same tension in the cells of the old man and in the elements contained in the blood of the younger.

With more vitality there will be more cellular functionality, and the reproductive power of the tissues will be increased, and consequently there will be an increased number of cells of new formation (young cells).

With the blood, all the organic glandular juices will be exchanged and will have their peculiar action.

If a virulence of a microorganism or of any x is an explanation of its vitality we have an example of the tendency of equilibrium of vitality between two nearly similar bodies in the action of the vaccin over the Small-pox, and of the attenuate virus of the Pasteur's method over the Rabies.

The graft must be kept for a long time, one year or more.

The temporary transfusion of blood, already made, cannot do much good, like a man anemic for insufficient alimentation, cannot have improvement with only one regular meal.

A prove could be obtained very quickly, grafting together two animals of the same species, one at the age of complete development of the skeleton and another at the age before that complete development, if the older grows.

Application of this method could be done to many diseases where the deficient function of an organ could be supplied by the healty grafted man.

A man with ulcer of the stomach grafted with another more aged, but with good health, could receive alimentation with the blood of the old man, and keep his stomach at complete rest.

If there is a relative immunity for the tuberculosis in the old age, and if rarely are found Koch's bacilli in the blood, we could graft a strong old man with an young man suffering from tuberculosis in that cases where many microscopic examinations of the blood and several inoculations in the animals have demonstrated the absence of bacilli in the blood.

This is a case of mutual utility because the old man could transfuse that conditions which did give him the immunity for the tuberculosis, and receive the increased reproductive power of his tissues from the young.

I am obliged to print my idea before a complete experimental work, for saving my rights of invention for the application which could be done in the improvement of industry of bringing-up animals, where the old ones could have more strenght and their flesh become more fit for eating with my method of graft, etc., etc.

The best point for the graft in the rabbit is the tail.

I put myself under the protection of the American laws, having full right of naturalisation, because I declared my intention to become Citizen of the United States of America the day 8 January 1901 and I arrived in this country in 1897 like ship's surgeon of the California S. S. of the Anchor Line Co. (See the Records of County Court of Kings County, State of New York).

Respectfully your truly.

But one comint appears necessary—a glance at the antivivisectionists, a pointed finger, and a low "Sic him!"

EDITORIAL ECHOES

Tuberculosis in Cleveland.—1. Tuberculosis in Cleveland furnished, during the 7 years under consideration, 8.7% of the total deaths, 1.4% of the deaths between the ages of 20 and 25 years, and 2.6% of the deaths between the ages of 20 and 30 years. The mortality was 130 to each 100,000 of the estimated average population.

2. Of all tuberculous deaths 15.5% occur between the years 20 and 25, 30.3% between 20 and 30, and 50% between 23½ and 44 years.

3. Of all deaths 4.9% were male deaths from tuberculosis. Of all deaths from tuberculosis 56.6 were male deaths.

4. Of all deaths 3.8% were female deaths from tuberculosis. Of all deaths from tuberculosis 43.4 were female deaths.

5. In proportion to the total, the greatest number of male deaths is found between the ages of 25 and 29, of females between 20 and 24.

6. In proportion to the living population the greatest number of deaths occurs between 55 and 64 years.

7. A seemingly justified inference is drawn that marriage increases the liability to death from tuberculosis, and that this is true in the female sex alone, or in that sex to a greater degree than in the male. There seems to be a very real relation between the existence of a tuberculous process and marriage, in that the condition under consideration has a very marked tendency to postpone or prevent individuals so affected from entering the married state.

What should be done is clear. Tuberculosis should be overlooked like diphtheria, scarlet fever, measles, whoopingcough and other infectious and contagious diseases, and heads of families and medical attendants should be required to report to the health office all cases of tuberculosis coming within their knowledge. Earnest effort must be made to obtain the necessary legislation to secure this. The Health Office should disinfect tuberculous infected houses and distribute with judicious care, subject to the proper control of the physician, to the victims and their families information regarding the proper care and disposal of sputum and other discharges, as well as in the wellknown and equally neglected principles of personal and public hygiene, enforcement of which is so necessary in limiting the spread of this disease. The streets, sidewalks, public buildings and conveyances should be properly cleaned, protected and disinfected. We, physicians and laymen alike, must do our duty, and lead and direct public opinion and sentiment in the proper direction; report our cases of tuberculosis and throw our influence on the right side. The health department must be provided with the organization, power and means of carrying on the fight. We must stand behind it, give it our moral support, as well as see that it is provided with the ammunition and men-of-war. We must realize the fact that the health office is our creature and a true reflection of our own position in municipal sanitation. I need not remind you of the great need of sanatoria for the treatment of both curable and incurable cases of tuberculosis of all kinds, and of the good influence they would also have in the dissemination of correct ideas concerning the prophylaxis of the disease.—[*Cleveland Medical Journal.*]

A medical practice bill recently introduced into the Kansas Legislature proposes to abolish the State Board of Registration, and requires the State Board of Health to assume the duties of that body.

BOOK REVIEWS

Textbook of Medical Jurisprudence and Toxicology.—By JOHN J. REESE, M.D., late Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania; late President of the Medical Jurisprudence Society of Philadelphia. Sixth edition. Revised by HENRY LEFFMANN, A.M., M.D., Professor of Chemistry and Toxicology in the Woman's Medical College of Pennsylvania; Pathologic Chemist to the Jefferson Medical College Hospital; Vice-president (British) Society of Public Analysis. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut street, 1902.

In the editor's preface attention is called to the fact that since the publication of the last edition of this work the subject of toxicology has been much developed. The introduction of numerous synthetic organic bodies and their extensive use as household remedies have given rise to many instances of accidental and suicidal poisoning, and the extensive use of water-gas greatly increases the list of accidental deaths. Among new phases of treatment, free washing out of the stomach, many uses of potassium permanganate, the employment of alcohol in phenol poisoning, and the use of strychnin in morphin poisoning, are specially noted. The editor states that "the general character of the book as it left the hand of its distinguished author has been retained," but one sees at once that it has been thoroughly revised and rewritten, and so much new material has been incorporated with the text as to make it practically a new work. The English is clear and concise; the evidences of painstaking in the collection of data are so many that one must reasonably conclude that all the statements made are exact and trustworthy. The work is not merely a treatise on poisoning, but covers the whole ground of legal medicine. The method of examination of dead bodies, the determination of their identity, and of the identity of the living, the sources of error in medical and in legal inquiries as to the cause of death, and in fixing the responsibility therefor, are thoroughly considered. Abortion, rape, and various criminal procedures not resulting in death, are also studied. Insanity from the viewpoint of medical jurisprudence is clearly and admirably analyzed. In the section upon toxicology the various agents used in criminal, suicidal, and accidental poisoning are considered with reference to their identification, their effects, and the best methods of antidotal treatment. This section is especially noteworthy for its accuracy and fulness. There is probably no work that can with greater confidence be placed in the hands of students, and to which the physician may refer on emergency with equal certainty of quickly finding what he wants.

The New International Encyclopædia, Vol. VI.—Dodd, Mead & Co., New York, 1903.

The more important medical articles of this volume are as follows:

Diabetes	Ear
Diaphragm	Ear-trumpet
Diarrhea	Eczema
Diet	Elephantiasis
Digestion	Embalming
Digitalis	Embryo
Diphtheria	Embryology
Disease	E endemic
Disinfectants	Endermic
Dislocation	Enteritis
Dispensary	Epidemic
Dissection Wounds	Epilepsy
Diuretics	Epithelium
Double Consciousness	Erysipelas
Dropsy	Erythema
Dysentery	Ether
Dyspepsia	

Among the failures to cross-reference are these:

Dressings, surgical	Edema
Drug Eruptions	Electrotherapeutics
Duboisin	Empysema
Dysphagia	Endarteritis
Dyspnea	Endometritis
Dystocia	Endoscope
Echolias	Enuresis
Echymosis	Eserin
Eclampsia	Esophagotomy
Ectopic Gestation	

The legal aspect of drowning is treated, the medical omitted. Electrocutation has half a column, but injuries from electric-

ity are not mentioned. The medical uses of the dynamometer are not spoken of. A serious error appears in the article on diabetes, in which no distinction is drawn between glycosuria and diabetes mellitus. Glycosuria is not always "a grave disease," and treatment is by no means always "unsatisfactory." Eponymic diseases should be mentioned in connection with biographic notices: Duhring's disease, for instance, is not spoken of under Duhring.

Diseases of the Stomach.—Their Special Pathology, Diagnosis and Treatment, with Sections on Anatomy, Physiology, Chemic and Microscopic Examination of the Stomach Contents, Dietetics, Surgery of the Stomach, etc. By JOHN C. HEMMETER, M.D., Philos. D. P. Blakiston's Son & Co., Philadelphia. Price \$6.00 net.

We deem it safe to assert that in the hands of the general practitioner no important organ of the body is treated so constantly and so blindly as is the stomach in its pathologic conditions, fancied or real. Medical works which deal exclusively with the stomach are not numerous. To those who are acquainted with the previous editions of this work the present edition needs no encomium. This edition comprises a volume of nearly 900 pages, and as the author states much emphasis has been placed upon the factor of differential diagnosis and new material has been added to the chapters on ulcer and carcinoma, and a new article on gastric lipase. There is not a chapter in this exhaustive work which should not be read by every general practitioner. Diagnosis and treatment of the diseases of the stomach have been taken out of the realm of empirics and placed upon a scientific basis, which fact will be duly appreciated by both internists and surgeons.

A Course in Botany and Pharmacognosy.—By HENRY KRAEMER, Ph.B., Ph.D., Professor of Botany and Pharmacognosy, and Director of the Microscopical Laboratory in the Philadelphia College of Pharmacy. Edw. Stern & Co., Inc., Philadelphia.

This book is designed for the use of students in pharmacy in order to enable them to recognize vegetable drugs and to give them so much of an introduction to the subject of systematic botany as will assist them in their special studies. The work seems to be well designed, and the design to be carried out with reasonable accuracy; it must therefore be useful. It is to be regretted that at times the author has permitted himself to print as sentences collocations of words in which one searches in vain for either substantive or predicate.

Transactions of the Twenty-fourth Annual Meeting of the American Laryngological Association, held at Boston, Mass., May 26, 27, and 28, 1902. New York: Rooney & Otten Printing Co., 1902.

The high character of the work of the American Laryngological Association has suffered no diminution of late years. Among specially interesting articles in the present volume are those by D. Braden Kyle, on The Chemic Pathology of the Saliva and Pharyngeal Secretion as a Means of Diagnosis; by Fletcher Ingals, on The Immunization Treatment of Hay-fever; by Bryson Delavan, on The Results of Treatment of Laryngeal Cancer by Means of the X-ray. John O. Roe contributes a timely warning as to Some Cautions to be Observed in the Use of Suprarenal Extract in the Nose, and S. W. Langmaid gives an interesting account of Nonsuppurative Cervical Adenitis. One notes with regret that Morris J. Asch is represented by an obituary instead of a contribution.

The Public and the Doctor.—By a Regular Physician. Published by Dr. B. E. HADRA, Dallas, Texas.

It is the comment and regret of every observing physician how little the general public understand and appreciate the ethics of the medical profession both as applied to the relation between physicians themselves and as applied to the proper relation between the patient, his friends, and the physician. A sad commentary upon this is the ubiquitous and thriving quack, and "cure alls" which are daily taken by the gullible thousands with almost "that faith which would move mountains." This little book is an effort on the part of an intelligent and dispassionate physician to break down in some measure this barrier of ignorance and misunderstanding. It is

a series of heart to heart talks with the patient and his friends, advising them in their relations with the doctor, urging the wise and proper choice of a physician and a perfect and neutral understanding. The book, however, is highly interesting and instructive to the physician, especially the beginner. If this little book was read in every household—and it is entirely appropriate for that purpose—a great change would soon be wrought.

Anatomy of the Human Peritoneum and Abdominal Cavity Considered From the Standpoint of Development and Comparative Anatomy.—By GEORGE S. HUNTINGTON, M.A., M.D. Published by Lea Brothers & Co., Philadelphia and New York.

It is well known that one of the most confusing and perplexing subjects in human anatomy is the peritoneum. It is rare, indeed, that the student comprehends it. Professor Huntington has accomplished a splendid work in completing this excellent book, which itself is a work of art. While the book is in no sense a work on embryology nor comparative anatomy, these are drawn upon largely by the author to illustrate with clearness the development of the human peritoneum and abdominal viscera. Neither pains nor expense have been spared in the illustrations, the work abounding in some 300 full-page plates, containing 582 plates in many colors. Some idea of the scope and method of presenting the subject may be had from the knowledge that the author has considered the subject in four principal parts with many subdivisions. They are: Part I.—Anatomy of the Peritoneum and Abdominal Cavity. Part II.—Anatomy of the Peritoneum and the Supracolic Compartment of the Abdomen. Part III.—Large and Small Intestine, Iliocolic Function and Cecum. Part IV.—Morphology of the Human Cecum and Vermiform Appendix. The author's long experience as professor of anatomy in Columbia University, New York, and his extensive researches in comparative anatomy has enabled him to speak with interest and authority on the many interesting and perplexing questions in the work under consideration. It will appeal especially to anatomists, obstetricians and abdominal surgeons. The medical profession and scientists in general owe Professor Huntington renewed obligations for the production of this splendid volume.

BOOKS RECEIVED.

[Prompt acknowledgment of books received will be made in this column, and from time to time critical reviews will be made of those of interest to our readers.]

Abdominal Anatomy: The Anatomy of the Human Peritoneum and Abdominal Cavity Considered from the Standpoint of Development and Comparative Anatomy.—By GEORGE S. HUNTINGTON, M.D., Professor of Anatomy in the College of Physicians and Surgeons, Columbia University, New York City. In one handsome quarto volume of 590 pages, including 300 full-page plates in colors and monochrome, containing 582 figures. De luxe edition; gilt top; uncut edges; \$10.00, net. Lea Brothers & Co., Philadelphia and New York, 1903.

Manton's Obstetrics: A Manual of Obstetrics for Students and Practitioners.—By W. P. MANTON, M.D., Adjunct-professor of Obstetrics and Professor of Clinical Gynecology, Detroit College of Medicine. In one 12 mo volume of 265 pages, with 82 illustrations. Cloth, \$1.00. Lea Brothers & Co., Philadelphia and New York, 1903.

The American Year-book of Medicine and Surgery for 1903.—A yearly Digest of Scientific Progress and Authoritative Opinions in all branches of Medicine and Surgery, drawn from journals, monographs, and textbooks of the leading American and foreign authors and investigators. Arranged with critical editorial comments by eminent American specialists, under the editorial charge of GEORGE M. GOULD, A.M., M.D. In two volumes.—Volume I, including General Medicine, octavo, 700 pages, fully illustrated; Volume II, General Surgery, octavo, 670 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Co., 1903. Per volume: Cloth, \$3.00 net; half morocco, \$3.75 net.

Toxicology: The Nature, Effects, and Detection of Poisons, with Diagnosis and Treatment of Poisoning.—By CASSIUS M. RETEY, M.D., Professor of Chemistry and Toxicology in Barnes Medical College, etc. Lewis S. Matthews & Co., St. Louis, Mo.

The Nose and Throat in Medical History.—By JONATHAN WRIGHT, M.D. Lewis S. Matthews & Co., St. Louis, Mo.

The Life Within.—Lothrop Publishing Company, Boston, Mass.

Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition.—By PROF. CARL VON NOORDEN, Senior Physician to the City Hospital, Frankfurt-on-the-Main. Authorized American edition. Translated under the direction of BOARDMAN REED, M.D., of Philadelphia, Professor of Diseases of the Gastrointestinal Tract, Hygiene and Climatology in Department of Medicine, Temple Medical College, Philadelphia. Parts I and II. E. B. Treat & Co., New York, 1903.

Transactions of the Luzerne County Medical Society for the year ended December 31, 1902. Volume X. E. B. Yordy Co., Wilkes-Barre, Pa.

AMERICAN NEWS AND NOTES.

GENERAL.

Medical Advertisements and Religious Publications.—A recent announcement made by the advertising agent of the nine official organs of the Methodist Church of the United States asserts that after January 1, 1903, no medical advertisements whatever will be granted space in the journals under his management.

To Prohibit Hazing.—The National House of Representatives has adopted an amendment to the naval appropriation bill which provides for the punishment of hazing at the Naval Academy. It prescribes the same penalty of summary expulsion to midshipmen from the Academy at Annapolis that is now the law for the army cadets at West Point. In both cases any offender who may be expelled for the violation of the anti-hazing regulations is also ineligible for commission in the U. S. Army, Navy or Marine Corps until two years after the graduation of the class of which he is a member.

Bubonic Plague.—Surgeon-General Wyman, of the Public Health and Marine-Hospital Service, says that the last case of bubonic plague reported in San Francisco was on December 11, 1902, but that in conformity with the resolutions adopted by the mercantile joint committee the State has appointed seven new inspectors of Chinatown under the supervision of the Public Health and Marine-Hospital Service. These are in addition to the corps of inspectors already engaged in this work. It is said the city, State and United States authorities are working in perfect harmony, and every effort will be made to prevent a recurrence of the disease in any locality.

Hospital Benefactions.—BUFFALO, N. Y.: Announcement is made of a contribution of \$50,000 by Mr. Frank Good-year and of \$49,000 by Mr. William Hamlin as a fund to raise the debt of the Buffalo General Hospital. It is expected that \$100,000 additional will be raised by subscription to clear the remainder of the indebtedness. PHILADELPHIA, PA.: The late Miss Carrie S. Kinsey, of Bristol, Pa., bequeathed \$5,000 to the Philadelphia Methodist Hospital for the endowment of a free bed in memory of her father, the late William Kinsey. BOSTON, MASS.: The late Miss Emily E. Sears, of Boston, bequeathed \$5,000 each to the Home of the Good Samaritan, the Associated Charities, and the Children's Hospital.—*St. Mary's Free Hospital for Children:* Through a bequest of the late Charles A. Cowtoit two new wards were recently opened in this hospital.

American Congress on Tuberculosis.—Dr. Daniel Lewis, of New York, president of the American Congress on Tuberculosis, has issued, under date of February 18, 1903, a circular announcing that the next meeting will be held in St. Louis, Mo., July 18 to 23, 1904. The work of the organization is being pushed as rapidly as possible. To facilitate this the congress has been granted a charter, thus making it a legal body, and by this means greatly facilitating the work of reorganization on the lines mapped out at the last meeting, when it was decided that a radical reorganization should be completed by the officers elected. At this time in St. Louis will be held the International, or World's Congress on Tuberculosis, and to effect a complete organization on ethical lines a number of wellknown physicians have been asked to serve on the advisory committee to assist the council in preparing plans for the meeting. The lengthy list includes Surgeon-General R. M. O'Reilly, of the U. S. A.; Surgeon-General P. M. Rixey, of the U. S. N., and many other prominent physicians throughout the United States. The circular is signed by the secretary, Dr. George Brown, of Atlanta, Ga.

NEW YORK.

Against Infected Ice.—A bill has been introduced into the New York Legislature prohibiting the cutting of ice for domestic purposes within 3,000 feet of any village, town, or city of more than 10,000 inhabitants, on the Hudson river. It also provides that in cities of over 1,000,000 inhabitants ice dealers shall obtain licenses from the Health Commissioner, and indicate by signs on their wagons whether they are selling natural or artificial ice.

Hospital for Convalescents from New York Hospitals.—It is reported that Miss Ethel Folsom, of New York City, will establish a home for convalescents from New York hospitals in the town of Lee, Mass. A large house and a tract of land has been leased and will be converted into a home from May to November for discharged patients of a number of hospitals. Each patient is to have the benefit of two weeks' recuperation in the Berkshires.

Serum for Cholera Infantum.—It is announced that the summer corps of physicians of the New York Health Department will use a specially prepared serum to combat cholera infantum during the coming summer. It is said that the mortality among infants from cholera infantum, notwithstanding the use of sterilized milk and other sanitary precautions, has caused bacteriologists to seek a specific remedy in a serum. Dr. Lederle, president of the Board of Health of New York, is

quoted as follows: "I have no doubt that it will be a success, but we will wait and see the results before we make any announcement. A cure for cholera infantum would mean a great deal to the mothers of the poor children. The summer corps did great work last year. There is no reason why they should not do even better this coming summer."

Schools for Crippled Children.—There are at present seven day schools for crippled children in New York City beside the one connected with the Hospital for the Ruptured and Crippled. These schools are managed by boards of women and are supported by voluntary contributions. Each has its wagonette or ambulance which brings the children in the morning, taking them home again after the sessions are over. There are about 400 children in attendance in these seven schools.

Farm for Tuberculous.—The committee on the Prevention of Tuberculosis of the Charity Organization Society now has 100 families in charge, in each of which there is one or more victims of tuberculosis. The committee asks for an immediate special fund of \$5,000 for the special relief of cases under its care. It is desired to rent in a suitable location a farmhouse, and to equip and maintain a boarding house in which accommodations can be provided under medical supervision for a number of the afflicted. Public contributions are asked for to assist in this charitable work.

New Harlem Hospital.—Plans have been filed for building this hospital, which will consist of a main building five stories in height with two four-story wings. The first floor will contain, in addition to the offices, the emergency wards; the second floor will contain male surgical and medical wards; the third floor the children's and female wards; the fourth floor the female surgical and maternity wards, and several laboratories; the fifth floor, with a glass dome in the roof, will be used as an operating theater. Each wing will have a roof garden. It is estimated that the building, when finished, will cost about \$300,000.

Tent Hospitals for the Tuberculous in New York City.—It is asserted that the Board of Health of New York City has decided to establish a camp where persons suffering from pulmonary tuberculosis can live and receive proper medical treatment. The plan is to select the site on high ground somewhere in the vicinity of the Hudson river. Several tracts are under consideration at various points above the high bridge. There is said to be 40,000 persons in the city of New York suffering from tuberculosis and since the cost of hospital construction is \$1,000 per patient it is obvious that the city cannot stand the enormous expense for hospital construction at the present time. In view of this the plan is to establish camps where tuberculous patients may have the advantage of fresh air, exercise, sunshine and proper diet for the treatment of this affection. It is estimated that the cost of a camp to accommodate 200 patients would be about \$75,000.

Need of New Lunacy Laws.—At a meeting of the Medical Society, held February 18, a committee appointed from the society to prepare a memorial calling the attention of the State Legislature to "the present incongruous state of our lunacy statutes, designed for the care and supervision of the insane in State asylums," made its report. The memorial calls attention to the extraordinary legislation adopted by the last Legislature, whereby a system which had been in force for over 50 years was suddenly revolutionized by displacing local boards of managers, which brought about an undesirable change in the management of public insane institutions. It charges that the new system opens the doors of our public charities to partisan politics and venal corruption. The memorial suggests that if a board of lunacy commissioners is created the power should be advisory only, and in no case whatever should it have executive power of any kind. The committee believes that the chairman of a lunacy commission should not be a medical man, as medical men of executive ability fit for such a position are very rare.

To Abolish the Coroner's Office.—The special committee appointed by the New York County Medical Association to investigate the office of Coroner and to confer with committees and other societies has made its report to the Academy of Medicine. It recommends the abolishment of the Coroner's office and says: "No one has yet been elected to the office in this city who has brought to the performance of his duties adequate knowledge of both professions (medicine and law) to give the best and most reliable results, and it is doubtful if such a person ever will be or ever can be elected." The final action of the conference was to resolve that the committees recommend to their respective associations such legislation as will abolish the office of Coroner and the duties of that office, as follows: 1. The duties of investigating the causes of death in all cases which now come under the jurisdiction of Coroner to the Health Department, which shall be authorized to organize and equip a bureau for that purpose and appoint the necessary officers. 2. The legal duties to the District Attorney's office. 3. The judicial duties of the inquest to the Magistrate's Court. 4. The duties, other than those pertaining to the inquiry into the cause of death and inquest, to the Chamberlain.

For a New Bellevue Hospital.—Dr. Brannan, president of the Board of Trustees of Bellevue and Allied Hospitals, has asked for an appropriation of \$3,000,000 for the erection of a new Bellevue Hospital. It is announced that the Board of Estimate is disposed to grant the request, or at least appropriate sufficient funds to begin the construction of the hospital. It is proposed to have the main hospital building in the center of the plot at the foot of East Twenty-sixth street. The administration building, smaller than the main hospital building, would front on First avenue with a grass plot between it and the hospital building. The insane ward, the ward for patients with contagious diseases, the tuberculous ward and the alcoholic ward will be connected with the main building by underground or covered overhead passageways. This would do away with transferring patients from one ward to another without any protection. The new hospital will have room for 1,200 patients. The present hospital accommodates about 900. The plot of ground which the hospital occupies is large enough so that the hospital can be enlarged if the needs of the city demand it.

Typhoid at Ithaca.—It is announced that the present epidemic of typhoid fever has been traced conclusively to a specific contamination of the water supply. This is furnished from reservoirs formed by impounding several large streams at a distance from the town. Upon one of these the water company is building a new dam, and a number of Italian laborers, employed upon the work, were allowed to establish their dwellings near the stream without proper sanitary precautions. An imported case of typhoid among these accounts for the epidemic. An official statement in regard to the prevalence of typhoid among the students at the Cornell University has been issued by the board of trustees. It states that no case of typhoid fever is known to have occurred among those who used exclusively the water supply of the university campus; this supply comes from Fall creek, which is a different source from the water supply of the city. No person in Sage College, in which more than 200 women students board and lodge, and which is supplied by this water, has had typhoid fever, and no case of typhoid has occurred in the families of the professors living on the campus. Typhoid fever has developed only among those students who live in other portions of the city which are supplied by the Ithaca Water Company with water from the Six Mile creek and from Buttermilk creek. The university authorities have made arrangements to enable the students to secure pure water, duly inspected. Artesian water has been placed in all the university buildings, where the students may draw it freely. Distributing stations are being established and students have been officially informed that they may have pure water free at the expense of the university if they do not desire to pay for it. To ensure pure water for the city and university not later than September 1, this year, the Board of Trustees has authorized the expenditure of \$150,000 for the establishment of a complete and adequate filtration plant. This offer has been accepted by the City Council.

PHILADELPHIA, PENNSYLVANIA, ETC.

College of Physicians.—The stipulations made by Mr. Andrew Carnegie in order that the college should receive from him the sum of \$50,000, have, it is reported, been complied with, and the gift is therefore assured. The additional \$50,000 has virtually been obtained, and efforts are being made to raise \$50,000 more. Definite action, however, has been postponed until April.

Dentist Sued for \$10,000.—A patient has brought suit in the Court of Common Pleas of Philadelphia against Dr. Barney R. Simmons, dentist, to recover \$10,000 damages. The patient asserts that one of the doctor's employes filled her tooth in such a negligent and unskilful manner that an abscess formed, necessitating an operation, which has marred her features to the extent of \$10,000. A verdict was rendered against the plaintiff.

Spiritualists Win in a Litigation Over a Man's Will.—Through a decision of the Supreme Court in an opinion rendered by Justice Potter, the First Association of Spiritualists of Philadelphia comes into the possession of an estate left to it by the late Alexander McIlroy, which amounts to \$30,000. The legal heirs of the estate had endeavored to show that during his life the dead man was insane, offering in evidence his peculiar beliefs in spiritualism. The court decided that a belief in spiritualism is not incompatible with complete sanity; hence the victory for the defendants.

Sanitary Barber Shops.—The Board of Health of Jersey City has adopted an ordinance to protect patrons of barber shops. It provides that the floors and woodwork in all barber shops shall be scrubbed at least once a week. The shop must be swept daily. No one shall sleep therein, and no skin disease shall be treated therein unless the barber be a licensed physician. Cleanliness on the part of the barber must be observed. He cannot blow short hairs from a man's neck after a haircut, but instead must use a towel or fine hair brush. Brushes, razors, combs, and other instruments must be sterilized in hot water or in a solution of formalin within five minutes after their use. Every customer must be provided with a perfectly clean sterile towel. Razors and razor strops shall not have the hands of the barber rubbed upon them nor his breath blown upon them during the process of sharpening. A penalty of \$10 is to be levied for each and every offence.

SOUTHERN STATES.

Additions to Freedmen's Hospital.—Notice of an amendment to the Sanitary Civil bill has been announced, providing \$50,000 to the new hospital buildings at Freedmen's Hospital, and limiting the cost of such buildings to \$300,000. The amendment provides that these buildings shall accommodate 300 patients. The buildings are to be designed under the direction of the Supervising Architect of the Treasury and the Superintendent of the Treasury.

Gifts to Johns Hopkins.—President Remsen, of Johns Hopkins University, at the commemoration exercises announced that Dr. and Mrs. Herter, of New York, had given \$25,000 for the establishment of a lecture course in medicine, and that this sum would enable the university yearly to invite some eminent man in the field of science to lecture to the students; and further, that a pupil of the late Prof. Henry Rowland had offered to purchase for the university a complete laboratory on the subject of spectroscopy, the cost of which will be between \$5,000 and \$7,000. The offer was made on condition that the widow of the late Dr. Rowland would give to the university all the professor's books on the subject. She has signified her willingness to make the donation. The new library will be known as "The Rowland Library of Spectroscopy."

WESTERN STATES.

Calcium Salts to Cure Nervous Diseases.—Jacques Loeb claims to have discovered that muscular and nervous diseases, such as St. Vitus' dance, paralysis agitans, locomotor ataxia, and insomnia, can be cured by the administration of calcium salts. His conclusion is that the presence of calcium salts in the muscles prevents their twitching, and that their absence leads to the various nervous disturbances mentioned; hence the administration of calcium salts as the remedial measure.

To Assist in the Treatment of Scarlet Fever.—The Bulletin of the Chicago Health Department for the week ended February 14, 1903, states that as the scarlet fever germ may be associated with those of whoopingcough, diphtheria, influenza, measles and other infections, it is important that its presence be shown by the culture and microscopic examination, and therefore in order to assist physicians in every way in the control and treatment of this disease, a bacteriologist has been provided by the department to devote his time exclusively to the examination of scarlet fever cultures, and culture outfits are furnished gratis for this purpose. Physicians can avail themselves of these facilities by sending their cultures to the city hall laboratory. Care should be taken to give complete clinical data, especially in cultures from throats in which scarlet fever is suspected.

FOREIGN NEWS AND NOTES

GENERAL.

Needs for a Hospital in Manila.—From Manila comes the news that Bishop Brent, of the Episcopal Church, has secured 6,000 signatures for a petition to the Philippine Commission requesting the establishment of a general hospital. Commissioner Ide has offered personally to subscribe \$10,000 for the endowment of free beds in the hospital. It is confidently expected that the institution will be secured.

Sleeping-sickness.—It is asserted that the mysterious sleeping-sickness which has been so prevalent in West Africa and which caused 50,000 deaths within the past year has proved to be a form of meningitis, similar to spinal-meningitis, but differing from the latter in that it is chronic and strangely fatal. It is apparently contagious but the means of contagion is as yet undetermined. The patient begins with a slight hebetude, which passes to coma and death. Thus far only negroes have been the victims and extensive areas have been practically depopulated.

GREAT BRITAIN.

Typhoid Fever in London.—The Public Health Committee of the London County Council, appointed to investigate the cause of the prevalence of typhoid fever in the city and its surroundings, have practically demonstrated that it is due to the ingestion of infected shellfish. The committee therefore recommends that a law be enacted imposing heavy penalties upon all persons depositing or digging shellfish in infected waters.

CONTINENTAL EUROPE.

Tuberculosis Investigation.—Chancellor von Buelow has sent to the Reichstag a memorandum on tuberculosis treatment, in which the following statistics gathered by the Imperial Health Office are presented: Out of 1,000 deaths in Germany of persons between the ages of 15 and 60, 316 die of tuberculosis alone. Persons under 15 and over 60 are seldom affected. The mortality of the whole population averaged 242 per 100,000

yearly, rising in the Bavarian Palatinate to 329, in Bremen to 337, and in Hesse to 314. The conditions in Germany are shown to be better than in France, Austria, and Russia, but worse than in Switzerland, Belgium, Denmark, Norway, and especially England. The Chancellor said the health office found that tuberculosis can best be treated in special hospitals, in which Germany now has accommodation for 30,000 patients. The statistics for 1896 to 1901 showed that, on the average, out of 100 patients treated, 87.7 were dismissed as cured or improved; 8.8 as no better; 3.1 as worse, and that 0.4 died.

OBITUARIES.

Thomas R. Councill, of Easton, Md., died at the Baltimore City Hospital, February 18, aged 30. He was graduated from the College of Physicians and Surgeons of Baltimore in 1894, and was for three years resident physician at the Baltimore City Hospital. He was health officer of Talbot county, Md.

D. M. Anderson, at Venetia, Pa., February 16, aged 65. He was graduated from the medical school at Ann Arbor, Mich., in 1865. During the Civil war he was assistant surgeon of a colored regiment. At the time of his death he was serving his third term in the Pennsylvania Legislature.

H. H. Hood, of Litchfield, Ill., February 20, aged 79. He was graduated from the Jefferson Medical College, Philadelphia, in 1851. He served through the Civil war as a surgeon in the One Hundred and Seventeenth Illinois Infantry.

Benjamin F. Eads, in Marshall, Texas, February 1. He was graduated from the University of Pennsylvania in 1856. He was chief surgeon of the Texas and Pacific Railway and a member of the American Medical Association.

Walter Pardee, of New York City, February 13, aged 81. He was graduated from the Cleveland Medical College in 1860. He retired from the practice of medicine in 1882, since which time he has been an invalid.

Arista O. Lucas, in New Washington, Ohio, February 3, aged 37. He was graduated from the Western Reserve University, Cleveland, Ohio, in 1891. He was a member of the American Medical Association.

Elizabeth MacFarland, of Sharon, Pa., February 7. She was graduated from the Woman's Medical College in 1901. She had served as interne in the Philadelphia Lying-in Charity Hospital.

Charles C. Bradley, in Rock Rapids, Iowa, February 4, aged 82. He was graduated from the Willoughby (Ohio) University, medical department, in 1845.

William T. Riddlemoser, of Smithsburg, Md., February 18, aged 43. He was graduated from the College of Physicians and Surgeons, Baltimore, in 1882.

John R. Burton, in Valdosta, Ga., February 7, aged 78. He was graduated from the College of Physicians and Surgeons, New York City, in 1848.

Jacob Burger, in Franklin Square, Ohio, January 31, aged 75. He was graduated from the Eclectic Medical Institute, Cincinnati, Ohio, in 1856.

Charles L. Floor, in Youngstown, Ohio, January 30, aged 44. He was graduated from the Western Reserve University, Cleveland, in 1882.

Henry W. Allan, in New York City, February 5, aged 48. He was graduated from the Bellevue Hospital Medical College, New York, in 1882.

Lucien W. Curtis, of Southbridge, Mass., died in Worcester, Mass., January 30. He was graduated from the New York University in 1848.

Ashley A. Webber, in Williamsburg, Pa., February 19, aged 40. He was a member of the dispensary staff of the Eastern District Hospital.

John P. Agnew, in Philadelphia, February 5, aged 69. He was graduated from the University of Pennsylvania, Philadelphia, in 1861.

John Ash, in Brighton, Ill., January 31, aged 84. He was graduated from the Philadelphia College of Medicine and Surgery in 1851.

David M. Browder, in Sweetwater, Tenn., February 5. He was graduated from the Eclectic Medical Institute, Cincinnati, in 1885.

George H. Gilbert, in Cleveland, Ohio, February 9. He was graduated from the Homeopathic Hospital College, Cleveland, in 1874.

Charles A. Mahneke, at Appleton, Wis., January 28, aged 55. He was graduated from the University of Berlin, Germany, in 1866.

Samuel Gray, in Laurel, Md., January 30, aged 72. He was graduated from the University of Maryland, Baltimore, in 1858.

Archibald E. Covert, in New York City, February 2, aged 82. He was graduated from the New York University in 1892.

Emmett E. Dixon, in Gainesville, Ga., February 1, aged 55. He was graduated from Atlanta (Ga.) Medical College in 1867.

James J. Scollard, of Clinton, N. Y., February 20, aged 76. He was graduated from the Albany Medical College in 1874.

Charles C. Conway, of Fredericksburg, Va., February 17, aged 70.

H. H. Warburton, at Santa Clara, Cal., February 9, aged 84.

Francis H. Bankard, of Westminster, Md., February 19.

George Harris, of Bridgeton, N. J., February 9, aged 59.

COMMUNICATIONS AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH: ITS SCOPE AND PLANS.

To the Editor of *American Medicine*:—Inasmuch as many rumors concerning the Institute have been floating through the columns of the daily press, it has been thought best by the directors to give out for publication the following statement of the work and plans. L. EMMETT HOLT, *Secretary*.

The Rockefeller Institute for Medical Research was founded in 1901 by Mr. John D. Rockefeller, who gave for this purpose the sum of \$200,000. The aims of the Institute are the promotion of medical research, with especial reference to the prevention and treatment of disease.

It was thought wise by the directors of the Institute not at first to concentrate the work in any one locality, but to enlist the interest and cooperation of such investigators throughout the country as might be engaged in promising researches or who might enter upon new fields if suitable pecuniary assistance could be afforded them. It was the conviction of the directors that in this way it would be possible not only to stimulate and foster valuable contributions to science, but also secure important practical suggestions as to the lines along which the Institute might most wisely develop.

Among the large number of applications for assistance in carrying on original studies which relate to the cause, prevention, and cure of disease, and to the problems upon which new knowledge on these subjects must be based, over 20 have been selected. The directors have secured counsel in these selections from the heads of departments or others in the Universities of Harvard, Yale, Johns Hopkins, Pennsylvania, Columbia, New York, Chicago, Michigan, McGill, Wesleyan, California, and Western Reserve; and in many of these institutions work has been prosecuted. Two of the Rockefeller Fellows have been working in Europe. Some of the workers under these Rockefeller Institute grants, which vary in amount from \$200 to \$1,500, have completed and published their investigations; some are still engaged upon them.

It is the purpose of the directors from time to time to bring together in the form of volumes of collected reprints the results of these researches, which may be published in various technical journals. An arrangement has been effected by which the Institute will assume the publication of the *Journal of Experimental Medicine*, which will remain under the editorial supervision of Dr. William H. Welch, professor of pathology in the Johns Hopkins University, and president of the board of directors of the Institute.

At the end of the first year of practical work of careful study of the situation, it became clear to the directors that existing institutions in this country, while in many instances carrying on most valuable researches in medicine, do not afford adequate facilities for many phases of investigation which are of the utmost importance and urgency. This is in part due to the lack of sufficient endowment, in part to the large demands made upon the time and energy of the workers by their duties as teachers. It was further evident that such assistance as the Institute had thus far been enabled to extend to selected investigators in various parts of the country had fostered work of great actual value as well as of high promise and should be perpetuated along similar lines.

The directors, however, were united in the conviction that the highest aims of the Institute could not be secured in this way alone. Useful as such individual studies are and important as it is to enlist and to maintain the interest of research workers in established institutions of learning, it is not possible in this way to secure the unity of aim and the coordination and mutual stimulus and support which are essential to the highest achievements in research. These are to be secured, it was believed, only by the centralization of certain lines at least of the work of the Institute under a competent head or series of heads of departments, in a fixed place, with adequate equipment and permanent endowment.

There is no lack of men of sufficient training and experience ready to devote their lives to the solution of medical problems which bear directly or indirectly upon the welfare of mankind. The widely open fields of research are many. Some of these relate to the application of existing knowledge to the prevention and cure of disease; others to the development of new knowledge along various lines of science which more than ever before give promise of great significance in the problems of physical life.

In a broad sense, the directions and methods for the study of disease may be classified as morphologic, physiologic, and chemic; and the Institute, it was thought, should include departments providing for these divisions of the subject. For the morphologic study of disease there should be a complete equipment for pathologic-anatomic research. For the physiologic study of disease provision should be made for experimental pathology, for pharmacology and therapeutics, for the study of bacteria and other microorganisms with especial reference to their relation to the infectious diseases, and for other investigations in personal and public hygiene, including preventive medicine. Here belong especially the problems of infection and immunity, and here also in large part such studies as require access to patients in hospitals. There should be a laboratory well equipped for investigations in physiologic and pathologic chemistry.

It was the conviction of the directors that such an institute might wisely add to its aims in the direct increase of the knowledge of disease and its prevention and cure, a phase of activity which should look toward the education of the people in the ways of healthful living by popular lectures, by hygienic museums, by the diffusion of suitable literature, etc. For, in fact, the existing agencies for medical research for the most part stop short of those direct and widely diffused applications of newly won knowledge upon which the immediate practical fruitage of their work so largely depends.

In order that the causes and treatment of human disease may be studied to the best advantage, it was the opinion of the directors that there should be attached to the Institute a hospital for the investigation of special groups of cases of disease. This hospital should be modern and fully equipped, but it need not be large. It should attempt to provide only for selected cases of disease, and the patients would thus secure the advantages of special and skilled attendance, and such curative agencies as the Institute might develop or foster.

It was thought that an institute for medical research of the largest promise would require a central institution, fully equipped and endowed, and with capacity for growth, in which the more comprehensive studies demanding the coordinated forces of various phases of science could be carried on from year to year, while at the same time, by means of such grants of assistance as has been offered during the initial year, it should continue to make available the resources of special workers all over the country, as well as in Europe.

In view of the above considerations relating to its future in June, 1902, Mr. Rockefeller gave to the Institute the sum of \$1,000,000 for the purchase of suitable land, the erection of buildings, and the organization of a working force along the broader lines which had been projected. It is the purpose of the directors to proceed at once to the erection of a laboratory building which will provide for the present requirements, and will be capable of enlargement as the character and extent of the work of the Institute may develop. Negotiations for a suitable plot are now under way.

A small hospital will also be built in the immediate future, which will be maintained in close association with the experimental work of the Institute.

Provision will be made in the laboratory building for research in physiologic chemistry, pharmacology, and therapeutics; in normal and pathologic physiology, and in various phases of morphology, and for the study of bacteria and other microorganisms. It is hoped that the laboratory buildings may be completed and ready for the commencement of work in the autumn of 1904.

Dr. Simon Flexner, professor of pathology in the University of Pennsylvania, will direct the scientific work when the

building is completed. His colleagues deem it of the highest importance that the Institute has been able to secure so eminent an investigator as Dr. Flexner to shape the work of its early years. Dr. Flexner will spend several months abroad while the new buildings are in course of erection.

It is proposed to organize the various sections and departments into which the work of the Institute will naturally fall so that each of them, though in a measure autonomous, will still be so closely associated as to favor the conjoint investigation of comprehensive problems. Associated with the head of each of these departments it is proposed to have a staff of trained assistants.

Provision will also be made for research work by a group of trained men to be designated Fellows, Scholars, etc., of the Institute, under pecuniary grants of varying amounts.

Finally, opportunity will be afforded to suitable investigators not members of the regular staff of the Institute to pursue special lines of research.

The directors of the Institute are:

- Dr. William H. Welch, of Baltimore.
- Dr. T. Mitchell Prudden, of New York.
- Dr. Theobald Smith, of Boston.
- Dr. Simon Flexner, of Philadelphia.
- Dr. Hermann M. Biggs, of New York.
- Dr. C. A. Herter, of New York.
- Dr. L. Emmett Holt, of New York.

The officers are:

- Dr. William H. Welch, president.
- Dr. T. Mitchell Prudden, vice-president.
- Dr. L. Emmett Holt, secretary.
- Dr. C. A. Herter, treasurer.

ETIOLOGY OF CANCER.

BY

ALEXANDER R. BECKER, M.D.,
of Seattle, Wash.

Last spring I closed a prolonged and painstaking study of cancer with two positive convictions: First, that nothing whatever was then known regarding its etiology; and second, that the cause would ultimately be found to be chemic—perhaps I should say autochemic and a result of perverted katabolism.

The theories most in vogue at that time were Cohnheim's and the bacteriologic or protozoan. The former has never seemed to me more than plausible, or at most, suggestive, for it left so many points entirely unexplained, *e. g.*, it gave no hint even as to why the "included embryonal cells" should have lain quiescent for so long a time, nor what the immediate stimulant could have been. As for the latter, while it was easy enough to find and demonstrate the "cell inclusions" by proper technic in many cases of both sarcoma and carcinoma, they were entirely absent from other quite as typical cases, and could, moreover, be found in many other instances which were positively not malignant. The really exhaustive investigations of the Harvard Medical School Cancer Committee seemed to settle that matter for good and all with no remainder; and yet this was a severe disappointment, for since the early days of the germ theory of disease—say 25 years *et sequiter*—I have been hoping that a bacterial etiology would be discovered, with a consequent cure or at least mitigant. But it was not to be, and I can quite fancy Hueppe rejoicing at that.

But now comes Dr. Homer Wakefield, of New York, with his very remarkable paper on the "Pathology of Katabolism" (*American Medicine*, November 22 and 29, 1902), with a wealth of hypothesis to bewilder the unprepared mind, but so controlled by the most advanced biochemic knowledge and clinical experience and demonstration, and keen logic, as to demand the very best and closest study of the best pathologists everywhere.

An autohyperacidity—*i. e.*, subalkalinity—local or general, causing a suboxidation, which leads to subkatabolism and then stasis in the tissues, while anabolism goes on. There is nothing dramatic about that; no bacterium to hold up to opprobrium, or from which to manufacture an antitoxin and fame and wealth and decorations. And yet, does it not portray

a really usual action of nature whereby the slightest initial deviation may lead to the most various finalities?

I shall not consider the more general of his deductions, though the temptation is great, for he shows how the general condition of subkatabolism may make the system receptive to the pathogenic bacteria, may provide the indispensable "nidus" as we should have said in the earlier days.

But he declares the malignancy of a neoplasm to be practically a matter of degree; of a superlative or prolonged local hyperacidity, which produces a coexistence of adolescent and mature and degenerating cells, of living and necrotic matter, within a circumscribed area—a confused mass, both histologically and chemically, with contradictory efforts at life and products of death, and therefore fully capable of its clinical results.

By age and habit I am averse to hasty judgment, and yet I freely admit that this hypothesis and argument has aroused my real enthusiasm. Still, it is only as one of the old guard that I venture to express myself while awaiting the dicta of the masters of pathology.

CLINICAL NOTES.

BY

J. McFADDEN GASTON, M.D.,
of Atlanta, Ga.

Distinguishing Features of the Subject.—The extraordinary increase of therapeutic agents is what might be expected with the influx of many new preparations from the coal-tar series and the stimulus to produce alkaloids from standard crude drugs by the manufacture in the form of proprietary medicine. Some practitioners hold fast to the old remedies whose great virtues have been proved, while others prescribe only the newfangled pellets. The form in which remedies are prepared to render them palatable is notable, and the pellets, tablets, capsules, alcoholic mixtures of various kinds, all prove acceptable to patients who are not willing to swallow drugs of bad taste in a crude form. A few accredited medicinal agents are found to be so efficacious as to figure in almost every prescription which goes to a drug store, while others that formerly were in good repute are no longer given.

Our concern at present is to turn to account those medicines which may aid in preventing the development of disease in its initiatory stage. After any disorder is recognized and the diagnosis is clear it comes under the province of preventive medicine and should be dealt with accordingly. Any modification of diet, hygiene, quarantine or medicinal agents which cuts off the progress of disease comes under the head of preventive medicine.

All interference in cases in which the condition is favorable should be discouraged. Inactivity is, under such circumstances, the highest order of progress and comes appropriately under the head of prevention. This principle has had a practical application in the adoption of the first dressing and the after-treatment of the most conservative measures in Cuba and the Philippines. The limited array of mortuary statistics in gunshot wounds makes a most satisfactory showing for nonoperative treatment when it can be adopted. Everything about this class of wounds must be kept in an aseptic condition and neither probe nor finger should be used in exploring the wound. It is evident that in an abdominal wound with an ordinary bullet the Röntgen ray should be used to locate the ball and that there should be no great risk in removing it, but the results have not brought the statistics below the general average of mortality in great numbers of wounds inflicted by guns and other firearms.

Ophthalmia.—If ophthalmia neonatorum is properly treated at the earliest period after the birth of the child there is reason to expect a good result, and the small percentage of failures after preventive measures are employed shows the efficacy of such treatment. Formerly the midwife applied warm salt water to the eyelids and the face of the child, and since, it has been the practice of accoucheurs to apply a weak solution of silver nitrate to the outer and inner surface of the eyelids for some days. According to recent observers, of 1,030 children treated with a strong solution of boric acid and a 10% solution of protar-

gol not a case of ophthalmia occurred. This treatment is found efficacious by European authors and by some of the best practitioners of this country. Those not having experience with this mode of prevention will be surprised to find that pus is not found and that ophthalmia fails to develop. If the ophthalmia of conjunctivitis is not arrested by the prophylactic treatment, when the disease has to be combated as a fully developed disorder, there is but little hope of saving the sight of the child.

Hence the great importance of proceeding early with the use of the antidotal applications to prevent the progress of this malady. Whatever may be the origin of ophthalmia neonatorum, we must rely upon some early prompt application to save the sight of the child, and insist strenuously upon active measures of treatment in advance of the access of disintegration. It matters little what kind of medication may be adopted after the eye has undergone a destructive inflammation and blindness winds up the prognosis. The enactment of laws to punish the neglect of due precautions requisite to arrest this disease at an early stage has been urged and should be enforced. Howe, of Buffalo, cites statistics of Kostling to show that only 9% were affected after the use of prophylactic measures, and that a minimum was reached by the Credé method.

Carbuncle.—There has been some confusion of terms in the use of the words anthrax and carbuncle, due to the fact that the latter designation has been applied to two distinct morbid processes, while the designation of the same disorder by the word charbon is recognized by others. The use of the word carbuncle by general practitioners indicates a local manifestation of a constitutional disorder or of a dyscrasia, which at the outset corresponds in its development to phlegmonous inflammation, so that it has been taken for an ordinary boil. If allowed to run its course it forms an indurated circular area with multiple apertures that discharge a sanious fluid, and finally there is ulceration with disintegration of structure.

At the primary change in the organism preventive measures avail for the arrest of the carbuncle, and the internal use of calcium sulfid with local application of silver nitrate and adhesive plaster will jugulate the disorder and prevent further development. Those not having experience with the use of silver nitrate and adhesive strips in the treatment of multiple furuncle or of carbuncles will be surprised to know that a preventive of the formation of pus exists, so that the compression caused by the strips induces a healthy condition of the tissues in a few days. It affords me great satisfaction to vouch for relief experienced in my own person. I am familiar with the treatment of carbuncle recognized by the profession when the disease is in the advanced stage, but I have not resorted to these measures when a case has been brought to my attention at an early period, as the preventive process has met all the requirements. I have been employing this prophylactic procedure for more than 20 years, with the most satisfactory results. It acts so as to abort the fibrous disintegration and to promote the diminution of pus, restoring the structures to their normal condition. An early resort to prophylaxis may be relied upon for a good outcome in preventing further progress of this rebellious disorder. It only needs a faithful trial to convince the physician of its great efficacy in warding off carbuncle at the outset of the disease.

Internal Secretions.—In the *Medical Times and Register* the modern pharmacology of calcium sulfid is discussed by John Aulde, who claims that calcium sulfid modifies cellular activity, principally through the glandular apparatus (lymphatics), acting as an obstructive when in excess in the system, or when administered in doses too large to permit the necessary metabolic changes: consequently its distinct physiologic property, long recognized to promote suppuration when given in large doses, and to arrest or diminish suppuration when administered in small doses. He deems it of the utmost importance to adopt certain preliminary measures as a means of securing its normal therapeutic efficacy within its proper sphere of action. First, it is advised to administer it with nuclein from animal sources, separately or in combination, because of the known influence of this substance as a protoplasmic regenerator. The combination embraces a wide range of usefulness and in most instances its employment conjointly with alkaline, saline medication will be attended with a happy

effect. The capacity of protoplasm for storing oxygen to release it later as may be required and if necessary in the form of oxidized oxygen or ozone should be borne in mind. In addition should be noted as a special function of nuclein to increase the number of leukocytes in the blood stream and to enact the role of protoplasmic pabulum. We may refer to its physiologic properties: lymph-glandular stimulant, antisyphilitic and resolvent. In therapeutics: suppurative conditions, boils, abscesses, carbuncles, smallpox, and catarrhal affections, bronchitis, erysipelas, cystitis, laryngitis, and skin eruptions arising from suboxidation. In addition should be noted also the appropriate collateral and alternate treatment. Internal secretion is a wheel within a wheel that serves the purpose of a balance wheel in machinery. Unless this unseen power is kept in order the entire corporeal fabric becomes deranged; but if this element is properly regulated it prevents the development of disease. All alteratives do their work without perceptible disturbance of the glands, by virtue of their effect upon the internal secretions, and for this reason are generally recognized as blood purifiers.

Malignant Pustule.—This disease resembles syphilis in the manner of its involving first a local area, and next the whole system as a constitutional complaint. Although it is observed in the lower animals it may be communicated to man by inoculation. The philosophy of the extreme virulence consists of the series of changes that are allowed to take place from the original lesion. The French have known this disease by the name of charbon, and in England, Germany, and the United States a constitutional disease has been studied which differs essentially from anthrax or carbuncle, but which has been found to have the anthrax bacillus, which, when inoculated, repeats the disease. The peculiar and apparently insignificant beginning of pustule is another resemblance it bears to syphilis, as well as its subsequent course involving so many organs and such a long period of time. Treatment should be instituted at the earliest possible moment. Having guarded against infection or contact and used disinfectants, all the prophylaxis required has not been used; for the small vesicle may appear in spite of these within 24 hours of the contact, when the skin is thin and the abrasion is sufficient. Even when the ordinary period of incubation has passed, a malignant pustule may develop later. A period of incubation exists as in syphilis and other diseases. If the disease is attacked by local measures during this period of incubation a reasonable ground of prevention may be entertained, and the disease is capable of being eradicated from the body. For this purpose the thermocautery offers the greatest advantages and should be applied thoroughly to destroy all the diseased area. In case the disease has undergone changes of a more extensive character, the secondary stages may be treated in the same manner as erysipelas, by hypodermic injections of carbolic acid and glycerin. In all of these cases there is needed an alterative and tonic treatment before any symptoms arise, and the later nervous phenomena resulting from an impairment of the capillaries and the vasomotor nerves should be prevented by the use of strychnin, electricity, massage, and many other tonifying agents.

Torpor of Liver.—Any interruption in the discharge of biliary matter, whether the cause be spasmodic, organic, or mechanical, bring serious trouble in its train. The entrance of a calculus into the bile-duct is manifested by grave disturbance of the nervous system, and phenomena are soon developed which indicate the sympathy of the whole organism with the local difficulty. At the outset rigors alternate with flushes of heat, followed by cold sweats and the most intense suffering. The ordinary acute spasmodic paroxysms of pain in the right hypochondriac region, attended with the most distressing nausea and vomiting, are familiar to every practical observer of any experience. If the transit of this mass of indurated bile along the common gallduct from the gallbladder into the duodenum is effected promptly, all the trouble passes without any serious consequences. However, if the resistance to the progress of biliary calculus is great, and the delay in the canal is much protracted, constitutional disturbance is manifested, and local inflammation in the immediate proximity of the arrested body will speedily develop.

Biliary Derangements.—Great practical importance has

been attached to the derangement of the biliary apparatus, not alone from the temporary functional interruption of the flow of bile through the common bile-duct and cystic duct, but by its arrest in the gallbladder and the formation of gallstones. In the progress of these cases, it is found that hepatic colic, attended with acute pain, accompanies the obstruction. The bile may be arrested by catarrhal inflammation in the common or cystic ducts for a short time, and yield to treatment so completely as not to leave any constriction. It is not requisite to go into further details, yet the preventive measures are so effectual as not to demand radical surgical steps. As considerable discussion has arisen over the resort to cholecystenterostomy in the event of occlusion of the common ducts, it may be stated that Dr. Deaver, of Philadelphia, has in strong terms indorsed the operation by recommending it in preference to the other procedures which have been adopted.

Appendicitis.—The vermiform appendix affords another instance of obstruction which calls for the knife to prevent further trouble, and it would seem that appendectomy is one of the most frequent operations which surgeons have to perform in these latter days. It is very evident that this class of patients have, in years gone by, recovered by general treatment without operative measures of any kind. Even at the present day some patients have been cured by medication, while others have died from the use of the knife. The consensus of opinion among the physicians and surgeons who have met cases of this nature is in favor of early operation. Remarkably good results have attended the operation, and it may be claimed that the removal of the appendix prevents the return of appendicitis most effectually.

Goiter (Basedow's Disease).—Goiter is an enlargement of the thyroid gland, depending upon the surroundings of the individual as to locality, or as to habits, and by some is attributed to eating fish or to drinking snow-water. An isolated or sporadic instance appears occasionally in females without any indication of the origin, and the complication with exophthalmic symptoms is met in connection with cardiac disturbances. There are certain regions of the world in which large numbers of both sexes and of all ages are affected and a considerable portion of the tumors are of large size. I have seen a number of goiters as large as the head of the person whose neck was affected. But for our demonstration of preventive measures the treatment must be resorted to internally and locally in the earlier stages and I can give assurance of its prompt disappearance. The existence of goiter in women is most frequently brought to the physician's notice on account of the ugly deformity of the neck and generally they insist upon prompt treatment for its removal. I find there are not often indications for special surgical treatment even in the advanced stage of disorganization of the glandular structure. My observation of the internal use of concentrated preparation of Lugol's solution of iodine in doses of 10 drops, largely diluted with water, three times a day, gradually increased to double that amount, taken before meals, is that any further development is effectually prevented. For external applications the compound iodine ointment night and morning meets the demands for relief. I have found the tincture of iodine efficacious when employed by the galvanic current in the form of cataphoresis upon the positive electrode covered with cotton, on the one side of the goiter, and the negative sponge electrode upon the opposite side of the enlarged gland. It will appear evident that the electric current is the means of carrying the medication through the gland, and the agent will render the iodine effective in accomplishing the atrophic degeneration of the glandular structure. The current need not be so strong as to be painful, and a six cell battery will serve the purpose for cataphoresis. An application for 10 minutes is usually attended with redness of the skin at both poles of the battery, and may lead to such irritation as to require that the force of the current be made weaker.

When preconceived ideas are set aside by accurate observation of facts and the patient investigation of cause and effect in the development of epidemics, we may expect the dissemination of more correct views of hygiene and the application of more efficient therapeutic measures. The discussions as to

hygiene indicate such preoccupation in favor of special schemes as to preclude a just and fair appreciation of the data presented. The vast field of hygiene and prophylaxis may well engage the best talent, and in this age of specialists it should be elevated into a special department of study. He who cures the ills that flesh is heir to deserves undoubtedly grateful recognition from those who suffer, but he who stays the access of disease should receive the high and noble praise from mankind generally in their "well done, good and faithful servant."

A COMMON CAUSE FOR MOST CONVULSIVE DISEASES.

BY

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I have been impressed with the fact that there must be some single diseased condition underlying all the different forms of convulsive diseases, or at least a series of causes of great similarity.

Last week I was called to a case of eclampsia. As I watched the convulsions I was struck once more with the precise similarity to the convulsions that I have so often seen in the epileptics who used to come for treatment to the Vanderbilt Clinic. The convulsions began in the right hand and then became general. In this case I delivered a premature child by version, and put the patient under large doses of morphia. There was only one general convulsion after delivery, and the patient is on the road to recovery.

I feel convinced that eclampsia is due to a poison which has its origin in connection with pregnancy, and the production of which often ceases after delivery. In this we have a clue, perhaps, to true epilepsy. I do not believe that localized spasm indicates necessarily that there is a local lesion in the nervous system. It simply means that there is one part of the nervous system that is more susceptible to the poison than other parts. Thus, in my case of eclampsia there was no reason why these convulsions should begin in the right arm, except an accidental susceptibility of the corresponding motor area to the poisoning.

Thus, on the other hand we see brains that are deeply scarred by injuries, and yet the patient does not suffer from epilepsy. It seems to me that all that local lesions do is to render that part of the brain more susceptible to the cause of epilepsy. Hence we must seek for the cause of epilepsy, not in the microscopic examination of the nervous system which has proved itself so barren, but in a study of the chemistry of the body and a study of toxic substances. We may find in the examination of the brain the cause of the susceptibility of a particular area but I believe there the limit discovery is reached. I have a strong impression that morphin has an antidotal action to the poison of the acute epilepsy that I have seen from time to time in pregnant women. My cases are not numerous enough to draw conclusions of great value, but I certainly have not that dread of the disease that many physicians have.

Samuel D. Gross Prize.—The Philadelphia Academy of Surgery announces that the Samuel D. Gross prize of \$1,200 will be awarded January 1, 1905. The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding 150 printed pages octavo in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens." The essays, which must be written by a single author in English, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 South Thirteenth street, Philadelphia," on or before January 1, 1905. Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

ORIGINAL ARTICLES

ARE ANTISEPTICS OF ANY VALUE IN HAND DISINFECTION?¹

An Experimental Study from the Surgical Clinic of Dr. Roswell Park.

BY

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To the man who first taught us the principles of wound infection, whether Lemar or Lister, not only surgery but the world at large owes a debt of gratitude which it can at best repay poorly. He is the bright star in the scientific firmament of today, for his work ranks first among the great discoveries of science during the past century. While Lister's idea that wound infection was due to organisms in the air was but a portion of the truth, yet it paved the way for the Germans to show that wound infection was due to germs upon anything which came in contact with the wound, whether dust-laden air, hands, instruments, or dressing. With this discovery began the history of hand disinfection. The question at once arose, How shall the skin, instruments, and dressing be sterilized? The sterilization of the dressing and instruments, through a gradual process of evolution, passed from the early method of immersing in antiseptic solutions to the present ideal method of superheated steam or boiling. The skin, however, proved a more difficult task, and although men famed in science have devoted their best energies to the solution of this problem, we are today far from an ideal method.

Early ideas on the subject were such that about all that was considered necessary was to dip the hands in antiseptic solutions. However, in 1880, Floystrop, of Copenhagen, first formally introduced the nail brush, and this was probably the first seed sown of what later grew to be the mechanical side of hand disinfection. About this time Koch discovered the germicidal properties of corrosive sublimate, and in 1882 Bardeleben first used it to sterilize the hands. From this time on this newly-made king of antiseptics has ruled the domain of surgery with almost undisturbed sway. Many have tried to shake it from its high pedestal, some advocating alcohol, others chlorin gas, and others prepared soaps, but all in vain. Although the growth of seed sown by Floystrop was retarded somewhat by the advent of mercuric chlorid, Leopold in 1887 emphasized the importance of mechanical cleansing previous to the use of antiseptics. Later Furbringer made it a part of his method, also introducing alcohol. Gradually investigators began to realize the importance of the mechanical side of the procedure, until today it has become so prominent that the whole question of hand disinfection seems naturally to appeal to us under the two heads: (1) Mechanical cleansing alone; (2) mechanical cleansing followed by antiseptics.

Let us reverse the seemingly natural order, and consider first the question of antiseptics and their value in hand disinfection.

Mercuric Chlorid.—So completely has this antiseptic taken hold of the profession that its use might almost be said to be universal. After its introduction to surgery the flattering results of cultures taken from the hands by Kummell and others made it appear as though the ideal were reached. In 1889, however, Geppert took the first step in shattering this confidence by precipitating with ammonium sulfid the mercuric chlorid which was carried over into the culture. By these experiments he showed that what was believed to be the death of the germs was simply their inhibition, as

after the mercuric chlorid was rendered inert the germs grew as before. These experiments threw great light on the true value of mercuric chlorid, but even now it is very difficult to judge, because if a sterile result is secured with any method containing mercuric chlorid (1) all of the antiseptic may not have been precipitated; (2) the mercurial sulfid formed may possibly inhibit the growth; (3) the germs themselves may be carried to the bottom with the precipitate.

One feature regarding mercuric chlorid which has long been known, but which, as yet, has not been sufficiently appreciated in hand disinfection is the fact that it possesses no penetrating effect.

EXPERIMENT I.—A sterile piece of silk is dipped in a culture of staphylococci, and then immersed in liquid fat or grease which forms a coating around the germs. It is then immersed in a solution of mercuric chlorid 1-1,000, for a period of three days. Finally it is removed with sterile forceps, washed to get rid of the fat, and planted in bouillon. Growths will appear in 24 hours to 36 hours.

EXPERIMENT II.—A surface growth of staphylococci on agar is exposed to 1-1,000 solution of mercuric chlorid for 10 days; this is then poured off, and growths washed in sterile water or, better, the ammonium sulfid solution, to get rid of the excess of mercuric chlorid. Finally with platinum wire break up the colonies and plant again on agar and growths will appear in due time.

If the usual method of using mercuric chlorid is considered in this light, one sees the absolute foolishness of using it until the outer layer of loose epidermis, fat, dirt, etc., is removed by some means. When this outer layer is removed the germs are hidden in the small crevices of the skin and glandular structures, covered more or less by epidermal cells and in such a situation what possible benefit can accrue from using a substance which not only lacks penetrating effect but also has the property of forming an inert albuminate on the skin? It is evident the germs are not reached by the mercuric chlorid, but are simply incased, as it were, by this new albuminate layer. During an operation, what takes place under these circumstances?

The alkalinity of the blood and tissues neutralizes the effect of the mercuric chlorid and under constant manipulation this outer albuminate layer is neutralized and removed, thereby allowing the pent up germs to escape into the wound. In culture experiments this same condition exists, only it is necessary to use ammonium sulfid instead of the blood to neutralize the mercuric chlorid. When this is done there are found equally as many growths as there were previous to use of mercuric chlorid. As proof of this about 30 experiments were made in the following manner: The hands were scrubbed in running sterile water, with sterile brushes and sterile soap. Four to seven sterile brushes were used about three minutes each. At this stage cultures on agar were made from each hand. Then the hands were immersed for five minutes in mercuric chlorid solution 1-1,000. Next they were washed in running sterile water for one minute and finally soaked in ammonium sulfid solution. Then from the corresponding part of the hand used before, cultures were again made. On comparing results before use of the antiseptic with those after its use there was seen no appreciable difference, showing the complete failure of mercuric chlorid to render the hands any freer from living germs.

Thus far I have considered how much of the good claimed for mercuric chlorid does it accomplish? Considering the other side of the question it seems natural to ask, How much harm does it do?

While most investigators in hand disinfection differ greatly in the final results obtained, yet all agree on one point, namely, that keeping the hands as smooth and soft as possible is of prime importance in securing good results. Bloomberg, Schleich, Gottstein, and Haegler have laid special emphasis on this point. Possibly the occasional operator, if his hands are not susceptible to irritants, may use mercuric chlorid and still keep his

¹ Read before the Surgical Section, Buffalo Academy of Medicine, December 2, 1902.

hands in good condition, but operators or nurses in a large clinic cannot possibly do so. To be satisfied on this point one has but to examine the hands of the nurses in any large clinic where mercuric chlorid is freely used, and it will be seen the hands are so rough that the epidermis can readily be scraped off with a knife. One who has seen such hands will readily realize how impossible it is to get them even ordinarily clean, not to speak of sterile. Again, mercuric chlorid breeds a false sense of security in the cleanliness of the hands. The operator, through necessity or otherwise, infects his hands, and is in too big a hurry to resterilize them properly, so he simply dips them in mercuric chlorid, and with what a sense of security he again enters the open wound! What an appeasing effect mercuric chlorid seems to have, especially if it happens to be colored blue! And yet this confidence, in spite of the fact that his hands were probably covered with blood or perspiration. But, alas! we are but human. "We are but what our fathers have been." That same confidence which, in the early days, bound our surgical fathers to mercuric chlorid binds us today so tightly that it is with great difficulty we burst those bands asunder. I believe that in living tissue the action of mercuric chlorid is so hindered by the presence of epithelial cells, fat, sweat, soap, and dirt that chemic disinfection by it is usually nothing more than a farcical show of asepsis, and in the words of Schleich, "about as much good as making the sign of the cross over an open wound."

If, on the other hand, the operator would only realize the true value of mercuric chlorid, he would be much more careful in the mechanic cleansing of his hands. Having got his hands reasonably clean after much long-continued scrubbing he would be much more careful not to infect them, knowing how long it would take to cleanse them again. I know of no one thing in an operating-room which so breeds faulty technic and so weakens the links in our chain of asepsis as the presence of a basin of mercuric chlorid.

For a few minutes let us look at some of the experimental work that has been done on this subject. Drs. Kroenig and Bloomberg have carried out some very interesting experiments, which at first sight seem quite convincing regarding the use of antiseptics. I quote from them because their work appealed to me as the strongest argument yet put forth in favor of antiseptics. They scrubbed their hands (1) by the mechanical method of Schleich (that of marble dust soap); (2) by the alcohol method; (3) mercuric chlorid method; (4) a method using mercury ethylenediamin, the trade name of which is sublamin.

After the different methods of sterilizing they injected the cultures taken from the skin into white mice. The findings were as follows: (1) After Schleich method, 13 mice, all of which died; (2) after the alcohol method, 14 mice, of which 10 died; (3) after mercuric chlorid, 10 mice, of which 5 died. In only one of these were they able to recover the organism used in the spleen and other organs; (4) sublamin, 10 mice, none of which died.

It seems to me that in these experiments there are several fallacies which if corrected might alter the result to a considerable degree:

1. Their method of removing germs to the cultures. I do not consider removing the germs with sterile marble dust trustworthy.
2. Animal inoculations, since you cannot use organisms infectious to man, needlessly introduces another factor—the virulence of the germs.
3. The resistance of white mice to tetragenous infection and that of man to pyogenic infection are two quite different conditions.
4. They maintained when inoculating animals it was unnecessary to precipitate the mercuric chlorid or whatever antiseptic was used, because the conditions were the same as in an operation. This I cannot accept, as taking

cultures from the skin and injecting them into an animal is quite different from the constant manipulation of the hand in alkaline blood as occurs in an operation. In the one case the conditions are present which render inert the antiseptic used, while in the other this does not seem to be so.

On the other hand the unreliable results obtained by mercuric chlorid disinfection has been dwelt upon by Geppert, Paul, Schleich, Schaffer and others.

Schaffer is one of the latest investigators. He placed the alcohol method first; the green soap and scrubbing second; mercuric chlorid fourth; and sublamin fifth. One of his final conclusions was that antiseptics were of very little account in sterilizing the hands.

Therefore after carefully considering the evidence for and against the value of mercuric chlorid, I believe that in it we have a substance the use of which as a means of disinfecting the hands is not only questionable but is also distinctly harmful when improperly used. Let us then rise superior to our time honored prejudices in favor of mercuric chlorid and in the strength of truth and calm sober judgment banish mercuric chlorid from our armamentarium in sterilizing living tissues.

I wish it understood that whatever I have said in regard to the inefficacy of mercuric chlorid refers only to its use in sterilizing living tissue. I consider it an antiseptic *par excellence* for sterilizing substances, such as tables, floors, etc. Here the germs are readily reached and when this is possible mercuric chlorid is one of the best antiseptics we possess.

Alcohol.—In Europe alcohol is given a much more prominent place for hand disinfection than it possesses in America. While many European investigators are loud in their praises of it, yet they all seem to be at a loss to explain the reason for the good results. At present very few make any claim for it on the ground of its antiseptic value because that has been proved to be very slight. Koch found the spores of anthrax alive after 110 days' exposure to absolute alcohol. Schaffer found that staphylococci would grow after 20 minutes' exposure. Some insist that it must be used in concentrated solutions, while others say it must be well diluted to be of any value.

Its slight antiseptic value led some to seek a more reasonable explanation of its success. These argued that fat prevented the germ from being reached by ordinary methods and consequently the good results were due to its fat solving properties. Chemists, however, say that alcohol is a poor fat solvent. This can readily be demonstrated by washing greasy hands in alcohol, when the fat is seen floating on the top. This fat solvent theory is, moreover, shown to be untenable by the fact that ether, which is a much greater fat solvent, does not give such good results.

To what, then, can we ascribe the good results of cultures taken from the hand after alcohol disinfection? Alcohol has such a hardening effect upon the skin that the germs are literally locked in, and thus it is extremely difficult to remove them to the culture. This, to my mind, accounts for most of the good results; the germs are on the hands, but are not removed to the culture medium on account of the hardening effect of the alcohol. This point, of course, is nothing new, as nearly all investigators have taken this fact into consideration in their work. Kroenig maintained that 15 minutes' washing in sterile water was sufficient to remove this difficulty, but whether this is so or not we have no way of judging. The evidence for and against the use of alcohol is very conflicting. On the one hand we have the experiments of Kroenig and Bloomberg which have been mentioned, in which out of 14 mice 10 died, and also the work of Doederlein, Schleich, and others. While on the other hand we have Ahlfeld, Furbringer, Schaffer, and others who claim this is the very best method.

However, even admitting some degree of benefit is derived from the use of alcohol, its use in this country is

almost impossible on account of the expense. Schaffer found germs in the alcohol after prolonged washing in it, and therefore insists upon using three or four basins of fresh solutions of alcohol. You will readily see in a clinic where four or six people must sterilize their hands and each one use three basins of alcohol, the question of expense becomes such a serious objection that its use in this country outside of the well endowed hospitals is an impossibility.

Cornmeal and Mustard.—To Dr. Park belongs the honor of introducing this method to surgery. I have been associated so intimately with its use in Dr. Park's clinic that I feel I can speak authoritatively in regard to the clinical results obtained from its use. Clinically it has given results in his hands which I am sure cannot be surpassed by any other method. Koch, in his excellent treatise on antiseptics, says he found the oil of mustard to be germicidal in as great a dilution as 1-33,000. The use of ordinary commercial mustard in hand disinfection depends upon the fact that when made into a paste with water the oil is eliminated. It has never been claimed for mustard that it took the place of any of the other cleansing agencies, but that it possessed a few features which gave it a distinct advantage over all others. In the first place, mustard is absolutely non-irritant, in this respect standing almost alone among antiseptics, and further the tactile sensibilities of the skin seem to be increased by its use.

I found cornmeal to be an excellent culture medium, and consequently it must be sterilized before using. It has no antiseptic value, its use being simply a sort of currycomb, in a measure taking the place of the brush. In this connection I believe it is equally as efficacious as Schleich's marble dust and the powdered glass used by some others.

I investigated this combination very carefully, because I felt if it would sterilize the hands it would be superior to the other methods on account of the advantages mentioned above. Here again, however, as in the case of all methods containing antiseptics, I was doomed to disappointment. The mustard failed to give results experimentally for the same reason that other antiseptics failed, namely, that the skin is so constituted that antiseptics cannot reach the germs. Consequently, I believe the excellent results obtained clinically are due to the mechanical scrubbing with the cornmeal. However, as a means of removing foul odors from the skin, mustard paste is almost ideal.

Regarding the other antiseptics which are extensively used in hand disinfection, it is scarcely necessary to discuss each in detail. What has been said with reference to mercuric chlorid may, for the most part, be applied to the others. Potassium permanganate and oxalic acid, chlorin gas and sublamin, all present similar objections. Firstly, they are unable to reach the germs in the deep layers of the skin; secondly, all with the exception of sublamin are so irritating to the skin that they defeat the very purpose for which they are intended; thirdly, they decrease the resistance of the tissues; and fourthly, the false sense of security offered by their use renders them distinctly harmful.

Concerning sublamin, it is too soon to form any accurate judgment regarding its value. Since its introduction by Kroenig and Bloomberg in 1900 many German surgeons have commenced using it. It is claimed that it is equally as efficacious as mercuric chlorid and at the same time has not its disadvantages: (1) It does not form an albuminate with the skin and consequently has a deeper penetrating effect; (2) it is not irritating to the skin, even in concentrated solutions; (3) it is freely soluble in water. The experiments which I carried out with sublamin were scarcely numerous enough to be conclusive even to myself, but I did find that when I followed its use by ammonium sulfid I obtained growths in every instance. Similar results were reached by Schaffer in his experiments mentioned before.

Mechanical Cleansing.—It is a self-evident fact that all other things being equal, removing germs from the hands is better than killing them and leaving their dead bodies present. All investigators of recent date are agreed that a very essential part of any method is to get rid of as much superficial epithelium, fat, dirt, etc., as possible by mechanical scrubbing. Most of them believe that something more than this is necessary, but Schleich, however, goes a step further and claims that he is able to sterilize his hands completely by mechanical means alone.

We will all agree that the simpler any method is the better it will be, and consequently if Schleich was able to sterilize his hands by his simple one act method of washing two minutes with his marble dust soap we would herald it as a great boon to surgery. However, Paul and Sarway, Kroenig and Bloomberg, Schaffer, and others have investigated marble dust soap, and were unable to secure anything like similar results to Schleich, but found the results to correspond to those obtained by common soap, water and brush. The reason for the different results is explained by the manner in which cultures were taken by Schleich, namely, using the platinum wire to remove the germs and growing them on gelatin.

While the mechanical side of this question has been emphasized as far back as Furbringer in 1887, yet it seems that it deserves even more attention than most investigators are inclined to give it. There are many apparently minor points which are really important and to a considerable extent affect the result. In the first place, sterilizing the hands is such an important procedure that it should demand our undivided attention. One cannot scrub his hands with bacteriologic exactness and at the same time tell his co-workers about some interesting case. How often has an operator begun an operation when part of his hands remain untouched by the brush, as, for instance, between the fingers! Then, again, the one who listlessly scrubs his hands is exceedingly likely to spend most of his time on the nails, giving but a superficial wash to the rest of the hand.

The first part of any method of hand disinfection after the hands are apparently clean is attention to the nails. Considerable has been written about the difficulty of sterilizing this part of the hand. One man has gone so far as to advise the nonsensical method of cleaning the subungual space with iodoform gauze dipped in carbolic acid. Now why are the nails hard to clean? Simply because of the many crevices and points difficult of access surrounding the nail. The most difficult part of all is the subungual space and common sense gives us the remedy, namely, get rid of the space. By this I do not mean trimming the nails so that they project about $\frac{1}{4}$ inch beyond the adherent part. Long nails neatly trimmed may be very pretty from the dainty society girl's standpoint, but to get such nails bacteriologically clean is an absolute impossibility. Nails should be cut so short that there is little or no space left. On examination of the nails of the operators in some clinics one would see subungual spaces $\frac{1}{4}$ inch to $\frac{1}{2}$ inch deep. What a relic of barbarism in the light of our present surgical knowledge! Nails properly trimmed are scarcely more difficult to clean than the rest of the hand. The nails themselves are smooth and the easiest part of the hand to sterilize.

Habits formed in childhood so ingraft themselves into our nature that in later years it is with difficulty we are able to discard them. Most of us were taught at our mother's knee the dirty habit of washing in a basin of water—and so today in spite of what surgical cleanliness has done to lift the veil from our eyes many surgeons still try to sterilize their hands in standing water with but one changing or perhaps not changing at all. Ordinary personal cleanliness demands that we wash in running water. Schaffer in his experiments used five different basins of sterile water, but even this is not suffi-

cient. Running sterile water is the ideal arrangement, and this can always be had, if not from a faucet, from a pitcher poured as needed by a nurse or some other disengaged person. Much better results can be obtained from hot running tap water than from sterile water not changed sufficiently often.

Brushes.—These intricate articles introduced by Floy-strop have come in for their share of criticism. It is claimed by those who are opposed to their use that they are a labyrinth of little tunnels, capillary tubes, dead spaces, and angles, and consequently are very difficult to sterilize. It is claimed further that they are contrary to general surgical principles, which insist on everything being plain and easily cleansed. These objections must be admitted, but on the other hand nothing has as yet been introduced which in any way takes their place. As substitutes for the brush, gauze, sand, powdered glass, and marble dust have each had their following. One and all have for their object the mechanical removal of germs from the skin and subungual spaces, and when considered in this light the brush stands preeminently superior to any of the others. That the brush can be sterilized is beyond question, as I have repeatedly taken cultures from all parts of it after boiling or steam pressure and invariably found them sterile.

Brushes, however, have been sadly misused. Examine the "scrub-up" room in most of our hospitals and what a deplorable sight one beholds. Some have so far forgotten the primary principles of disinfection that they use a dirty brush, one that has been repeatedly used without sterilizing. These same people have on exhibition three or four brushes for as many people to sterilize their hands, the brushes for the most part being used so long that they are useless. Then again, those are found whose consciences seem not to have entirely died and who appease it by soaking brushes in mercuric chlorid. What a blissful expression of ignorance in the presence of the surgical light of today!

Brushes should be sterilized by boiling or by steam under pressure. Then they are sterile, but to soak them in mercuric chlorid or any other antiseptic is useless. They should be placed on a sterile platter and covered by a sterile towel so placed that each brush can be readily reached without either infecting the hands or the remaining brushes. The necessity of frequently changing brushes in scrubbing the hands must be apparent to all. They should be changed three or four times during each sterilization, and therefore in a clinic where three or four people must have sterile hands there ought to be at least 12 to 16 brushes ready for use. Simply to use one sterile brush in cleaning the hands is a grave error, so apparent that it only needs mentioning to secure universal recognition. With brushes as cheap as they are today the question of expense need not be considered.

The green soap, or whatever soap is used, should be sterilized, as I have repeatedly obtained growths from the plain green soap. The soap should be placed in a wide, open, sterile bowl. How often the soap is in a narrow-necked bottle of some description, which renders it impossible to secure more soap without re-infecting the hands. In no instance should the hands touch the soap, but it should be removed as required by the sterile brush. After touching the hands, the brush must not again be put in the soap, as it is no longer sterile. One is only justified in putting his hands in the sterile soap when he is sure his hands are as sterile as the soap. To use soap in this way it is necessary to have it in the form of a liquid; the ordinary green soap can be diluted with water or alcohol.

In the clinic of Dr. Roswell Park the following precautions are taken in hand sterilization:

1. Running sterile water is used.
2. Green soap diluted with water and sterilized by heat is kept in a wide open bowl.
3. Two dozen brushes are kept constantly on hand; these are kept in a large open platter, covered by a

sterile towel and sterilized in the steam sterilizer. They are sterilized each time they are used, and three or four brushes are used for each sterilization.

4. Cornmeal is sterilized by heat.

5. Hands are scrubbed at least 10 minutes.

In my experiments, the cultures were for the most part grown upon agar. The germs were removed from the hands by means of a blade with a long stiff wire handle, so that force might be used in scraping the skin. From three to five minutes were used in removing germs from the hands, and visible portions of epidermis were removed for the culture. The usual method of making these cultures by means of the platinum wire I believe to be useless, as I have repeatedly obtained sterile results with the wire, when further scraping with the blade would give luxuriant growths. Another method found of value was that of using a sterile toothpick brought to a broad point, the end being dropped into bouillon. I mention these points because I find very little upon this question in the literature.

The chief aim of these experiments was to decide: First, whether it were possible by improved technic in scrubbing to sterilize the hands completely by mechanical means alone. Second, whether if by following this with various antiseptics it were possible either to render the hands sterile or to lessen to an appreciable degree the number of germs found on the hand.

In regard to the first question I was under the impression that by strict attention to the nails, using running sterile water, sterile soap, and frequently changing the brushes, I could render the hands sterile.

To ascertain the solution of the first question I carried out about 100 experiments as follows:

1. The hands were washed in ordinary soap and water to secure ordinary cleanliness.
2. Nails were cut short and trimmed properly.
3. Hands were scrubbed for three minutes with sterile brush, running sterile water, and sterile green soap.
4. No. 3 was repeated for varying number of times.

The length of time required for scrubbing varied. It always was over 10 minutes and occasionally reached 30 minutes. Brushes were changed every three minutes and the scrubbing was systematic—nails, backs of fingers and hands, palmar surface, and, finally, between fingers—so that no part of the hand received more attention than the other.

I thought these experiments were a fair test in deciding if it were possible to sterilize the hands by mechanical means alone. The result left no room for doubt, as I was unable to secure a sterile result in any instance. I did find, however, that the longer I scrubbed under aseptic precautions the fewer the colonies obtained. Some investigators have found an occasional sterile result after mechanical cleansing alone, but I believe this was due either to less care in removing germs from the hand to the culture or to the fact that some antiseptic had been recently used and not neutralized.

Sweating the hands seems to play a very important role. So far as I am aware it is about the most successful way of removing germs from the deep to the superficial layer of the skin. This has a very important significance, showing, first, that a profuse sweating followed by mechanical scrubbing would render the hand much nearer sterility, and second, that the operator whose hands perspire freely infects a wound much more readily than the one whose hands scarcely perspire at all. The value of rubber gloves to such an individual can scarcely be estimated.

In regard to the second question, I carried out in all about 100 experiments.

The technic was as follows:

1. I scrubbed my hands after the manner described.
2. Took cultures on agar.
3. Exposed my hands to the following antiseptics without reinfection between the scrubbing and immersion in the antiseptic: (a) Mercuric chlorid 1-1,000 for

five minutes; (b) potassium permanganate two minutes, and oxalic acid until decolorized; (c) mustard paste five minutes; (d) acetozone five minutes in a solution made by dissolving 15 grains in two quarts of water used at the end of 36 hours; (e) mercury ethylenediamin or sublimin 1-1,000 five minutes.

4. Took cultures from the corresponding part used for mechanical scrubbing.

In each and every instance, when I neutralized the effect of the antiseptic on the hand previous to taking the culture I secured approximately as many colonies as I did previous to its use. This seemed to answer the question definitely, and led me to believe (1) that antiseptics do not materially lessen the number of living germs and (2) that the value of any method depends entirely upon its ability to mechanically remove germs from the hands.

A fervent admirer of some pet method insists that his method has proved itself to be adequate because he seldom if ever sees pus. In his enthusiasm he forgets there are scores of operators getting results equally as good, using an entirely different method. To what do these men ascribe their good results? One faithful to the memory of his early education still bends the knee in fervent adoration to that former king of antiseptics, mercuric chlorid. Another whose faith in his early teaching seems to have waned somewhat, now swears allegiance to absolute alcohol; while still another insists that alcohol must be diluted to be of value. From all this antiseptic chaos emerges one bright ray of light, namely, all methods have one and only one point in common, mechanical scrubbing. Consequently does it not seem to be good reasoning to assume that their good results must be due to their one common feature, mechanical cleansing. Schleich, convinced of the truth of this, boldly invited infection by operating on pus cases just previous to clean ones, using only mechanical cleansing of the hands.

I firmly believe that owing to the peculiar structure of the skin the germs become embedded in and around the epithelial elements to such an extent that antiseptics do not reach them, and consequently their value is practically nil. In addition to this the false sense of security they offer renders their use distinctly harmful.

The vital question for the future to decide is to what degree of sterility is it necessary to bring the hands?

So many features enter into this question that at present it is impossible to answer it satisfactorily, for instance, the virulence of the remaining germs for man, the possible attenuation of the remaining germs, and the resistance of the tissues to infection. That the remaining organisms were virulent in animals was proved by Kroenig and Bloomberg, and that they are occasionally virulent in man is proved by the occasional unexplained death and the occasional suppurating wound. Concerning the attenuation of the germs on the skin and the resistance of the tissues we know but little.

While at the present time surgical results are uniformly good, nevertheless every honest operator has his occasional suppurating wound. Just so long as this is so, and we are unable to say definitely from what cause, we are in duty bound to protect that one wound by perfecting our technic in every possible particular. Consequently I believe until we can definitely eliminate infection from the hands we ought to make ourselves the more secure by encasing the hands in that which we know to be absolutely sterile—rubber gloves.

CONCLUSIONS.

1. Absolute sterility of the hands is impossible by any method.

2. There is no royal road to sterilizing the skin—nothing takes the place of long and vigorous mechanical scrubbing.

3. The longer the hands are scrubbed under aseptic precautions the nearer the approach to sterility.

4. The use of antiseptics on the skin is, at least, questionable; under the usual conditions, it is distinctly harmful.

5. When the true value of antiseptics is understood we will have cleaner hands, due to more conscientious scrubbing.

6. The use of rubber gloves, while not ideal, is the nearest approach to it.

7. The operator whose hands perspire freely ought to wear gloves in every case, regardless of all objections to them.

In closing I wish to express my gratitude to those connected with both the surgical clinic and the Gratwich Laboratory for the many courtesies shown me in this work.

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CHRONIC SPHENOID ABSCESS.¹

BY

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While the comparative inaccessibility of the sphenoidal sinus and the difficulty often encountered in endeavoring to recognize pus collections in this locality either alone or in conjunction with that of the other nasal accessory sinuses have seemingly rendered chronic empyema a rare affection, yet careful necropsies have shown that it is more frequent than is usually considered; its clinical rarity resulting from the often indefinite symptom-complex and the resultant treatment of the nasal obstruction and suppuration as a cause and not a result. Undoubtedly many cases of sphenoidal sinusitis are treated as nasopharyngeal catarrh, while in case the other sinuses are involved the symptoms are overshadowed and not recognized, or as aptly phrased by Lermoyes, "Sphenoidal sinusitis is not rare, only the diagnosis is rare."

In order to obtain a better appreciation of the symptoms and their individual value as factors in the diagnosis and treatment of the condition, it is necessary to keep in mind the relation of the sphenoidal sinus to the nasal chambers, to the nasopharynx, and to the cerebral cavity. Originally the upper posterior portion of the olfactory fissure, it is rudimentary or absent during early childhood, but develops and increases in size commensurate with the other accessory sinuses. Usually it is separated from the posterior group of ethmoid cells by a common wall and is of irregular shape, often with communicating smaller sinuses on one or both sides, while it extends from about 6 mm. back of the vomer in the nasopharynx, forward to the cribriform plate of the ethmoid bone; a portion of the lateral walls of the sphenoid forming in part the inner wall of the orbit.

¹ Read at the Allentown meeting of the Pennsylvania State Medical Society, September 16, 1902.

The most dependent portion of the sinus is on a horizontal line drawn anteroposteriorly through the nose and cutting the sphenoid bone at its junction with the lower border of the vomer, while above lies the cranial cavity, separated from the sinus only by a thin paper-like wall, often containing dehiscences covered only by the brain membranes, and in immediate proximity lie the optic nerve and chiasm, the internal carotid artery and cavernous sinus. The intimate relations, therefore, both with the nose and nasopharynx inferiorly and with the cranial cavity above, render the sinus of considerable import in the presence of suppurative processes here. Especially is this so on account of the nature of its walls, as the anterior, upper and lateral, are thin and compact, while the posterior and inferior walls are thickened by the addition of a layer of spongy osseous tissue.

As regards the presence of serious complications of sphenoid empyema, the superior wall plays the most important part, while in its relation to the nasal chambers and surgical aspects the anterior wall is preeminently of the greatest import. The anterior wall presents two features of paramount importance in this connection, the first, that through it the interior of the sinus may be gained, and secondly, it contains the natural opening for the drainage of the sinus. From the nasal spine to this wall, which is rarely more than 1 mm. or 2 mm. in thickness, measures about 7 cm., while the ostium sphenoidale is usually from 6 cm. to 8 cm. from the inferior rim of the nostril. Generally situated close to the nasal roof and nearer to the lateral wall than to the septum, it is often possible to enter it with a slightly curved probe, the opening in the bone being larger than that in the mucous membrane, as the latter often reduces it to a mere slit. In its relation to the turbinated bodies the opening is to be found above and behind the posterior end of the middle turbinal, and in 50 specimens Holmes found that in 39% it was possible to enter the sinus with a probe, while in 61% it was impossible. Very rarely, however, can the opening be seen, and then only in cases in which the nares are unusually patulous, the turbinals small, and good illumination is obtained, while in an occasional case of atrophic rhinitis it can also be seen and easily probed.

While the symptoms may be severe enough to lead one to anticipate a fatal termination, such is not commonly the case, and it has been my experience that such grave symptoms are quite unusual. Of all the symptoms, not one is as constant as the presence of pus in the olfactory fissure; the posterior ends of the turbinals, especially the middle, is covered with greenish crusts, and when these are removed fluid pus is found beneath, while the tuberculum septi is also difficult to recognize on account of being covered with the dried and inspissated pus. In the majority of cases that I have seen, the purulent discharge was most prominent high up posteriorly near the roof of the nose and between the middle turbinal and septum on but one side. A certain amount of pus always flows into the anterior nasal chamber, while another portion, if the discharge be profuse, flows into the pharynx, where it is apt to crust, sometimes this being the most annoying feature of which the patient complains. In addition to the presence of inspissated pus in the vault of the pharynx, and especially when it is most marked on one side, a significant symptom is the flowing of the purulent material down the posterior wall of the pharynx and which on examination can be traced to the body of the sphenoid bone and into the posterior nasal chamber. The choana on one side is apt to be blocked on arising in the morning from the pus which has accumulated during the night, and in the efforts to remove it nausea and even vomiting may be produced. The effect of the retention of the pus is shown by the exacerbation of the symptoms, and when the drainage is completely blocked grave evidences of meningitis may develop, while the

duration of the disease is at the same time protracted by the irritation of the retained degenerating pus products. While the purulent discharge is most annoying to the patient and while occasionally the symptoms of atrophic rhinitis may develop, even accompanied with ozena, yet the odor is rarely perceptible to any one but the patient, and then when noticeable is usually accompanied with partial anosmia and disturbance of taste from the closure of the olfactory fissure, both by the pus and the swelling of the mucous membrane.

Next to the purulent discharge pain is the most constant symptom, and while it may be variable in site and character as a dull, diffuse headache or neuralgic in character and localized, it is from time to time present in every case in which drainage is at all interfered with, and I believe is often quite accurately localized by the patient in the sphenoidal region. When neuralgic in character it may involve the supra or infra orbital nerves, or even the entire distribution of the fifth nerve, usually on one side, and may then become intermittent, or when necrosis is well marked constant in character. The patient is very apt to refer the pain to the center of the head and complain of stiffness of the neck, the former being intermittent in character and when very severe may produce nausea and vomiting, while should the purulent discharge cease entirely from closure of the sphenoidal opening the severity of the pain becomes greatly augmented and presents the constant throbbing characteristics of abscess formation, and sleep becomes impossible.

The objective nasal and pharyngeal symptoms are quite constant, the root of the nose is somewhat swollen and broader than normal, and the nasal interior shows the well-marked changes of chronic rhinitis. The mucous membrane, especially of the middle turbinal, is hypertrophic and swollen, and polypoid degeneration may be partially in evidence or even well formed polypi may be present, but usually connected with a complicating sinusitis, especially of the ethmoid cells. The membrane of the posterior part of the septum is also swollen, adding to the closure of the respiratory cleft and enhancing the difficulty of breathing through the affected side, while if the sinus becomes much distended this is additionally increased by its encroachment upon the postnasal space. The pharynx presents nothing characteristic of the sphenoidal affection, but the posterior wall is red, dry and glazed from the destruction of the epithelium by the constant presence of the pus and the results of the impairment of respiration subsequent to the nasal obstruction.

The ophthalmic symptoms when present are of interest as indicating the serious phase of the disease by the development of increasing pressure and the extension of the pus collection. With the extension of the inflammation anteriorly associated with venous alterations, photophobia, turgescence of the lids and conjunctivas may develop, with the later appearance of restricted motion of the eyeball, strabismus, ptosis and even exophthalmos from the development of a serous exudation into the cellular tissues of the orbit, or from an extension of the pus forward and the development of an orbital abscess. More frequently, however, the necrosis and pressure is exerted upward and sudden blindness ensues, which may become permanent, as in a case of Sanford's, in which the patient became blind from the sphenoid abscess a number of years before death ensued, while again it may be but temporary, as in a case reported by Holmes, of blindness of the left eye and later recovery of vision by the liberation of pus from the sinus. The pressure on the optic nerve may be only sufficient to lead to partial impairment of vision, or it may be complete with typical choked disks of optic neuritis, while the amaurosis is peculiar, inasmuch as it comes on suddenly, often developing within a few hours, and the peripheral field of vision is invaded before the central field is affected.

Were all cases of fatal meningitis subjected to autopsy it would undoubtedly be found that the intracranial complications of sphenoidal abscess were much more frequent than is generally supposed, as in quite a number of reported cases the meninges became infected or there was thrombosis and suppuration of the cavernous sinus with fatal hemorrhage; the most frequent fatal termination, however, being that from a consecutive meningitis.

As an illustration of the symptom-complex of sphenoidal abscess without ophthalmic or cerebral complications, the following case presents a typical picture:

T. D., male, aged 28 years, was first seen on March 9, 1901, when he complained of a purulent discharge from the nose and pharynx and an intolerable headache, which had compelled him to cease work. With the exception of measles during childhood he had never been ill, and his physical condition was excellent. From his fourteenth year he has suffered almost constantly from a dull headache, which he locates in the middle of his head below the vertex, and from this time until his twenty-fourth year severe attacks of headache would occur from two to three times a week. From this latter age until the present time he states that the pain in the head has been constant and always located in the same position, far back at the top of the nose and immediately under the center of his head. There is a thick, yellow, purulent discharge from the nose, somewhat limited in quantity, which has been present for about four years, but previous to this the nasal discharge had but little color and was watery in character, at times being profuse, while at others it was scanty or entirely absent. For certain periods, often so long as three weeks in duration, the discharge would cease entirely or be greatly diminished in amount, and then the localized headache would increase in intensity until he was incapacitated and was unable to sleep on account of the severity of the pain. This would last from three to five days, when a free purulent discharge would ensue, a portion of the pus escaping from the nose, but the greater part would run down the pharyngeal wall, and the intense headache would cease, to disappear entirely if the discharge was profuse and long continued, but if it became somewhat scanty or inspissated a dull pain would continue and remain until retention would again take place.

Examination showed the pharynx and nasopharynx to be sclerotic, dry and red and with the mirror a small amount of pus could be seen high up on the posterior wall coming from the location of the sphenoidal sinus. The nasal septum was red and congested, especially at its posterior and upper aspects, and the middle and inferior turbinals were much congested and bright red in color, but were readily reduced in size by the application of a solution of the suprarenal gland. After the swelling had been reduced in this manner the location of the sphenoidal opening could be fairly well ascertained by tracing the pus covering the posterior part of the middle turbinal upward and backward, and no difficulty was experienced in inserting a silver probe into the sinus through the natural opening, although the tissues of the base of the sphenoid and in the canal of the sinus were much swollen and inflamed. The probe was allowed to remain *in situ* for a few minutes and on its withdrawal quite a profuse flow of pus ensued which continued for several days with almost complete disappearance of the headache. This favorable condition lasted for three days, when the flow became scanty in amount and a severe attack of headache ensued, not so bad as it had been, however, and it lasted but a few hours, when the pus again discharged with complete relief from all pain.

The nose was kept fairly free from pus with cleansing solutions and with a long cannula the sinus was washed out at intervals of two to three days with a warm saline solution. This was continued for two weeks with relief from all of the symptoms, when there was again a temporary cessation of the discharge and severe pain of several hours' duration; other than this the headache was greatly diminished in intensity and for the better part of the time entirely absent. On account of the hyperemic condition of the mucous membrane covering the anterior wall of the sinus, it was impossible to cleanse it thoroughly or to ascertain accurately the condition of its walls, but a few weeks later the parts had more nearly approached the normal and under the frequent application of a solution of adrenal gland it was possible to explore the sinus, and denuded bone was found in small quantity on the anterior wall around the opening. This was removed with hook and curet, the opening was enlarged to provide for free drainage, and for several months after this he was free from severe attacks of pain, while the dull ache would be present at times, but never severe enough to cause him to complain. Whenever the sinus was irrigated, although but a small amount of solution was used at each washing, pain was always produced identical with that caused by retention, but it would immediately disappear so soon as the fluid was withdrawn. Two months later and under continuous treatment he no longer complained of pain, except an occasional dull ache of a few hours' duration; the nasal condition was normal except for some congestion of the middle turbinal, which readily disappeared on the application of supra-

renal solution, and the discharge of pus had entirely ceased, being replaced by a serous fluid.

While this case presented evidences that made the diagnosis of sphenoidal abscess readily recognizable, such is not always the case and is rather the exception than the rule. While suppurative conditions of the nasal accessory sinuses have a number of symptoms in common it is especially the posterior group of ethmoid cells which differs but little in its symptomatology with empyema of the sphenoidal sinus. Lennox Browne has classified this most clearly when he divides the signs of sphenoidal suppuration into the presumptive, such as pain and ocular disturbance; the probable signs, as the presence of pus between the septum and middle turbinal; on the superior and middle turbinal; on the vault of the pharynx and by changes in the olfactory fissure as bulging in its depth and the presence of mucous polypi; while the certain signs are the presence of pus flowing from the sphenoidal ostium, the location of the source of the pus by an exploratory catheterization, and finally an exploratory puncture. Practically the recognition of this affection depends upon the presence of pus or mucopurulent secretion obtained from the ostium, or through an artificial opening in the anterior wall, and as empyema here is associated more or less with the same condition of the other sinuses probing and aspiration must be considered the final tests of a complete diagnosis. With the symptoms in part or whole present in a given case as previously enumerated the diagnosis at first resolves itself into one of exclusion by the elimination of disease of the other accessory sinuses, and should there be an empyema of one or more of these in addition to the sphenoidal affection the problem becomes a most complex one and considerable study will be required before it can be solved.

When the nasal fossa is patulous and the rhinopharynx will tolerate a mirror much has been gained in the recognition of the affection, but usually the reverse is the case, as the posterior end of the middle turbinal acts as an obstructing body and will have to be removed before the conditions become favorable for the detection of the source of the purulent discharge. By exploration with a probe or a delicate bulbous sound it is sometimes possible to penetrate the anterior wall safely if it be necrosed and detect the presence of pus either adhering to the probe or following it through the puncture which has been made; most scrupulous care, however, should be taken in making an exploratory puncture on account of the danger of penetrating the superior wall in the region of the sella turcica and it is advisable in these difficult cases, in which the olfactory fissure is in great part obstructed, to avoid operative procedures of any nature until a portion at least of the middle turbinal has been resected and visible evidence of pus in the suspected locality has been obtained. Usually, however, the sphenoidal opening can be found by passing the probe backward along the middle turbinal, but often the stoma is situated higher and more laterally and it will be necessary to curve the probe outward and seek for the opening above and external to the posterior end of the turbinal body. Should pus follow the withdrawal of the probe of course the diagnosis at once becomes established, but in the absence of such a sign it is well to insert a slender cannula into the opening and with a weak antiseptic or saline solution endeavor to dislodge any inspissated pus that is probably present. In using either the probe or cannula, and especially the former, for diagnostic purposes, care should be exercised that the middle turbinal be used as a guide in its introduction, for if it should be held too much in the vertical line and too near the anterior end of the turbinal the dangerous area marked by the nasal roof is apt to be encountered and serious consequences may ensue, but by elevating the tip of the probe just posterior to the center of the turbinal this danger is entirely avoided.

When the pain, as in the case here recorded, is con-

stantly or mostly limited to the sphenoidal region, it becomes a valuable feature of diagnostic import, but in the majority of cases that have come under my observation this localization was the exception rather than the rule, and more frequently the pain is referred to the various parts of the trifacial nerve, and instead of aiding only renders the diagnosis more difficult. Finally, as a complex of symptoms, the discharge of pus into the postnasal space, deepseated pain in the head, sudden blindness, exophthalmos and strabismus, would indicate disease of the sphenoidal sinus, with a possible involvement of the posterior ethmoid cells.

It is not desired here more than to outline the usual method of treatment of this condition, and while the principles involved embrace the free drainage of the sinus and the cleansing of the parts, there are three methods by which the sinus may be entered, (a) the natural intranasal route; (b) through the frontal sinus; and (c) by way of the maxillary sinus. It is only the usual method of treatment, that through the intranasal route, that I will mention, and although the treatment is essentially surgical, at least as regards the question of drainage, the local topical treatment bears an essential part in any success that may be obtained. In but a small number of cases, and then but rarely, the method advocated by Furet may be used when, in addition to the sphenoidal suppuration, there is a maxillary sinusitis; when the sphenoidal sinusitis is complicated with cerebral involvement, and rapid and thorough operation is required; and in individuals with narrow or deformed nasal fossas through which it is impossible to reach the sphenoid. This method consists essentially in entering the sinus through the maxillary antrum, which is opened by the Caldwell-Luc operation, and the nasal wall is excised back to the sphenoid, into which a large opening is made, and the parts are then treated as indicated by the conditions present, the wound finally being packed and sutured.

If the sinus can be probed or an opening made in the anterior wall below the natural stomata without removing the middle turbinal, this preliminary procedure can be dispensed with, but usually the posterior end at least will have to be removed, both to enable one to obtain sufficient room to open the sinus properly and also to allow of free drainage. Should polypi be present, they must be removed, and the nasal fossa should be made as clear as possible by the correction of irregularities and the reduction of inflammation; under these conditions the opening of the sinus does not present any special obstacles and becomes much easier than is generally supposed. With patulous nares, the next step is to evacuate the pus through the natural opening, or if this is not feasible, to make an artificial opening as near the floor as possible. The opening should be made in the anterior wall with a gouge, sharp hook, etc., and but little force is required, as the wall in this situation is quite thin; the best place to open the sinus being near the median line or almost against the vomer, and about 6 mm. above the point where the inferior border of the vomer articulates with the sphenoid bone. When the wall is resistant, it may require drilling, and then great care should be exercised, while the distance from the anterior wall of the sinus to the edge of the nares should be carefully measured and a sufficient distance allowed on the drill to insure penetration of the wall without danger. After the opening has been made, it should be enlarged toward the floor of the sinus, and as it has a strong tendency to contract and greatly diminish in size, it should be made sufficiently large to counteract against this and allow of free drainage.

The sinus is then irrigated with a weak antiseptic or normal saline solution, the latter being preferable, and the mucosa of the interior is treated as indicated either with a weak trichloroacetic acid or zinc chlorid solution. If the mucosa of the upper and external walls is diseased it is treated with the solutions mentioned, while the

other portions of the sinus are cureted gently as no risk with careful handling is involved here, the cureting of the anterior wall and floor often producing beneficial results without further treatment. The parts are then irrigated after any necrosed bone has been removed, so far as safety will permit, and as the necrosed area is usually on the anterior wall it can be removed with perfect safety, while the sinus may be packed with iodoform gauze, but it has seemed best in my experience to obtain drainage by gravity and omit packing. So long as there is a discharge of pus, irrigations are continued, daily at first and gradually increasing the interval until the secretions come away clean, while if the tissues are unduly sensitive, thorough cocainization may be required for a few days, but this is not usually necessary after the sinus has been freely opened. Usually the operation is followed by prompt relief from the pain, and in the majority of cases that have come under my observation no especial difficulties have been observed in their treatment, while usually the suppuration has been more easily controlled than that of the ethmoid cells, especially when that of the latter is extensive.

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CHRONIC DIARRHEA.

BY

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When the chyme passes the ileocecal valve and enters the colon it is fluid in consistency and gradually, as the contents are propelled along the large intestine the watery elements are withdrawn and the feces assume solidity. This is constant in health and unless the quantity of fluid feces entering the colon is unusually large, or the colon itself diseased, the anal extremity of the bowel is not called upon to permit the discharge of any but solid feces. When, however, the colon is affected by disease which interferes with its function of absorption, or which renders that function impotent through increased peristaltic action, diarrhea results. It follows therefore that chronic diarrhea implies chronic colonic disturbance, which, I believe, is always inflammatory in its nature. For this inflammatory condition of the colon a variety of causes are assigned, some of them acting primarily upon the lower bowel, but in most instances it will be found that sufferers from chronic diarrhea either have or have had some digestive disturbance; that is, interference with the digestive activity of the stomach, the liver, or the pancreas.

The function of the liver in digestion is apparently not very important. So far as known its influence is indirect, affecting chiefly the products of digestion and without power to change either the proteids into peptone, or the carbohydrates into maltose, but entering perhaps into the emulsifying and digesting of fats.

The stomach has for its prominent function the changing of nitrogenous bodies into peptone, and possesses besides an active milk-curdling ferment and one exerting some influence over fats. The gastric juice except as modified by active saliva has practically no effect upon starches and sugars. Its action is not always complete, even upon proteids, against which the main digestive energy of the stomach is directed, and much of the albuminous food ingested passes through the pylorus only partially changed, to be rendered completely absorbable in the bowel through the agency of the pancreatic juice.

The pancreas secretes a fluid upon which falls the brunt of digestive work. Proteids, carbohydrates, and fats, all are subject to its influence and are completely changed into substances capable of being absorbed. At

times, and not uncommonly, the pancreas is the sole digestive organ at work, the stomach for one cause or another failing to produce any gastric juice. Even then there is no deterioration of health if the case is uncomplicated, but if to the failure of gastric secretion, and indeed, even to normal gastric secretion, there is added pancreatic disturbance the general health begins to fail and bowel symptoms manifest themselves. Secretory changes in the digestive organs do not arise spontaneously but are dependent on many causes.

Very little accurate knowledge exists bearing on the nerve mechanism which governs the secretory activity of the stomach, liver, and pancreas, but if one may judge from the large number of cases of faulty digestion of apparently nervous origin and explicable by no other theory, the existence of such a mechanism is certain and its influence of great importance. It is more than coincidence that a large portion of cases of chronic diarrhea occur in persons who lack nerve stability.

Besides nervous influences, other causes exist to prevent digestive secretion, for the organs concerned are subject to organic changes which affect either the gland structures themselves or produce obstruction of their excretory ducts. Very often the primary focus of such change is in the stomach or adjacent bowel, some catarrhal condition there, extending so as to include the liver and pancreas. Indeterminate efforts have been made to attach etiologic import to bacteria.

The onset of chronic diarrhea is usually insidious, although the initial symptoms may be more or less acute. It is not uncommon for the laity to look upon loose bowels as a sign of health, and consequently the beginning of the trouble may pass unnoticed; and it is not until diarrhea becomes severe, or digestive symptoms or failing health develop prominently that advice is sought. Usually the patients are under weight, although not necessarily emaciated, for many obese individuals suffer from chronic diarrhea. The appetite is often good and the tongue clean, and frequently it is fissured. Nausea and vomiting occur in a minority of cases; belching of gas is more common; bloating and heaviness after eating is very frequent; but decided gastric pain is unusual. Heartburn and sour eructations occur if hyperchlorhydria is marked. The epigastrium is tender, and gastric secretion, while not uncommonly presenting an excess of acid, in the majority of instances is under the normal in digestive activity. The percentage of cases of chronic diarrhea occurring in achylia gastrica is very large. Mucus is nearly always a marked feature of the gastric contents. The bowel symptoms stand out prominently. Two to four or five movements a day is the usual number. They occur mostly or even entirely in the morning after rising, and not at all at night unless the case is very severe. The total amount of material passed is very large, while the character of it varies greatly. The first movements are formed perhaps, or mushy; the succeeding ones grow progressively more watery and smaller. All contain mucus, and the final one may consist entirely of it. Occasionally the passage assumes the form of small mucus-covered balls lying in a quantity of liquid composed of water, shreds of mucus, and granular fecal matter. The color, like the number of the stools, is variable, being light brown or yellow as a rule, but at times growing quite dark or almost white. These differences occur in each patient from day to day. It has been assumed that the usual light color of the stools is due to faulty bile-production, and while this no doubt is true to a degree, the fact must not be overlooked that at least two other influences are at work. These are, first, that the healthy bowel contents are lighter in color at the inlet than at the outlet of the large intestine, showing that darkening must in some way be connected with colonic retention, and when transmission through the colon is rapid, as in diarrhea, the change to darkness has not time to occur. The second influence is that the presence

of excessive amounts of fat causes the feces to assume a yellow color, furnishing another reason for believing a defective pancreas commonly causes chronic diarrhea. In cases in which the inflammatory action has produced ulceration, or in which it is more intense, blood appears in the stools. Food particles appear in various degrees of digestion, sometimes being plainly visible to the naked eye, but more often showing only through the microscope. Gas passes from the bowel in excessive amount, being sometimes foul and sulfurous, and sometimes without odor. Microscopic examination of the feces almost invariably detects undigested food particles. At times starch granules, meat fibers and fat crystals, may all be found at the same examination, while again but one of these can be noted. Most frequently fat crystals appear, next starch granules, and least frequently meat fibers. Fermentation tests develop an excessive amount of gas.

The skin about the anus is at times excoriated from the irritation of acrid discharges, and some cases are attended with a constant leakage of thin mucus through the anus. The sphincter ani is tight and hypertrophic in cases of long standing. Inside, the rectum is found red and coated with mucus, and ulcers often are detected. Soft feces can be seen passing from the sigmoid into the upper rectal chamber, and at times the mucous membrane of the sigmoid is prolapsed into the rectum.

Inspection of the abdomen generally shows marked bloating, while palpation discovers a diffuse tenderness most marked about the epigastrium, and over the line of the colon, particularly at the cecal region and over the sigmoid. Very often the cecum can be felt as a rounded mushy resistance, and the sigmoid contracted and in spasm can be followed for several inches. Even the transverse colon can occasionally be traced by touch. The urine shows nothing characteristic. The specific gravity is often high (1,020+). Indican may be present. The subjective symptoms are numerous, indefinite, and variable, consisting of a feeling of exhaustion, evanescent pains, a state of general nervousness, lack of energy and ambition, and the like. There is no rise of temperature.

The prognosis of chronic diarrhea is, in my experience, not so bad as one might be led to believe from the statements in some of the textbooks. Many patients are cured entirely, more are benefited to such a degree that so long as they are careful of their diet and manner of living they have no symptoms; while others, careless of treatment, live on indefinitely, troubled only by the inconvenience of their disease. A small proportion, and this usually among the neglected or poorly treated patients, goes from bad to worse, and finally dies from chronic diarrhea.

Treatment for this condition requires careful attention to detail, and persistence. The indications are two—to correct the digestive fault which has been primarily the cause of the trouble, and to repair the damage that has already been done. Of prime importance are the questions of diet and hygiene. The diet must be strict and carefully selected, with reference to idiosyncrasy, state of gastric secretion and microscopic examination of the stools; careful attention must be given not only to the kinds of foods allowed, but also to the mode of their preparation. In severe cases it may be necessary to restrict the diet to milk alone, or to egg water, in other cases it will answer to cut off those foods that are generally conceded to be difficult of digestion, while all grades occur between these. Irritants, such as pepper, mustard, vinegar, and the like, are not permissible; foods leaving bulky waste after digestion, such as fruit, cabbage, and so on, are inadmissible, while cold or frozen foods, like sodawater and icecream, must be prohibited. Dishes prepared by cooking in fat, as all fried articles are, and those having fat cooked in them, as in pies and cakes, are also to be eschewed, while pure sugar may often be allowed in small quantity with foods.

Of drinks in common use, tea on the whole is the best, cocoa and ginger ale are allowable, and when alcohol is desirable Tokay wine or good brandy should be preferred.

Under the hygienic measures should be included the use of water externally, rest, exercise, massage, travel, and residence at health resorts. Bathing is important, and should be indulged in daily, and one who chooses to individualize will find advantage now in one method of application and now in another, until he has applied every variety of bath at his command.

As to rest, it is advisable to place patients having severe cases in bed and to keep them there perhaps for weeks. Patients having milder cases may be advised to retire to bed early and remain there late in the morning, resting a while again during the afternoon. Between times light exercises should be employed, those being chosen which do not cause strain on the abdominal muscles or increase the intraabdominal pressure. Exercise must always be graded cautiously to the endurance of the patient and with the knowledge that if he is allowed to go beyond that point much harm will result. When massage is employed the abdomen is to be exempt. I have known blood to appear in the stool from a failure to appreciate the advisability of this.

Mere travel is to be deprecated as a therapeutic measure in cases of chronic diarrhea. The strain of looking after one's belongings and the irregularity of living are not such as to bring that equanimity that is so necessary for the peaceful working of the various bodily functions, yet sea voyages are of value in this respect, and when there is combined with the travel a residence at some well equipped health resort which offers opportunities for obtaining the other means of relief, the conditions are the best possible.

Mineral waters are of advantage, those containing calcium salts being the most generally useful. Hydrochloric acid as an aid to gastric digestion and as a stimulant to pancreatic and intestinal secretion is frequently of great value and the bitter tonics, particularly nuxvomica and calumba, serve a good purpose. As a rule preparations of arsenic are not well borne, and alteratives on the whole are not of much value. It is useless to prescribe iron for the anemia while the diarrhea continues. Nonabsorbable oils, particularly castor-oil and less effectively the petroleum preparations, are of advantage in soothing the inflamed bowel. Injections of boric acid, of silver nitrate, oily preparations containing other medicaments, such as iodoform and bismuth, are of great value, while ulceration within reach of the proctoscope can be treated under the eye by stronger applications as the conditions demand. In severe obstinate cases, when ulceration of the colon is located high up, the establishment of a temporary artificial anus on the right side has been proposed.

CANCER STATISTICS IN THE TWELFTH CENSUS OF THE UNITED STATES.

BY

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Probably the one statement in the report regarding the subject of cancer that will excite the most concern is this: "In comparison with 1890 there was a decided increase in the deathrates due to cancer and tumor, from 15% in the cities in the registration States to 27% in the rural districts." This bare statement is certainly cause for alarm. But searching further through the report we find other statements which are deserving of much attention in connection with the foregoing.

The table on page 79, Part I, "shows a very regular decrease in deathrate at each age up to 60 years, and an increase in the rates at each age above 60." Page

112 gives a table showing the number of deaths from certain causes in the registration area per 100,000 of population, and from this table it will be seen that the increase was confined to the following causes: pneumonia, heart disease, diseases of the kidney, apoplexy, cancer, old age, influenza, diseases of the stomach, peritonitis, suicide, septicemia, diabetes, burns and scalds, cerebrospinal fever, and gunshot wounds. All others decreased. "This table also shows a very close correspondence in the relative proportions of deaths from these causes in the United States as a whole. They indicate an increase in the relative mortality from diseases most frequent in adult life and advanced age, and a decided decrease in mortality from diseases incident to infancy and youth."

Page 115: "The greatest increases in the rates per 100,000 of population occurred in disease of the kidney (24), influenza (17.7), apoplexy (17.6), heart disease (12.2), cancer (12.1), and old age (9.1). Increases from these conditions were greater in the rural districts than in cities."

Of these six diseases the census report curiously reduces to terms of percentage only the figures showing the increase of cancer and tumor. This is especially misleading. If we reduce all these figures to terms of percentage we have the increases as follow: Disease of the kidney 40%, influenza 28.5%, apoplexy 36%, heart disease 10%, cancer and tumor 23%, old age 20%. Thus we see that it is necessary to reduce all deathrate increases to the same terms for proper comparison.

We have reduced the increases both to terms of 100,000 population and also to percentages, and they both show that the opening statement, that there is a decided increase in the deathrate from cancer and tumor, loses most of its force. It is alarming when taken alone, but when compared with the other diseases is not particularly so. Proceeding to those portions of the report which treat more in detail regarding each disease we find many points of interest when we compare these diseases which "are most frequent in adult life and old age." In the following tabulation we will not include diseases of the kidney, as there is nothing in the brief report which has not already been considered.

Summarizing this table we notice a close similarity under the different heads among these five diseases.

They are most frequent in rural districts and least frequent in cities. The highest proportions are among the foreign whites. The registration States are much the same for both the highest and lowest proportions. The mothers were born mostly in the same countries both for the highest and lowest proportions. The mothers of whites over 60 were born mostly in the same countries. The greatest mortality was after 65 years of age. They all have in a very striking way the same geographic distribution over the United States. Attention is especially directed to the registration areas where cancer and tumor are most frequent.

It is found that the States and portions of States which comprise these areas are just the places where the greatest number of people are living after the age of 55 or the age of greatest frequency of cancer and tumor, and equally it is shown in a striking manner that cancer and tumor are least frequent in those areas where the fewest people are living after the age of 55.

The foregoing statements are easily proved from the figures on page 690-1, Part I of the report.

CONCLUSIONS.

I. Cancer and tumor have not increased in any greater proportion than several other diseases "common in adult life and old age."

II. The geographic distribution of cancer and tumor corresponds almost exactly to the geographic distribution of people of greatest age. Cancer and tumor are therefore most frequent in those sections where old people are most numerous.

	Influenza (P. 141).	Apoplexy and Paralysis (P. 196).	Heart Disease and Dropsy (P. 206).	Cancer and Tumor (P. 181).	Old Age (P. 164).
Most frequent in.....	Rural districts.	Rural districts.	Rural districts.	Rural districts.	Rural districts.
Least frequent in.....	Cities.	Cities.	Cities.	Cities.	Cities.
Highest proportion among	Native whites of native parents.....32.3 Foreign whites.....31.8	Foreign whites.	Foreign whites.	Foreign whites.	Foreign whites.
In the registration States—deathrate highest in	Rhode Island and Connecticut.	Maine and New Hampshire.	Dist. of Columbia and New Hampshire.	Vermont and Maine.	Vermont.
In the registration States—deathrate lowest in	Michigan and New York.	Michigan and Rhode Island.	Michigan and Connecticut.	New Jersey and Michigan.	New Jersey and New York.
Deathrate greatest among those whose mothers were born in	Ireland, England and Wales, Scotland.	Ireland, France and Scotland.	Ireland, France and Scotland.	France, Scotland and Germany.	Scotland, Ireland and France.
Deathrate lowest among those whose mothers were born in	Hungary, Bohemia, Russia, Poland and Scandinavia.	Russia, Poland, Italy and Scandinavia.	Russia, Poland, Hungary, Bohemia and Scandinavia.	Russia, Poland, Italy, Hungary and Bohemia.	Italy, Russia, Poland, Hungary and Bohemia.
Highest in white persons whose mothers were born in—					
Age, 45-64.....	Ireland, Scotland and United States.		Ireland, Scotland and Germany.		
" 65 and over.....	Ireland, Scotland, England and Wales.	Russia, France, England and Wales.	Ireland, Bohemia and "other foreign countries."	Russia, "other foreign countries" and Scotland.	Bohemia, Ireland and Scotland.
Lowest in white persons whose mothers were born in—					
Age, 45-64.....	Russia and Hungary.		Poland, Hungary and United States.		
" 65 and over.....	Russia and Poland.	Poland, Bohemia and Scandinavia.	Poland, Italy and Hungary.	Poland, Hungary and Scandinavia.	Hungary, Italy and Russia.
Greatest mortality at the age of	65 and over.	65 and over.	65 and over.	65 and over.	
Average age at death—					
1900.....		63.2.	54.3.	57.2.	81.8.
1890.....		62.5.	52.7.	56.1.	82.5.
Proportion greatest in the following registration areas	Southern Central Appalachian region, South Atlantic Coast region, Southern Interior plateau.	Northeastern hills and plateaus, Central Appalachian region, North Atlantic Coast region, heavily timbered region of the Northwest.	Pacific Coast region, heavily timbered region of the Northwest, prairie region.	Pacific Coast region, Northeastern hills and plateaus, prairie region, heavily timbered region of the Northwest.	Northeastern hills and plateaus, North Mississippi river belt, heavily timbered region of the Northwest.
Proportion lowest in the following registration areas	Northern Mississippi river belt, Western plains, Great Northern lakes.	Southern Mississippi river belt, Gulf Coast region, Southwest Central region.	Southwest Central, Southern Mississippi river belt, region of Western plains.	Southern Mississippi river belt, Southern Central, Southern Interior plateau.	Southwest Central region, Southern Appalachian region, Middle Atlantic Coast region.

AN INTERESTING MODIFICATION OF TECHNIC IN PENROSE'S OPERATION FOR NEPHROPEXY.

BY
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The changes in technic in the brilliant operation for fixation of the kidney designed by Penrose, and which we give herewith, should be credited to Dr. Milbank Johnson, of Los Angeles. In an article on the treatment of floating kidney, Dr. Beyea¹ says: "The principle which to my mind is ideal and quite essential in the operation of nephropexy is to avoid any direct injury to the kidney parenchyma or capsule. Further, the operation should avoid extensive cicatricial change in the lumbar incision." These are the very points which Dr. Johnson's modifications of technic effect.

In the Penrose-Beyea operation the ends of the catheters are brought out through the main incision and tied over an oblong pad of gauze with which the wound is covered. These ends therefore act as a foreign body, which tends to prevent the healing of the wound on the one hand and does not allow of a delicate tension and complete control of the kidney on the other. This may be made plain by referring to Fig. 2; the rubber drainage tube used by Beyea tends to pull apart at A, the kidney cannot be brought into absolute approximation with the wall of the back. Dr. Johnson makes no change in the preliminary part of the operation.

The patient is placed prone, with the Edebohls' kidney cushion under the abdomen; the usual incision is made along the outer border of the erector-spinal muscles for about 3½ inches; the fibers of the latissimus dorsi are separated just over the outer border of the erector spinal. With reference to the ilio-hypogastric nerve which Edebohls holds is likely to be injured at this stage of the operation, Dr. Johnson thinks that the nerve may be disregarded, as he has found in all his cases that the resulting anesthesia from cutting the same passes away completely in a few days. The sheath of the quadratus lumborum is next opened in the direction of its fibers; the perirenal fat is thus exposed, the space of Gerotta is entered and the kidney separated as far as necessary by blunt dissection from its fatty capsule.

Dr. Johnson's procedure from this point is as follows:

He makes an incision the length of the kidney through the fatty capsule, the latter being dissected from the kidney but not removed. He then makes four openings about 15 mm. on either side of the main incision, A B C and D, Fig. 3. These incisions of course go through skin, fascia, and muscle. The catheter is then passed through the opening A, on through the fatty capsule a few millimeters to the side of the main incision in the same, around the kidney proper about 1 cm. from and above the ureter and renal vessels and out through the fatty capsule and the opening B on the opposite side. Similarly, a second catheter is introduced through the opening C and brought around below the ureter and vessels of the kidney and out through the opening D. The incision in the fatty capsule is then closed and the main muscular incision brought together with continued sutures of catgut and a subcuticular silk worm-gut stitch for the skin. The operator is now ready to manipulate the catheters. There is of course absolute freedom of movement and taking one end in either hand the kidney may be placed in relatively any position toward the abdominal wall which the operator sees fit; in other words he can get the exact tension on the kidney he desires. Having satisfied himself that the organ is properly placed, the ends of the catheters are clamped together. Emerging as they do from the side of

¹American Medicine, September 21, 1901.

instead of through the original wound, they tend to draw together the sides of the same instead of forcing them apart as is the case in Penrose's method. This may be made plain by referring to Fig. 1.

The method of bringing out and fixing the ends of the catheters greatly facilitates the healing and the

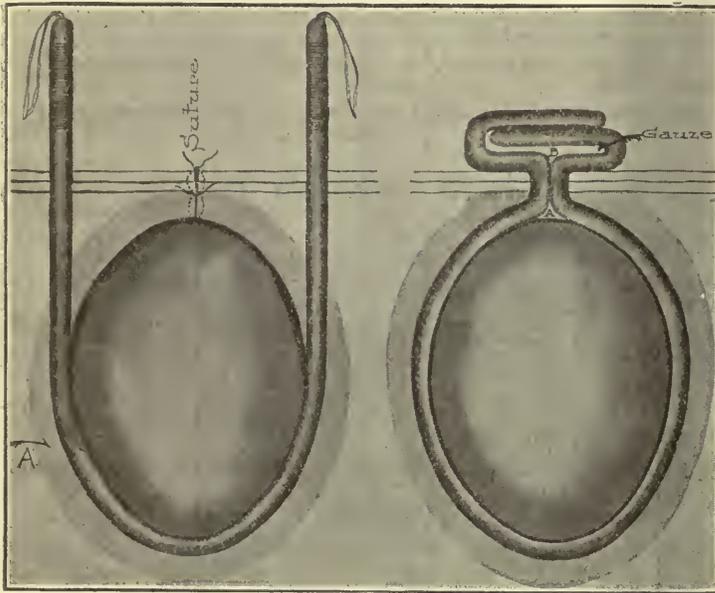


Fig. 1.—A, fatty capsule.

Fig. 2.

dressing of the wound and certainly more nearly approaches Beyea's ideal of what an operation for nephropexy should be, that is, the avoidance of any direct injury to the kidney parenchyma or capsule, and of extensive cicatricial changes in the lumbar incision.

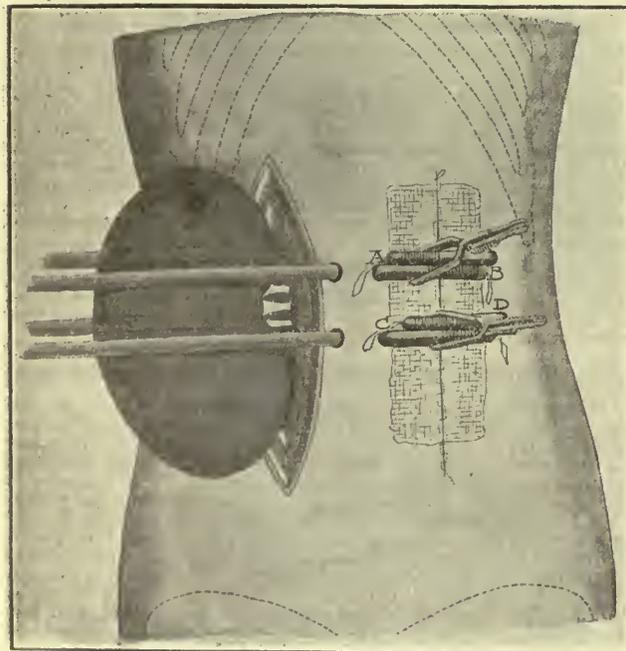


Fig. 3.

Dr. Johnson is inclined to believe that this distribution of the catheter B leads to stronger cicatricial attachments and that the kidney is more firmly fixed thereby. He says that in all of the six cases in which he has used the above modifications the patients have borne the

presence of the foreign bodies (the catheters) better and that there was less discomfort than in those cases in which he had brought the catheters out directly through the main incision. He finds it advisable to renew the strip of gauze under the catheters on the second day, at which time all exudation has ceased, as such a procedure greatly assists the healing of the wound. Instead of using a rubber drainage tube he employs soft and smooth German rubber catheters (which are removed as in Beyea's operation on the twenty-first day). The ends of the catheters are wrapped and have a silk loop to facilitate their passage through the capsule and muscular layers of the abdomen.

BRIEFS ON PHYSICAL TRAINING.

BY

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No. 2.

The Individual Equation in Physical Training.

I desire to express my unqualified disapproval of the measurement standard of individual capacity, as applied in many institutions in which physical training is taught. The comparative measurements of individuals are as fallacious standards by which to prescribe certain forms of exercise as could be well imagined. The idea that an individual of a given height and weight should present such and such measurements of the neck, chest, arm, forearm, thigh, and calf is, to me, the height of absurdity. It might as well be argued that an individual with a certain size of cranium should be the possessor of a nose or ears of certain definite proportions, or that an individual of a given height and weight should have feet and hands of a certain size. This rule will do very well in art, but it is a rank fallacy in physiologic training. The symmetry standard should be individual.

Chest measurements are particularly fallacious as determining chest capacity and the proper size of chest relative to the general measurements of a given individual. Much depends upon the conformation of the chest as to the relative degree of lung capacity and the proportionate measurements relative to the rest of the body. In certain individuals the chest, while presenting relatively small measurements when compared with their general measurements, is round and long, so that expansion is largely a matter of diaphragmatic movement rather than of lateral movement of the chest walls, and the moderate expansion is compensated for by the considerable chest area. Such individuals may present a very slight difference between extreme inspiration and extreme expiration, and yet have a pulmonary capacity greater than many whose chest measurements are far superior to theirs. The relative strength of the chest walls and degree of elasticity of the lung tissue itself are factors to be reckoned with independently of the chest measurements. There is something amusing in the competitive spirometer tests of the lungs in different subjects. There are certain individuals who, according to tape measurements, have enormous chest capacity, yet show up very unfavorably when compared with certain narrow-chested, spindling individuals, so far as the spirometer test is concerned. That the spirometer test is fallacious, I freely admit, still it is of value in making comparisons in this particular direction.

The attempt to develop the measurements of a given individual up to an arbitrary standard of proportionate development has wrecked many a man who, while not

designed by nature to become an ideal athlete, might have been put in an ideal condition of physiologic development by rational methods of training.

The first step in any given case should be to determine as nearly as possible the inherent individual muscular capacity. No effort should be made to develop the subject so his proportionate measurements will correspond with even an average arbitrary standard. If the subject has a long, narrow chest, narrow shoulders and small bones, with naturally small muscular development, any attempt to develop proportionate measurements to correspond with a given standard will result in disaster. In brief, the end and aim of physical training is, as expressed in a previous paper, to develop the natural physical capital of the individual to its highest degree. The standards for A and B may vary widely. An attempt should be made to get out of each subject the best that is in him, not to build on muscle or give strength beyond his inherent capacity.

Specialism in muscle building is justifiable only in so far as it tends to bring up any given portion of the body to the relative—*i. e.*, the symmetric—proportions normal to the particular individual. The subject of specialism in athletics is too broad for discussion here, especially if it be remembered that I am discussing, not athletics for prowess in any field whatever, but athletics as a therapeutic resource.

In beginning the training of adults, the occupation should be taken into serious consideration. More than 25 years' experience and observation of physical training have convinced me of the importance of this point. My having experienced both the benefits of proper training and the evils of improper training, should give a certain amount of weight to this opinion. I am convinced that the muscles of the highly trained athlete are out of place, useless, and perhaps injurious, to the man whose occupation in life is of a sedentary character. In advising adults to train, it is, in my opinion, always essential to take into serious consideration the physical necessities of the patient's occupation, whatever it may be. Unused muscular fiber becomes in time degenerate muscular fiber. Unused visceral capacity results, first, in functional, and finally in organic, disturbance of the viscera.

Before prescribing a course of training, another point bearing upon the individual equation is of the greatest importance. A little experience in muscle building will enable the physician to determine fairly well the developmental capacity, so to speak, of the muscular system of any given subject. Individuals with relatively short heavy bones and correspondingly short tendons, and thick-bellied muscles, must be handled very carefully. In the majority of such patients all that is necessary is to make supple and bring under perfect volitional control such muscular fiber as they already have. A more "intelligent" and useful quality of muscle is what is needed, and mere increase of muscle would be superfluous, even were it not injurious. Individuals of the class I am describing tend to become muscle and joint-bound, a condition familiar to every athlete, and which depends upon muscular and ligamentary hypertrophy and stiffness due to over-development. The system of exercises that should be prescribed for such persons should be entirely different from that which is proper for the long-boned, long-tendoned individual, the bellies of whose muscles are relatively short and thin as compared with the bones and tendons. Such individuals have naturally more supple muscles, and their joints present greater mobility than in the case of those described under the first head. It will probably be necessary to reiterate this point in a subsequent paper.

In prescribing a course of muscle training care is necessary to gauge as nearly as may be the vital resistancy of the subject. The endurance of persons of apparently equal muscular strength varies considerably. Conscientious study of each case as the course of training progresses gives most valuable information in this respect.

No. 3.

The Athletic Habit and Its Evils.

A discussion of therapeutic resources, however valuable it might otherwise be, is of little use if the possible evils of its injudicious application are not considered. A very serious mistake in prescribing training is, I believe, the failure to differentiate the student, professional man or individual of sedentary habits in general from men whose occupation involves muscular exercise. Prolonged observation has convinced me that the muscles of the professional athlete or the blacksmith are not only unnecessary to men whose daily occupation require no high degree of muscular development, but are absolutely injurious. Not only is this true so far as exaggerated muscular development is concerned, but it applies with special force to the structural and functional visceral capacity of the large-muscled man, a capacity which has developed *pari passu* with the growth of muscle. Large muscles unused are pernicious, it is true, but an immense unused visceral capacity is still more so. Muscular degeneracy does not necessarily produce serious results, save in the case of the heart, but visceral degeneracy is a much more serious matter. A big arm with a fine biceps, triceps, and deltoid development may be very pretty to look at, but such arms have oftentimes cost their owners their lives.

An important point to which attention has not been called, so far as I know, is this: Individuals in hard training necessarily demand more food, and food richer in proteids than those who do not train. Proper digestion, assimilation, metabolism and elimination depend here upon the maintenance of a large amount of muscular exercise. Frequently in my experience athletes have become markedly lithemic whenever they stopped training for any length of time. The demand for nitrogenized food and food in large quantity does not subside immediately upon cessation of the usual amount of exercise. The accumulation of crude products of tissue metabolism is an inevitable result when the athlete goes out of training, if he does not markedly modify the quality and diminish the quantity of his diet.

Independently of the question of overstrain, a high degree of physical development is often fatal, if for any reason the subject is compelled to cease his muscular work and adopt a sedentary life. One of the greatest pugilists that America ever produced, John Dwyer, of Brooklyn, quit his regular occupation to enter the counting-room—he died within a year of tuberculosis. The explanation in this case was simple enough: the immense lungs which were necessarily an advantage in the prize-ring fell into disuse in the counting-room. Disuse meant degeneration, and degeneration meant a lack of resistance of which tubercle bacillus was not slow to take advantage. I have had under my professional observation several lesser lights among professional athletes, in whom a similar result occurred from the cessation of training.

In my own experience—and I have often trained to excess—the training habit has been as hard to break, when necessity has compelled me to do so, as the habitual use of narcotics and alcohol seems to be in most individuals. On several occasions when I have been compelled to cease training for one reason or another it has required many months for my system to become adapted to the new conditions. The time arrives in the lives of all athletes when the exigencies of one's occupation, or advancing years, associated with the lack of enthusiasm incidental to the middle period of life, bring about a cessation of active training. In many instances the result is disastrous, and while, in common with a number of others whom I have known, I have seen no particularly disastrous results in my own person, the instances in which the opposite is true have been so numerous in my experience that I am convinced of the correctness of my position. Every physician athlete

with whom I have been associated in the past 25 years has coincided with me in the foregoing views.

One of the marked evils of systematic training is the fact that constipation very often results when the muscular work ceases. The digestive function is very much disturbed, in many instances, by the cessation of the hard, systematic muscular work. Functional disturbance of the liver is very often met in athletes out of training. I have noted in certain individuals some particular form of athletics was absolutely necessary to maintain the normal hepatic function; thus, in one case the individual was compelled to indulge vigorously in boxing to avoid hepatic torpor. The movements involved in excessive sparring seemed to have an especially stimulating action upon the liver, and a few days' cessation of the violent exercise produced considerable disturbance. The evils outlined in this brief paper are not necessarily due to athletic overstrain, although confessedly in some instances rather difficult to dissociate from it. There are so many cases, however, in which muscular overstrain is directly responsible for disaster that I have reserved that subject for discussion in a separate paper.

SPECIAL ARTICLES

THE USE OF TRUTH AND FALSEHOOD IN MEDICINE: AN EXPERIMENTAL STUDY.¹

BY

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Two years ago, at the meeting of the Association of American Physicians at Washington, Dr. E. G. Janeway, then president of the association, chose for his presidential address the subject of "Truth in Medicine." Unfortunately, the address was never delivered, for President Janeway feeling keenly the responsibility of putting through the long schedule of papers assigned to the first morning session, omitted his own part of the program and contenting himself with a few introductory remarks started us at once on our morning's work. Only a hint of what he meant to say was vouchsafed to us. The subject, he said, "could have been handled under such heads as *truth in statistics; truth in diagnosis; truth in pathology; truth in therapeutics.*"

I have often regretted that Dr. Janeway's modesty and conscientiousness induced him to deprive us of this address. Still oftener I have speculated on what he would have said had the occasion seemed to him propitious. For the subject seems to me one that ought to be discussed by medical men. The results of experience should be compared according to the methods that have proved useful in the investigation of other topics. But as time has passed and Dr. Janeway has not returned to the topic, I have ventured to take up the hints and outlines which he furnished us and fill in, in my own fashion, the structure which I imagine he might have reared. Yet though he deserves credit for the plan of investigation which I have followed, it goes without saying that no one but myself is responsible for any opinion here expressed.

I approach the subject of truth in medicine, not from the point of view of scientific method, nor of metaphysic analysis, but of professional ethics. I do not ask "how can we find truth," nor "what is truth," but "how far should we speak the truth in dealing with our patients, our colleagues, or anyone else." "Are lies ever in place? If so, under what conditions?"

My method is experimental, the only one in which reasonable men place confidence, the only sound scientific method. I do not ask you to consider what, on general principles or according to authority or tradition, should be our course in this matter. As indicated in the title of my lecture I have made an experimental study of two different hypotheses on the sub-

ject, submitting them to the test of experience, trying how they work, as any candid person must, if he wishes to make the fairest judgment in his power on any question. I have been working on this subject during a considerable part of the last eight years, and my conclusions, however faulty they may be, must be criticised like any other piece of scientific work only by those who have repeated the experiments on which they are based.

I began, as was natural, with the hypothesis on which I had been brought up. My medical training included some few lectures on medical ethics, but in matters of ethics, example far more than precept was the guide to the Harvard medical student of my day. Only once during my course was the rule for truth-speaking in medical matters directly stated.

"When you are thinking of telling a lie," said the teacher, "ask yourself whether it is simply and solely for the patient's benefit that you are going to tell it. If you are sure that you are acting for his good and not for your own profit, you can go ahead with a clear conscience."

The lies that the medical profession agree in condemning whenever the question arises are those told for personal and private gain. The magazine article representing work never performed and written solely for advertising purposes, is a lie that no one approves. The diagnosis of diphtheria when the physician knows the case is merely one of tonsillitis, is not justified by the increased fees which his frequent visits entail. There is no disagreement of opinion among physicians about such lies as these.

But the lies which are usually defended among physicians are of a different type and may be illustrated by the following quotations:

"The young physician in our day has some advantages in competition with older men. People sometimes consider a young man more up-to-date than his elders. Still there are some alleviations in growing old. When you don't know what's the matter with a patient you can enjoy the luxury of saying so. When you're young you have to know everything, for if you say you don't know, the patient is likely to chuck you out and send for some one else who does."

That *truth in diagnosis* is possible for the older physician, but not always for the younger, seems to be the moral of this quotation.

To speak the *truth in prognosis* is even harder. In the course of a lecture on the prognosis of heart disease, I once heard the following story:

A business man past middle life was found to be suffering from some form of heart disease. His wife inquired about the diagnosis and hearing it was heart disease she asked: "Isn't it true that he may drop dead suddenly?" The doctor had to confess that this was a possibility. "The consequence was," went on the story-teller, "that day after day she sat at her window about the time that her husband should be returning from business, watching to see whether he would come home on his feet or in an ambulance."

"Now," said the narrator, "when you get into practice, gentlemen, whatever you do, don't do that. Don't make a woman's life miserable because you can't keep a fact to yourself."

Surely it seems as if this is the place for a good straight lie. I thought so when I heard the story and made up my mind that whatever blunders I made in dealing with any patients I might have, this one I would avoid. But I found it more difficult than I had anticipated. It was not very many years before I saw in consultation a case the duplicate of that just described. Mr. B. had angina pectoris, aortic regurgitation, cardiac hypertrophy, in short, general arteriosclerosis affecting especially the heart and kidney. After I had talked over the case with the attending physician and was about to return and say a word to the family, my colleague said: "There's one thing I must warn you about. Mrs. B. is an excessively nervous, excitable woman, of no stamina at all. She gets hysterical on the slightest pretext, and when that happens she makes every one else in the house sick. If she heard what's the matter with her husband she'd go all to pieces. So you'll be very guarded in what you say, won't you?" To this I readily agreed. Remembering my lesson, and we went downstairs where Mrs. B. was waiting

¹ Delivered as one of the Cartwright Lectures at the Academy of Medicine in New York, December 30, 1902.

to hear the result of our deliberations. She placed a chair for me and then planted herself in another, squarely facing me and very near. "Now, first of all," said she, "I want to know whether you are going to give me a straight and true answer to everything I ask you?" Having just promised the family physician that I would do nothing of the kind, I was so taken aback that I hesitated a moment. "That's enough," said Mrs. B., getting up. "I don't care to hear anything more."

I did not blame her. She had fairly caught us in our attempt to trick her. But the anecdote shows that the path of the medical man conscientiously trying to shield people from pain and trouble is sometimes a difficult and thorny one.

By means of these examples I hope I have succeeded in getting before you the problems that I wish to discuss.

I propose next to examine the matter more in detail, considering: (1) truth in diagnosis; (2) truth in prognosis; (3) truth in treatment.

By telling the truth I mean doing one's best to convey to another person the impression that one has about the matter in hand. One may do one's best and yet fail, but that is not lying. I once spent half an hour trying to convey to my parlor girl my impression about how to build a fire, but when she next tried to build one it appeared that the only idea she had received was that of packing kindling wood into the fireplace as tightly as she could and piling logs on top without a chink or cranny anywhere for a draught. Clearly I did not succeed in conveying my impression to her, yet I suppose no one would accuse me of lying to her. I had merited the cowboy's epitaph:

"He done his damndest; angels could do no more."

A true impression, not certain words literally true, is what we must try to convey. When a patient who has three fine rales at one apex and tubercle bacilli in his sputum asks, "Have I got tuberculosis?" it would be conveying a false impression to say "Yes, you have," and stop there. Ten to one his impression is that tuberculosis is a disease invariably and rapidly fatal. But that is not at all your impression of his case. To be true to that patient you must explain that what *he* means by tuberculosis is the later stages of a neglected or unrecognized disease; that many people have as much trouble as he now has and get over it without finding it out; that with climatic and hygienic treatment he has a good chance of recovery, etc. To tell him simply that he has tuberculosis without adding any further explanation would convey an impression which in one sense is true, in the sense, namely, that to another physician it might sound approximately correct. What is sometimes called the simple truth, the "bald truth" or the "naked truth" is often practically false—as unrecognizable as Lear naked upon the moor. It needs to be explained, supplemented, modified.

Bearing in mind, then, that by truth speaking I mean the faithful attempt to convey a true impression, and by lying an intentional deception, however brought about, let us take up the question of

I.—TRUTH AND FALSEHOOD IN DIAGNOSIS.

The common conception of a doctor's duty in this matter, and one according to which I practised medicine for the first five or six years after graduation, is something as follows:

"Tell the truth so far as possible. But if you are young and not yet firmly established in practice it won't do to let the patient or his family know when you are in doubt about a diagnosis. If you do they will lose confidence in you and perhaps turn you out."

That is what is implied in the frank and refreshing confession of a middle aged and successful physician whose words I have already quoted: "The great advantage of getting old is that when you don't know, you can enjoy the luxury of saying so."

The first experience that made me doubt whether it was necessary for a young practitioner to pretend omniscience in order to retain his patients' confidence was the following: I had the opportunity of driving about a large town some 25 miles from Boston with a young physician only a year or two my senior. He took me on his regular rounds and we saw farmers and the grocer's wife, the hotel-keeper's daughter and the blacksmith's baby, as well as one or two well-to-do people.

The great majority of the cases were in families of very limited education, the kind of folks that we think of as subsisting mostly on pies and patent medicine. But what made each case an eye-opener to me was the utter frankness of the doctor with the families. Diagnosis, prognosis, and treatment were given with an absence of subterfuge and of prevarication that astounded me, and what even more surprised me was to see the way the patients liked his frankness. I never have seen manifested more implicit confidence in a physician than during that drive. He never forced his doubts or his suspicions upon his patients, but when they asked a straight question they got a straight answer. A baby had a fever. "What's the baby got?" asked its mother. "Can't tell yet," said the doctor; "may be going to break out with something tomorrow or it may be all right in a day or two. We shall have to wait and see." There was no talk of "febricula" or "gastric fever." Not once did I hear him say that a patient was "threatened" with any disease. He knew that Nature makes no threats and that no honest doctor ever foists his ignorance upon "Nature" by charging her with making a "threat."

I asked him the obvious question: "How can you be so frank with your patients and yet keep their confidence?"

"Because they know," said he, "that whenever anything unusual comes up that I can't handle or that puzzles me I have a consultant. So when I say that I know, they believe me, and when I say I don't know and yet don't get in a consultant they understand that nothing of any seriousness is the matter, and that they don't need to worry. Lots of men are afraid to call a consultant because they're afraid the family will think the less of their ability. But it makes the family feel a great deal safer to know that I don't pretend to know everything and stand ready any moment to call in some one that knows more than I do. I've seen a man lose a family because he *didn't* have a consultant, but never because he did."

"Don't the families ever object to the expense of a consultant?" I asked. "No," said he, "it's perfectly easy to get good consultants at low prices if you explain the family's circumstances to them."

As a result of that conversation I began cautiously to try the experiment of telling the truth, whether I understood the case thoroughly or not. I never had reason to regret it, and I am every year more firmly convinced that the young doctor, even when practising chiefly among uneducated people, does not need to pretend omniscience merely because he is young and his patients ignorant. The truth works just as well for the pocket and a great deal better for the community and for our own self-respect.

"A certain profession of dogmatism," said Sir Frederick Treves in a recent address¹ to medical students, "is essential in the treatment of the sick. The sick man will allow of no hesitancy in the recognition of disease. He blindly demands that the appearance of knowledge shall be absolute, however shadowy and unsubstantial may be the basis of it."

This declaration has the great merit of frankness. But how would the doctor like to have his patients hear those words? How would he like to be caught by his patients in the act of passing on to medical students such little tricks of the trade as this? It is true that his address may never come to his patient's ears; he may never be found out. But is it good for us as professional men to have our reputations rest on the expectation of not being found out?

I doubt beside whether (as Dr. Gould² has pointed out in an admirable editorial) we "succeed in humbugging the patient's relations and friends by the devices which apparently suit the patient. Among intelligent laymen, far more frequently than is supposed, one finds that such sham certainty without the reality of knowledge and conviction is at once detected. Doctors make a great mistake when they think their deceits really deceive. Then there is the patient who recovers. When he is well the false diagnoses, the changes of dogmatic opinions, and of medicines, the blind alley of proved errors, these are thought over."

It is getting steadily harder to deceive the public. I

¹ British Medical Journal, 1903.

² American Medicine, November 1, 1902, p. 681.

recently heard a very prominent and representative citizen of Boston commenting upon the medical bulletins on President Roosevelt's leg. "Of course," he said, "no one ever believes these bulletins. The doctors give out only so much as they think fit, in order not to alarm the public unnecessarily. The result is that the public never believes the bulletins and is always more or less anxious."

Now, I do not believe that the truth was in any way tampered with in the bulletins either of President Roosevelt's or of President McKinley's illness. I believe these bulletins gave the strict and accurate truth. But I think it is generally admitted that such bulletins do not command the respect which they usually deserve. Business men and others to whom it may be of vital importance to get reliable information about the illness, are especially apt to "discount" the bulletins of the group of physicians in attendance on a man whose life is of great importance financially. We all remember how persistently the general public believed that King Edward's illness of last summer was due to malignant disease, and not to the "perityphlitis" mentioned in the bulletins. How can we blame the public for not believing the doctors in attendance on the King when one of them, Sir Frederick Treves, is willing publicly to advocate the systematic deception of patients? His words I have quoted. It is true that he does not advise deception under conditions like those of King Edward's illness, but how is the public to know just when and how far the doctor will think it best to deceive? Such discrimination is especially difficult in a country like England, where the public cannot help knowing that what is "given out" concerning foreign affairs, especially in matters of diplomacy and war, represents only so much of the truth as the officials think it best for the public to know.

I have been speaking of the disadvantages of trying to deceive a patient or those interested in him with regard to the diagnosis. I have argued so far that it is not necessary to assume absolute knowledge in order to impress the patient's mind and hold his confidence, and that owing to the increasing scepticism of the public, it is becoming more and more difficult to fool the patient at all.

Very few Americans like to lie. They would rather tell the truth if they could, but there are cases in which the voice of duty itself seems to tell us that we must lie. To prevent the breaking up of a family, to save a life, are we not to lie? A husband confesses to you the sin that has resulted in disease for him. The wife, suspecting something, catches you on your way out and asks you point blank what ails her husband. Can you tell her the truth? Well, suppose you tell her a good, round, well-constructed lie. What are the chances of her believing you? If she has got to the point of suspecting her husband, are her suspicions likely to be quieted permanently by your reassurances? Is there not a fair chance that she knows enough of the usual customs of physicians when placed in this position to discount what you say?

Then the truth in such matters very often comes to light sooner or later, and if it does, the wife is apt to let a number of persons know what kind of a trick you have played her. Of course, there are many such cases in which the truth never is found out, but I ask again, is it a good thing for us as professional men to be living in the hope of not being found out?

II.—TRUTH AND FALSEHOOD IN PROGNOSIS.

That it is a bad thing to lie about a prognosis we all admit, as a general rule, but there are cases when it is not easy to see what harm it does when the good that it does is very evident indeed.

A patient has gastric cancer. He is told that he has neuralgia of the stomach, and feels greatly relieved by the reassurance, for the effect of psychic influences is nowhere more striking than in gastric cancer (as the cases quoted in Osler's textbook show). Meantime the truth is told to the patient's wife, and she makes whatever preparations are necessary for the inevitable end. Now what harm can be done by such a lie as this? That sufferer is protected from those anticipations and forebodings which are often the worst portion of his misery, and yet his wife, knowing the truth and thoroughly approving of the deception, is able to see to it that her husband's financial affairs are straightened out and to prepare, as well as may be,

for his death. Surely this seems a humane and sensible way to ease the patient's hard path, and who can be the worse off for it?

I answer, "Many may be worse off for it, and some must be." The patient himself is very possibly saved some suffering. But consider a minute. His wife has now acquired, if she did not have it already, a knowledge of the circumstances under which doctors think it merciful and useful to lie. She will be sick herself some day, and when the doctors tell her that she is not seriously ill, is she likely to believe them?

I was talking not long ago on this subject with a girl of 22. "Oh, of course, I never believe what doctors say," was her comment, "for I've helped 'em lie too often and helped fix up the letters that were written so that no one should suspect the truth."

In other words, we have added to the lot of one person, the sufferings which we spare another. We rob Peter to pay Paul.

But it is not likely that the mischief will be so closely limited. There are almost always other members of the family who are let into the secret, and intimate friends, either before or after the patient's death, find out what is going on. Then there are nurses and servants from whom it is rarely wise or possible to keep hidden the actual state of affairs. All told, I doubt if there are less than a dozen souls on the average who are enlightened by such a case in regard to the standards of the physician in charge and so of the profession he represents. I have heard such things talked over among "the laity," and, as a rule, not one, but several cases are adduced to exemplify the prevailing customs of medical men in such circumstances.

We think we can isolate a lie as we do a case of smallpox, and let its effect die with the occasion that brought it about. But is it not common experience that such customs are infectious and spread far beyond our intention and beyond our control? They beget, as a rule, not any acute indignation among those who get wind of them (for "how," they say, "could the doctor do otherwise?"), but rather a quiet, chronic incredulity which is stubborn, just in proportion as it is vitally important in a given case to get at the real truth, as in the case of King Edward before mentioned.

You will notice that I am not now arguing that a lie is, in itself and apart from its consequences, a bad thing. I am not saying that we ought to tell the truth in order to save our own souls or keep ourselves untainted. I am saying that a lie saves present pain at the expense of greater future pain, and that if we saw as clearly the future harm as we see the present good, we could not help seeing that the balance is on the side of harm. It is intellectual short-sightedness.

I have told fully my share of lies, under the impression, shared I think, by many of the profession, that it is necessary in exceptional cases to do it for the good of the patient and his friends, but since I have been experimenting with the policy of telling the truth (at first cautiously, but lately with more confidence), I have become convinced that the necessity is a specious one, that the truth works better for all concerned, not only in the long run, but in relatively short spurts, and that its good results are not postponed to eternity, but are discernible within a short time.

In vindication of my belief let me tell you the sequel to one of the stories before related. You will recall that I prepared "to be very guarded in what I said" (as the technical phrase is) to a lady whose husband had angina. The attending physician, who had known the lady for years, and who represented entirely the views of her family, assured me that she was too delicate and too unstrung by neurasthenia to be capable of bearing the truth about her husband. If she knew that he might die suddenly and at any time, she would brood and fret over the knowledge until she became so querulous and unhinged that all the family, the sick husband included, would be made miserable. You remember how I made up my mind to conceal the truth from her if I could, and how she upset all my calculations by asking me suddenly whether or not I would tell her the whole truth so far as I knew it. Consider a moment the difficulties of that situation.

"Will you give me a true answer to every question I ask you?" I could scarcely be expected to pop out a prompt "yes" when I had just promised the family physician not to do

anything of the sort. Of course I could not say "no," and if I hesitated an *instant*, I had betrayed my intention of deceiving her. What would you have done?

As a matter of fact I hesitated a bit, as I think anyone but a most practised liar or a hidebound truth-teller would have done. "That's enough," said she; "that's all I want to hear." But of course I couldn't leave it there, so I pulled myself together and made a clean breast of the whole thing. I told her just what I thought and what I expected, including all that I had promised the doctor not to tell. Now you will remember that the attending physician who had known her intimately for years had warned me that she could not bear this sort of news—that she would brood and worry over it, until she had made herself and everyone else in the house miserable. So when she cornered me and got the truth out of me, I made haste to get out of the house, and thanked my stars that I did not have to stay behind and pick up the pieces of the nervous wreck to which my plain, unvarnished tale must needs reduce the poor lady.

Several weeks after, I met the family physician and learned that for some mysterious reason the expected collapse on the part of the neurotic wife had never arrived. Everyone was still expecting her to go to pieces, but as yet she had got along about as usual. In point of fact she has never met their expectation. It is now nearly four years since the dreadful truth was told her and no breakdown has occurred.

After that most astonishing experience I began cautiously to tell the truth in similar cases, when intimate friends or relations of the patient declared that the truth could not be borne, and when I had no knowledge of the patient's character to set against that of his closest friends. It has been, on the whole, the most interesting and surprising experiment that I have ever tried. The astounding *innocuousness of the truth* when all reason and all experience would lead one to believe it must do harm, has surprised me even more than the remarkable tolerance of febrile patients for alcohol. It seems as if when the pinch comes and the individual has to face stern realities, some species of antitoxin is spontaneously and rapidly developed whereby the individual is rendered immune to the toxic and deleterious effects of the nervous shock!

Those of you who are familiar with Ehrlich's side-chain theory will remember that a group of cells, say those of the nervous system, acquires immunity against a given toxin, because the cells stimulated by the presence of the toxin, produce with great rapidity an *excess* of those very "receptors" or vulnerable points in virtue of which they are sensitive to toxic action. These new-fledged surplus "receptors" then break away from the parent cell, and swimming free in the blood-stream, meet the toxins, close with them before they reach the neural cells, save these precious cells from injury, and render the toxins harmless.

So may we not conceive that under the stimulus of the first sting and nettle of hard truth, the nervous system of the patient produces rapidly an overplus of free "receptors"—*rises to the emergency*, as we ordinarily say, and so is rendered immune against the otherwise depressing effects of full knowledge? Indeed, Ehrlich's theory might be described as an application to single groups of cells of that tendency to rise to an emergency, to fight when cornered, to supply an imperious demand, which we see often enough in men and in nations.

But whatever the theory, the fact has been brought home to me as it can only be brought home by actually trying the experiment; the fact, namely, that patients and patients' friends exhibit an astonishing power to stand the full truth, an amazing immunity against its depressing effects. No one ought to believe this who has not tried it, any more than you ought to believe what I have said¹ about the action of alcohol until you have repeated my experiments. All that my say-so ought to accomplish is to make someone ready to try the experiment; to take the risks which we must always face if we are to get ahead, and see whether he can verify my findings.

One precaution, however, must be borne in mind. Anyone who is familiar with experimental work knows that the difficulty of verifying another's experiment is often due to failure to repeat just that experiment and no other. A certain blood-

stain is highly lauded. You try it and cannot get the results which its inventor claims for it. But very often you fail because you have not exactly followed the details of his technic.

So here, if you try to repeat my experiments I trust that you will notice just what it is that I recommended you to try. I am not recommending that we should explain to every mother in full detail the etiology, pathology, course, and prognosis of her baby's illness. I have never tried that experiment, and I should suppose it would be a very stupid, useless, and probably harmful thing to do. I do not believe in cramming information down peoples' throats or trying to tell them what they cannot understand properly, any more than I believe in button-holing every acquaintance in the street, and giving him a detailed account of what I consider his faults and failings.

But if my friend asks me for an opinion of his first literary productions, and if I think that they are dreadful rubbish, I do not consider it friendship to say pleasant things of his style and thereby encourage him to pursue literature as a calling. I do not give my opinion unless it is really asked for. But if it is, I do not believe in lying to save anyone's feelings. It does more harm in the end.

So in medicine, if a patient asks me a straight question I believe it works best to give him a straight answer, not a rough answer, but yet not a lie or a prevarication. I do not believe it pays to give an answer that would justify a patient in saying (in case he happened to find out the truth):—"that doctor tried to trick me." I have heard a patient say that, apropos of a lie told by one of the most high-minded and honorable physicians I know, and I do not believe it advisable for any of us to expose ourselves to the chance of rousing that sort of indignation in a patient.

A straight answer to a straight question is what I am recommending, not an unasked presentation of the facts of the patient's case. He may not care to know those facts any more than I care to know the interesting details of dental pathology in which my dentist might wish to instruct me; I leave all that to him. Just so my patient may very properly prefer to be told nothing about his disease, trusting that I shall do my best and let him know when there is anything for him to do in the matter.

But a straight answer does not mean for me what is often called the "blunt truth," the "naked truth," the dry cold facts. The truth that I mean is a true *impression*, a fully drawn and properly shaded account such as is, as I well know, very difficult to give. I know one physician (and a splendid type of man he is, too), who, when he sees a case of rheumatic endocarditis, and is asked for a prognosis, is apt to say something like this: "Well, I'm mighty sorry for you, but your trouble is incurable. Your heart is damaged past repair and there is not much of anything to be done except to take salicylates during the acute attacks and hope that the process will become arrested spontaneously before long." "Is it likely to get worse?" asks the patient. "Yes, I'm afraid it is."

Now in one sense that is all true, but the impression that it will convey to the patient is not true, not at all what I mean by telling the truth. I would rather a physician would tell this sort of truncated, imperfect and very distressing truth, than give the patient a smooth and pleasant assurance that he can be cured and that all will go right provided he does so and so.

But better than either a misleading half truth or a pleasing lie, is an attempt so to answer the patient's question that he shall see not only what he can't do and can't hope for, but what he can do and what there is to *work* for hopefully. That his heart-valve is sclerosed and perhaps useless is true, and in that sense, to that extent, he is incurable; the sclerosed heart-valve is there once for all, and yet by accommodating himself to his diminished heart power, the patient can gradually educate to a considerable extent, both his heart and the rest of himself. His heart can be made to adjust itself to its maimed state and to put forth, in spite of it, a good deal more power than it would have done without the educational process; and the individual by learning to take the best advantage of all the power he has, can accomplish, not all that he *could* in health, yet perhaps as much as he actually *would* have done, allowing for the amount of

¹ In the second Cartwright lecture delivered on the previous evening.

wasted time and wasted opportunity that has often to be deducted from the effective power of a healthy man.

Because this kind of explanation is so difficult and takes so much time, we are apt to shirk it and give the patient either a rough half-truth or a smooth lie. In our free dispensaries one can witness any day a rich and varied assortment of these two methods of shirking a difficult and tedious explanation; the rough half-truth and the smooth lie are dealt out by the shovelful and students watch and make their choice between these two pitiful makeshifts according to their temperaments, often in entire ignorance of any *tertium quid*. For it is particularly in dealing with uneducated people, such as frequent dispensaries, that we distrust the power of truth and the possibility of conveying it. In this field I have made many experiments both with lies and with the truth. I know very well that the truth is sometimes next to impossible to convey, owing to differences between the patient's vocabulary (or in habits of mind) and the physician's, but on the other hand the lie may do more harm, for there is more chance of its being implicitly believed.

To refuse to answer questions is now and then a necessity and need not involve any falsehood. For example, to balk meddling inquiries by an outsider is often our business. Then there is the patient about to undergo an operation, who sometimes catechises us about the details of the operation and sometimes had better remain ignorant about it until after it is over. On the other hand, if the patient's mind is already occupying itself with a definite, but exaggerated picture of the horrors of the operation, a prosaic explanation of the real facts may act as a sedative.

Not infrequently we need to choose our time well, if a piece of painful truth has to be communicated and it may be necessary to avoid giving the patient a chance to cross-question us at a time when we consider him temporarily below par. I have heard a patient say: "The doctor didn't mean to let me get that out of him today," but without any bitterness or sense of being tricked by his physician, for the fact that the doctor avoided being questioned presaged that if cornered he would not tell a lie.

I have said that in my experience patients and their families often develop a most astonishing power to rise to the emergency and to bear the hard truth when it has to be told. But I cannot say that this is always so. There may be cases, I suppose there are such, when the patient does not react from the shock of a cruel truth, but is made worse by it. It is said that such a shock sometimes turns the scale and brings death.

Ought we to persist in telling the truth even when we believe it may kill the patient? Could any effect produced by a lie be as bad as the loss of a human life?

Before answering this question directly, let me ask you to consider a somewhat fanciful hypothesis. Suppose it lay in our power to let loose into the atmosphere a poisonous gas which would vitiate the air of a whole town so that the whole community would gradually suffer in efficiency, in physical and moral fiber. Would it not be worth a human life to save a whole community from such a deterioration?

Now a lie seems to me to do something like that. By undermining the confidence of man in man it does its part in making not one but every human activity impossible. If we cannot trust one another, we cannot take a step in any direction. Business, social relations, science, everything worth doing depends on mutual confidence. It is the very air we breathe. To poison it is to do a far worse thing for society than could result from the loss of a single life. So that though I believe that it is extraordinarily rare to be able to save a life by a lie, it seems to me that the remedy, the lie, is worse than death.

III.—TRUTH AND FALSEHOOD IN TREATMENT.

In discussing truth and falsehood in diagnosis and in prognosis I have dealt chiefly with spoken truth or spoken lies. In the domain of treatment the true or false impression is often conveyed without words.

I do not know who it was that defined a quack as "one who pretends to possess or to be able to use powers (either of diagnosis, prognosis or treatment) which in fact he *knows* he is without." If we think over the various forms of quacks familiar to us—Dr. Munyon, with all those specifics which he

knows he does not possess; the cancer curers, those who advertise to cure "weak men," Francis Truth, who cheats his dupes with all-healing handkerchiefs sent through the mails at \$5 apiece—we see that they all pretend to possess knowledge about valuable medicines or other remedies which they know they do not possess.

Now I was brought up, as I suppose every physician is, to use *placebos*, bread pills, water subcutaneously, and other devices for acting upon a patient's symptoms through his mind. How frequently such methods are used varies a great deal I suppose with individual practitioners, but I doubt if there is a physician in this room who has not used them and used them pretty often. It never occurred to me until I had given a great many *placebos* that if they are to be really effective they must deceive the patient. I had thought of them simply as a means of getting rid of a symptom and no more a lie than hypnotism or any other form of frankly mental therapeutics.

But one day a patient caught me in the attempt to put her to sleep by means of a subcutaneous injection of water. "I saw you get that ready," said she, "and there is no morphin in it; you were just trying to deceive me." I was fairly caught and there was no use trying to bluff it out, so I merely protested that my deception was well meant, that it profited me nothing, that it was simply intended to give her a night's rest without the depressing effects of morphia, etc.

"Of course I see that," she said, "but how am I to know in future what other tricks you will think it best to play me for my good? How am I to believe anything you say from now on?"

I did not know what answer to make at the time, and I have never been able to think of any since.

But water subcutaneously does not differ in principle from any other placebo. If the patient knows what you are up to when you give him a bread pill it will have no effect on him. If he is dyspeptic he must believe that you consider the medicine you give likely to act upon his stomach and *not merely upon his stomach through his mind*. Otherwise it will do him no good. Suppose you said to him: "I give you this pill for its mental effect. It has no action on the stomach," would he be likely to get benefit from it? In short, it is only when through the placebo one deceives the patient that any effect is produced. It is only when we act like quacks that our *placebos* work.

But what harm, you may ask, does a placebo do? Admitting that it is a form of deception and that if you are detected in it the patient and his friends are likely to lose confidence in you, what harm does it do so long as you are not found out?

Well, as previously said, I do not think it is a good thing for any man to succeed only so long as he is not found out, but there are other objections to the use of *placebos* which I will next try to explain.

The majority of *placebos* are given because we believe the patient will not be satisfied without them. He has learned to expect a medicine for every symptom, and without it he simply won't get well. True, but who taught him to expect a medicine for every symptom? He was not born with that expectation. He learned it from an ignorant doctor who really believed it, just as he learned that pimples are a disease of the blood, that shingles kills the patient whenever it extends clear round the body, and that in the spring the blood should be "purified" by this or that remedy. It is we physicians who are responsible for perpetuating false ideas about disease and its cure. The legends are handed along through nurses and fond mothers, but they originate with us, and with every placebo that we give we do our part in perpetuating error, and harmful error at that. If the patient did not expect a medicine for his attack (say of mumps) we should not give it, yet we do all we can to bolster up his expectation for another time, to deepen the error we deplore.

But here, as everywhere, experiment is the test. I have for the past few years been trying the experiment of explaining to the patient why he does not need a drug, when there is no drug known for his trouble. It takes a little more time at first, but one thorough explanation serves for many subsequent occasions. One has only to remind the patient of what we have gone over with him before. When the occasion for a drug

really comes, the patient has far more confidence in its workings.

We feel these things acutely when a patient comes to us who has been previously under the care of another physician. How refreshing to hear the mother of a child sick with measles say, "Well, I don't suppose he needs any medicine, does he? The disease has to run its course, I suppose, and nursing is the main thing." That mother has been given the truth by her physician instead of placebos, and has become accustomed to realities as easily as most people learn to believe outworn errors. On the other hand, we see now and then a patient into whose mind it has been carefully instilled by some physician that every draught of fresh air must be avoided like a plague, that every symptom needs a drug, and that a visit from the doctor every few days is a necessity to salvation.

But the habit of giving placebos has another evil result. It gives the patient indirectly a wrong idea, a harmful idea of the way disease is produced and avoided. If symptoms can be cured by drugs, it is impossible to bring to bear upon the patient the full force of that most fundamental principle of therapeutics: "To remove a symptom remove its cause." That a man can be made well "in spite of himself" as the patent-medicine advertisements say; that is, in spite of violating the laws of health, is a belief produced as one of the by-products of the way we hand out placebos, especially in our hospitals and dispensaries.

No patient whose language you can speak, whose mind you can approach needs a placebo. I give placebos now and then (I used to give them by the bushel) to Armenians and others with whom I cannot communicate, because to refuse to give them would then create more misunderstanding, a false impression, than to give them. The patient will think I am refusing to treat him at all; but if I can get hold of an interpreter and explain the matter, I tell him no lies in the shape of placebos.

Before I close this lecture I want to speak of one further point which my experiments with truth and falsehood have brought home to me. When I have plucked up courage and ventured to tell the truth in hard cases, I have been surprised again and again to find how the chances and accidents of nature have backed me up. Everything seems to conspire to help you out when you are trying to tell the truth, but when you are lying there are snares and pitfalls turning up everywhere and making your path a more and more difficult one.

I will sum up the results of my experiments with truth and falsehood, by saying that I have not yet found any case in which a lie does not do more harm than good, and by expressing my belief that if anyone will carefully repeat the experiments he will reach similar results. The technic of truth telling is sometimes difficult, perhaps, more difficult than the technic of lying, but its results make it worth acquiring.

Legislation to Limit Kissing.—A bill has been introduced into the Minnesota Legislature declaring that it shall be unlawful for one person to kiss another unless he has proved that he is free from contagious or infectious disease, and further that a certificate from a physician declaring a person to have a weak heart, shall constitute a bar to the indulgence of kissing, and violation of the proposed statute is accounted a misdemeanor, punishable by a fine of from \$1 to \$5 for each offense.

Mortality of Michigan During January, 1903.—There were 2,856 deaths returned to the Department of State, corresponding to a deathrate of 13.5 per 1,000 population. The number returned was 190 more than that registered for the preceding month, and 32 more than the number registered for January, 1902. There were 550 deaths of infants under 1 year, 178 deaths of children aged 1 to 4 years, both inclusive, and 906 deaths of elderly persons aged over 65 years. Important causes of death were as follows: Tuberculosis of lungs, 170; other forms of tuberculosis, 25; typhoid fever, 48; diphtheria and croup, 58; scarlet fever, 36; measles, 13; whoopingcough, 40; pneumonia, 382; influenza, 39; cancer, 140; accidents and violence, 126. Typhoid fever and diphtheria slightly decreased in the number of deaths as compared with December. The deaths from external causes were also considerably less. Scarlet fever and whoopingcough showed marked amounts of increase. Pneumonia was considerably more fatal, and the number of deaths from cancer exceeded any month during the previous year. There were 7 deaths from smallpox, and 1 death was reported from hydrophobia in the city of Detroit.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

February 21, 1903. [Vol. XL, No. 8.]

1. The Chemistry of the Tropicins. A. B. LYONS.
2. The Physiologic Action of the Mydriatic Alkaloids. HORATIO C. WOOD.
3. The Mydriatic Drugs and Their Active Principles: the Ophthalmologic Relations. CHARLES A. OLIVER.
4. The Early Appearances, Diagnosis, and Treatment of Tuberculosis of the Upper Air Tract. WALTER F. CHAPPELL.
5. A Case of Sarcoma of the Maxillary Sinus, Excision of the Upper Jaw, with Remarks. JOSEPH S. GIBB.
6. The Prophylaxis of Sinus Diseases. D. BRYSON DELAVAN.
7. Acute Sinusitis. J. A. STUCKY.
8. Cutaneous Therapy: Some of the Newer Methods. CHARLES W. ALLEN.
9. Radiotherapeutic Observations. JOSEPH ZEISLER.
10. The Prognostic Value of Tubercle Bacilli in Sputum. LAWRASON BROWN.

1.—Chemistry of the Tropicins.—Lyons discusses the nature of the bases in the several mydriatic drugs and their conversion through manipulation into one another. The name of tropicins has been given to combinations of tropin with various organic radicals, forming new synthetic alkaloids, the name applying to the natural alkaloids as well. The property of mydriasis does not belong to all the artificial tropicins, although possessed in a high degree by some of them. From the great variability in strength of the mydriatic drugs, reliable assay processes are desirable. So long as we are in doubt whether there are important therapeutic differences between the different principles an assay that determines only total alkaloids leaves much to be desired. The alkaloids themselves are easily changed by the chemicals used in extracting them. A wide field is open for useful experiment. [H.M.]

2, 3.—See *American Medicine*, Vol. III, No. 25, p. 1060.

4.—See *American Medicine*, Vol. III, No. 25, p. 1058.

5, 6, 7.—See *American Medicine*, Vol. III, No. 25, p. 1059.

8.—See *American Medicine*, Vol. III, No. 25, p. 1061.

9.—Radiotherapeutic Observations.—Zeisler believes that electric shocks from the tube play only an incidental role. Whoever is after electric action will use a hard tube. The soft tube is rich in x-rays, which are absorbed by the upper layers of the skin. Static machines are hardly fit for dermatologic purposes. A good induction coil only is to be considered. The essential element in determining the energy with which we work is the character of the light, irrespective of either voltage or amperage. He recommends a self-regulating tube. From using the soft tube he has never had any ulceration or sloughing. He uses thick sheet lead lined with flannel to protect parts adjacent to that treated. In treating the face he always covers the eyes and hair. He reports most encouraging results in lupus vulgaris and erythematosis, scrofuloderma, hypertrichosis, yscosis, acne, epithelioma, psoriasis, lichen planus, eczema, pruritus, keratosis palmaris, clavus, hyperidrosis nasi, and dermatitis staphylogenes. Zeisler agrees with those who attribute to the rays a special affinity for pathologic cell formations, which, under the influence of the rays, undergo metabolic changes and even entire disintegration. [H.M.]

10.—Prognostic Value of Tubercle Bacilli in Sputum.—If tubercle bacilli are found in one specimen it proves tuberculosis of the respiratory tract. That no bacilli are found in one examination is of little value. At least four or five specimens should be examined after the patient is directed how to collect the sputum. If the numbers steadily decrease in a series of examinations at intervals sufficiently long the patient may be improving, but the constitutional symptoms and local signs give much more accurate information. If on repeated examinations large quantities of tubercle bacilli are found the disease has probably advanced to cavitation. The morphology of the bacilli affords little or no ground for prognosis, but the short bacilli are suggestive of a more active process. The arrangement in clumps is more apt to be found in the severer cases, but may occur in all. [H.M.]

Boston Medical and Surgical Journal.

February 19, 1903. [Vol. CXLVIII, No. 8.]

1. Observations Upon Long-distance Runners. J. B. BLAKE and R. C. LARRABEE.
2. Pulse, Weight, and Temperature. J. B. BLAKE and D. D. SCANNELL.

3. Report on Pulse Tracings Taken from the Marathon Runners in the Races of 1900, 1901, 1902. ALLEN CLEGHORN.
4. The Blood. RALPH C. LARRABEE, WILDER TILESTON and WM. R. P. EMERSON.
5. The Hearts. RALPH C. LARRABEE and LAWRENCE W. STRONG.
6. Kidneys. JOHN M. CONNOLLY.
7. Medical Treatment of Intestinal Obstruction. THOMAS F. HARRINGTON.

1.—**Long-distance Runners.**—Blake and Larrabee condense the data collected by a large number of observers who examined the contestants in the Marathon races in the vicinity of Boston, the course being 24 miles in length. The pulse rate was always increased somewhat, the least in the best trained, and in those who finished slowly. In some instances it was almost as slow as at the start. Loss of weight varied from 2 to 7 pounds. Before the start the temperature varied, sometimes reaching 100.6°. After the finish mouth temperature was sometimes raised, often normal, and occasionally subnormal owing to holding the mouth open. The rectal temperature was invariably raised, reaching once 7° above normal. Pulse tracings were dicrotic. The blood showed a leukocytosis resembling that of inflammatory diseases. Hearts invariably showed enlargement before the start, increased at the finish. Murmurs, generally systolic, heard at the start were attributed to nervous excitement. Concerning the nature of those at the finish there is considerable doubt. The urine showed in every case active hyperemia, probably from the toxins of fatigue, the condition disappearing one week after the race. The amount was lessened, the color and specific gravity were higher, the reaction more acid. Albumin was present with hyaline, granular, and epithelial casts and blood. Urea was not increased, and chlorids diminished. [H.M.]

2.—**Pulse, Weight, and Temperature.**—According to Blake and Scannell the pulse rate seemed to depend on three factors: The condition of the heart; the character of the exertion, particularly in the last few minutes of the race; the time which elapsed between finish and observation. At the start men differed much in composure; at the finish all were stolid with fatigue. The maximum loss of weight was less than in football or rowing. The heaviest and lightest who completed the race weighed respectively 155 and 104 pounds. Observations through three years on 45 men show that mouth temperature is not reliable. No evidence was obtained that subnormal temperature depends on overtraining or extreme fatigue. Cleghorn reports the method employed in taking pulse tracings. The results were uniform, the curve being normal at the start and pointing to enormously low arterial tension at the end, in some cases being extremely dicrotic. This is probably due to a combination of blood concentration, the action of the "depressor nerve" in dilating the arterioles, and dilation from fatigue products. [H.M.]

4.—**The Blood.**—Larrabee, Tileston, and Emerson found that in the white counts the greatest increase was in the polymorphonuclear neutrophiles, these being more numerous relatively and absolutely at the finish. In the mononuclear elements the percentage of large forms, as compared with small ones, was invariably increased. Eosinophiles were relatively and absolutely decreased. Mast cells showed similar changes. No abnormalities were noted in the reds. The leukocytosis was of the inflammatory type. Larrabee and Strong record but one case in which a murmur was detected at the finish which was not present at the start. In all three races some were cyanotic at the finish, others pale. Enlargement of the heart at the beginning is due to hypertrophy from training. The authors discuss the causes of dilation and murmurs, and believe that all the changes manifested were physiologic. [H.M.]

6.—**Kidneys.**—Connolly found albumin to persist for at least 36 hours. The amount was greatest in the first quantity passed. Reduction of Fehling's solution in two cases was probably not due to sugar. The main physical characteristics of the contestants were as follows: Height, medium or less; weight, 110 to 140; chests not unusually large nor expansion great; legs of medium length; muscles never remarkably hypertrophied, but firm and fat-free; feet large, broad, and free from signs of compression. Unpleasant results of longest duration were blisters on the soles of the feet. [H.M.]

7.—**Medical Treatment of Intestinal Obstruction.**—

Harrington classifies the causes of obstruction which can be considered medical as impactions of fecal matter, foreign bodies, intussusception and neoplasms. He describes the symptoms. When foreign bodies have been swallowed castor-oil must not be given as peristalsis may cause more injury. Give oatmeal, unbolted flour, cornmeal or mashed potatoes. Examine the rectum frequently. In intussusception chloroform the child and inject two gallons of warm water. Bellows are not as safe. Opium is not contraindicated when there are impacted feces, as narcosis may relax the bowel. After evidences of peritonitis subside it is safe to give castor-oil, calomel or repeated enemas of warm water. The stomach should be washed three or four times daily. Surgical interference is warranted in three days if symptoms do not abate. Taxis is often helpful. Distention may be tapped, if extreme. Statistics are not encouraging to surgical interference in obstruction due to cancer and other incurable diseases, and there is little to endorse exploratory laparotomies. [H.M.]

Medical Record.

February 21, 1903. [Vol. 63, No. 8.]

1. The Treatment and Care of Tuberculous at Their Homes, and the Urgent Need of Local Sanatoriums. S. A. KNOPF.
2. The Present Status of Surgery of the Gallbladder and Bile Ducts. WILLIAM J. MAYO.
3. Postoperative Malaria, with a Report of Two Cases. JOHN T. MOORE.
4. Trachoma in the Public Schools of New York. WALTER EYRE LAMBERT.

1.—**Treatment of Tuberculous at Home; Need of Sanatoriums.**—Knopf considers sanatorium treatment the ideal one, unless the patient is so situated that identical treatment can be inaugurated at home. He describes receptacles for sputum, and discusses the etiquette of coughing, the proper clothing, the prohibition of tobacco, the arrangement of the patient's rooms, diet, the value of massage in improving digestion, the necessity for making life interesting, the need of comfort in chairs, etc., the importance of minute instructions as to walking and breathing exercises, the value of solartherapy and hydrotherapy, and of some of the newer drugs. He concludes with an argument and appeal for more sanatoriums. [H.M.]

2.—**Surgery of the Gallbladder and Bile Ducts.**—W. J. Mayo says the active gallstone, as regards necessity for operation, is analogous to chronic relapsing appendicitis. He is of opinion that they should be removed by early operation, which is less dangerous than subsequent risk without operation. He and his brother have operated on 250 such cases out of a total of 454 gallstone operations, with a mortality of less than 1%. In over 2,000 such cases in the hands of six surgeons there has been no recurrence of the stones. In the 454 cases they found cancer in 21 (5%). In 49 cases there was stone in the common or hepatic duct, with or without jaundice. In 26 cases the symptoms pointed strongly to gallstones but at operation none was found; instead there was a chronic cholecystitis, and evidently plugging had caused the symptoms. Incising the thickened bladder and drainage is the proper treatment. The "ideal" operation—closure of the gallbladder without drainage—must be resorted to in any case with caution, since the presence of gallstones is indicative of infection. It should be reserved for most part to the latent cases which are usually found in operations for other affections. Kehr says the hepatic ducts require drainage in 37% of cases, which the author thinks none too high. In choledochotomy the incised duct should be left open for drainage after the stone is removed, as suggested by Davis. [A.B.C.]

3.—**Postoperative Malaria.**—Moore, of Galveston, says malarial parasites may exist in the blood and yet there be no temperature phenomena, and it is these cases which show the tendency to relapse or to rise in temperature after operation, or any other procedure which lowers the resisting power of the individual. Malarial parasites may exist for a long time in the blood even when quinin is being taken. The only absolute test is the microscope. The blood of every patient in a malarial district should be examined carefully before operation unless the case be one of emergency. The author cites two cases which after operation had a temperature unexplained by the condition of the wounds, but which yielded readily to antemalarial treat-

ment after the parasites had been found in the blood. The author is of opinion that many patients have been subjected to operation for vague symptoms which, had a microscopic examination been made and quinin treatment instituted, would have readily subsided. [A.B.C.]

4.—Trachoma.—Lambert notes that in 36 schools inspected 13% of the pupils were excluded on account of contagious eye diseases, principally trachoma. In some cases the diagnosis may have been faulty, but the vast majority required special treatment. An ideal solution of the problem of isolation would be the setting apart of certain institutions for care of these cases. The best that can now be done is exclusion from the school. In connection with this the Board of Health has a corps of trained nurses to visit the homes, explain the seriousness of the condition, direct where the children can be taken for treatment, and instruct as to the danger of contagion. [H.M.]

New York Medical Journal.

February 14, 1903. [VOL. LXXVII, No. 7.]

1. Rudolf Virchow: An Appreciation. CHARLES L. REID.
2. Residual Urine. HENRY EWING HALE.
3. The Etiologic Significance of Heberden's Nodes. EDWARD M. MERRINS.
4. On the Local Effects of Aurantia and Its Treatment. W. MOSER.
5. The Influence of the Mind Upon the Body. JOHN B. HUBER.

1.—Virchow.—This address by Reid is an appreciation of the life and labor of Rudolf Virchow. It is exceedingly interesting and should be read in the original, as it does not lend itself to abstracting. It is one of the most admirable addresses of its kind that it has ever been our pleasure to read. Its scholarly, lofty, and philosophic tone shows that its author possesses not only wide learning along historic lines, but also a deep insight into human nature and human problems.

2.—Residual Urine.—Hale tells of a method of procedure which enables some patients to avoid what would otherwise be residual urine, thus avoiding cystitis and the necessity of catheterization. One cause of residual urine may be the hypertrophied middle lobe of the prostate behind the internal orifice of the urethra. Thus the internal aspect of the base of the bladder is divided by a transverse dam into an anterior and posterior pocket. The former is drained by the urethra, while the latter is not so drained in the upright position. When such a condition is found the patient is directed to void his urine twice daily while in the knee-elbow position. Patients in whom the bladder wall has lost its tonicity derive no benefit from such directions. [C.A.O.]

3.—Heberden's Nodes.—Merrins has reviewed the literature of this subject and finds these nodes reported in such diverse conditions as gout, carcinoma, dilation of the stomach, rheumatoid disease, congenital syphilis, and old age. He calls attention to the fact that in nearly all of these conditions there is some mechanic, chemic or toxic irritant in the system. There is also impaired general vitality, and if this is accompanied by disturbed innervation, as in rheumatoid disease, the more frequent is the occurrence of Heberden's nodes. The author concludes that these nodes are simply evidences of structural degeneration dependent upon one or more of the factors above mentioned, that they may occur in any condition where such factors are present, but that they are most likely to occur in those chronic diseases where morbid, bony changes form the principal feature of the disease, as in gout and the osteoarthritic variety of rheumatoid disease. The presence of these nodes, therefore, may be a help to diagnosis, but they should never be regarded as conclusive evidence of any particular disease, nor are they of sufficient pathologic importance to constitute a separate form of rheumatoid disease when they appear as isolated phenomena. [C.A.O.]

4.—Aurantia.—Moser reports a case to show the local effects. The patient's hands came in contact with a concentrated solution of the product. Small vesicles, swelling, and intense pruritus followed. There was no pain, and not much reddening. Later large bullas formed and the process of healing was that of a severe burn. [C.A.O.]

Medical News.

February 21, 1903. [Vol. 82, No. 8.]

1. Functional Disorders of the Biliary Secretion and Their Treatment. H. RICHARDSON.
2. The Treatment of Tuberculosis. CHARLES WILLIAM HEITZMAN.
3. A Contribution to the Surgery of the Internal Saphenous Vein. WILLIAM FRANCIS CAMPBELL.
4. Empyema of the Accessory Sinuses of the Nose. J. H. WOODWARD.
5. A New Sputum Slide. JAMES RAE ARNEILL.

1.—Disorders of the Biliary Secretion.—H. Richardson says it has been shown that the so-called chologogs of the pharmacopeia do not increase the flow of bile, but that the bile acids do increase this flow. Kehr's statistics show that 10% of persons in Germany have gallstones; in England it is estimated at 5%, and in the United States at 7½%. In melancholias gallstones is the rule, whereas they are almost unknown in maniacs. They have been occasionally found in the newborn, 2.4% of the cases occur under 20, 3.2% between 20 and 30, 11.5% between 30 and 40, 11.1% between 40 and 50, 19.9% between 50 and 60, and 25.2% over 60 years of age; they may be said to occur in one out of every four persons over 60, due to the increased formation of cholesterolin and the decreased expulsive power of the gallbladder. The mortality in operation upon noninfected cases is about 3%; in infected cases it may rise to 25%. The best means of preventing the formation of stones is a hygienic life, plenty of exercise, and when there is a tendency to deficient biliary flow, the administration of 5-grain capsules of sodium glycocholate three times daily, laxatives and the drinking of plenty of water. [A.B.C.]

3.—The Surgery of the Internal Saphenous Vein.—Campbell, of Brooklyn, says the ligation of the internal saphenous vein in Scarpa's triangle for varicosities along its course below the knee is now being much resorted to, but frequent inability to find the vein at the proper place for ligation has led to trouble. He has operated on 50 cases and as a result of careful observation he lays down a rule for finding the internal saphenous at the proper point for ligation. Find the spine of the pubes. From this point project a line 3½ inches long at a right angle to Poupart's ligament. The end of the line marks the point for the center of the incision, which should be about one inch long and parallel with the fold of the groin. The ligation will be near the saphenous opening and above the last important tributary of the vein. [A.B.C.]

4.—Empyema of the Accessory Sinuses of the Nose.—Woodward describes the anatomic relationship of the various accessory sinuses, *i. e.*, the maxillary, sphenoidal, ethmoidal, and frontal. Inflammation of the accessory sinuses may be either primary or secondary, acute or chronic. The greater number of cases are secondary to some intranasal condition. Many acute cases terminate in complete resolution, even though the inflammation may have been pyogenic in character from the outset. Others become chronic; and it is probable that the greater number of chronic pyogenic inflammations in these regions begin as an acute infection. The exanthemas, diphtheria, acute coryza, trauma, and especially influenza, are the causative factors of nearly all cases. Exception should be made of pyogenic inflammation in the maxillary antrum, for it is commonly due to extensive caries of the teeth. [A.B.C.]

5.—New Sputum Slide.—By the usual method the examiner's fingers are likely to be smeared. To overcome this Arneill has devised the following: From a thin window pane slides 5 inches by 1½ inches are cut; one end is slowly heated in the blast and bent to furnish a handle, and allowed to cool slowly. By means of a file lubricated with sweet oil the sharp edges are rounded off. This handle prevents contact with the sputum and the slide can be used in scraping the latter from the plate. [H.M.]

Philadelphia Medical Journal.

February 21, 1903. [Vol. XI, No. 8.]

1. Tropical Diseases: Fifth Lecture in a Course on Tropical Diseases. Captain CHARLES F. KREFFER.
2. The Toxemia of Pregnancy. WILLIAM H. WELLS.
3. Uterine Carcinoma: Its Treatment by the Combined Use of the Finzen Light and the Röntgen Ray. GEORGE G. HOPKINS.
4. Report of a Case of Transverse Myelitis in a Newborn Infant. ALBX-ANDER HEON DAVISSON and D. J. MCCARTHY.
5. Retinal Hemorrhages: An Aid to the Early Recognition of General Arterial Degeneration. HENRY C. HADEN.

1.—Abscess of the Liver.—Kieffer discusses the most important complication or sequel of tropical dysentery, suppurative hepatitis. Abscess of the liver is more apt to occur in the tropics, owing to the more common distribution of the chief etiologic factor, the ameba coli; and the predisposition to suppurations arising from the very common occurrence of passive congestion of the liver in the white settlers in tropical climates. Traumatic, pyemic and tropical abscess are detailed. Malaria, chill and exposure are important factors in the etiology of tropical abscess, but the greatest of all is the abuse of alcohol; 20% to 25% of the cases of severe amebic dysenteries eventuate in abscess of the liver; 85% of all tropical abscesses are due to infection from the ameba coli. Rarely severe hepatitis, running a rapid course to suppuration, begins almost with the first symptoms of dysentery, and again abscess may not take place until one or two years subsequent to the dysentery. In 90% of the cases of single abscess when the patients were operated upon early recovery ensued. In cases of spontaneous rupture into the most favored location, the colon, 50% recover. Kieffer has done three consecutive operations for three apparently distinct abscesses in one case, with ultimate recovery. The diagnosis is quite difficult unless the abscess is large and the signs so prominent as to be unmistakable. The common error of diagnosis is to call these cases malaria. [F.C.H.]

3.—Uterine Carcinoma.—Hopkins believes that we have in the combined use of decomposed light and the Röntgen rays a method of treatment that promises more for this class of sufferers than any operative, local or constitutional measure yet devised. This method is the combined use of the Finsen light and Röntgen rays, the principal dependence being the Finsen radiance. The penetrating power of the Röntgen rays speaks for great caution in its use in this region, especially in recurrent cases in which hysterectomy has been done. An hour's exposure to the Finsen light and from five to eight minutes' exposure to the Röntgen rays is a good proportion. This proportion has given good results and as yet has not produced any undesirable symptoms or done any injury. [F.C.H.]

4.—Transverse Myelitis in a Newborn Infant.—Davisson and McCarthy detail the history and postmortem findings of a case of transverse myelitis in a newborn infant. It was at first thought that the paralysis was due to a defective development of the dorsal portion of the spinal cord; but a more complete examination leaves little doubt that the condition was the result of some assault to the nervous system after complete cord formation. The caliber of the cord, as evidenced by the pial tube in this area, suggests that the spinal cord had filled this tube in the normal process of development and as a result of a hemorrhagic process, softening of the cord and resorption of degenerated cord substance, there was a loss of contour of the cord, giving the flattened (dorsal) cord. [F.C.H.]

5.—Retinal Hemorrhages.—Haden concludes that retinal hemorrhages associated with high arterial tension, and accompanied by transitory albuminuria, are significant of beginning widespread arterial degeneration; that in those cases of so called physiologic or transitory albuminuria occurring in active, healthy young business men or students, in those who are working under forced pressure, ophthalmoscopic examination should be made for retinal hemorrhages; when retinal hemorrhages occur without albuminuria, the patient should be kept under observation, the urine to be examined from time to time and the quantity passed noted. In case of finding these conditions, it is our duty to warn the patient of his condition and, as Osler says, "gain his intelligent cooperation," and preserve his life and usefulness. Two cases are detailed. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN A. O. J. KELLY

EDITORIAL COMMENT

Chronic Acetanilid Poisoning With Marked Alterations in the Blood.—An instructive instance illustrating the value of blood examinations is afforded by a case reported by Stengel and White.¹

A woman 25 years of age had for some years been suffering with insomnia and dental neuralgia, and had been taking a variety of drugs. When first seen, she had intense cyanosis, without any dyspnea or coldness of the surface, and marked acne of the face. The cardiac area was enlarged and there was a systolic murmur audible over the entire precordia. The absence of dyspnea, coldness, and edema aroused the suspicion that the patient was suffering with some form of blood poisoning or with an abnormal commingling of venous and arterial blood. The first surmise was rendered almost a certainty by the blood examination, which revealed a marked reduction in red corpuscles and an increase in the leukocytes. Stain preparations showed a large number (over 32,000) of nucleated red corpuscles per cmin. Further investigation of the history revealed the fact that the cyanosis had been present for over five years, different physicians having made different diagnoses; among others, a valvular heart lesion, a perforated intraventricular septum, and a mediastinal tumor had been diagnosed. On one occasion, while the patient was in the University Hospital, a box of compound acetanilid capsules (containing acetanilid, 3 grains; caffeine, $\frac{1}{2}$ a grain; and sodium bicarbonate, 2 $\frac{1}{2}$ grains) was discovered in a package sent to her by express. She denied having taken this medicine, but she also denied having received it. The nurses recalled that similar packages had been received before. Subsequently the patient confessed that she had taken acetanilid tablets almost continuously since her entrance into the hospital, sometimes as many as 15 or 20 a day. She further admitted that she had taken large quantities of the drug during the last four or five years. The acetanilid was withdrawn, and rapid improvement ensued. The heart dulness diminished, the cyanosis disappeared, and the sounds became entirely free from any murmur.

The effects of acetanilid, phenacetin, nitrobenzol, and other poisons of this type, as described in the reported cases, are cyanosis, profound depression or collapse, and unconsciousness; but, as a rule, dyspnea and subjective symptoms have been slight or wanting. In the acute cases, the blood changes have not been marked; but in subacute or chronic poisoning, striking and characteristic alterations in the blood have been discovered. These consist in morphologic changes in the red corpuscles, and in the appearance of nucleated cells in large numbers. Many of the erythrocytes show a granular change, which causes the hemoglobin to separate from the stroma and to collect in a denser mass or masses, the rest of the corpuscles becoming paler than normal. There is also a great variation in the size of the different red cells. The blood-plaques and the leukocytes are usually increased in number. An interesting feature in Stengel and White's case is the disappearance of all indications of cardiac disease. This is only another illustration of the indisputable fact that even the most marked signs of valvular disease need not be due to endocarditis, but may be produced by functional conditions. This in the case under discussion was probably a dilation of the heart. The widespread use of proprietary headache powders and tablets, many of which contain acetanilid or its congeners, renders the occurrence of poisoning in acute as well as chronic forms an ever-present possibility, and physicians should remember the revelatory powers of a blood examination, particularly when cyanosis is the most striking morbid feature.

REVIEW OF LITERATURE

Fatal Gastric Hemorrhage.—Tiegel¹ reports three cases of fatal hemorrhage from the stomach; two of them were in patients previously apparently well, the third had been suffering with chlorosis and mitral insufficiency for some years. In all of them the hemorrhages were sudden and unexpected, and death occurred within a few days of their onset, due to recurrence of hemorrhage and collapse. The interesting point in all three cases lies in the fact that the seat of the profuse bleeding was found in very slight alterations of the gastric mucous membrane, which were discovered only after prolonged search, and before certainty could be claimed for them they had to be verified by microscopic diagnosis. In two cases the ulcers were but three mm. in diameter, in the third case it was the size of a lentil, but in every case an eroded bloodvessel was found within the ulcerated portion. These cases teach the fact that the diagnosis of "capillary hemorrhage" and "gastric hem-

¹ University of Pennsylvania Medical Bulletin, February, 1903.

¹ Münchener medicinische Wochenschrift, November 25, 1902.

orrhage without pathologic basis" can only be made after the most searching macroscopic and microscopic examination has failed to reveal the site of the hemorrhage. [E.L.]

Esophageal Carcinoma Simulating the Clinical Picture of Aortic Aneurysm.—Kuckein¹ gives in detail the case histories of two patients, who at autopsy were found to be afflicted with carcinoma of the esophagus, but who during life were believed to be suffering with aortic aneurysm. There were many symptoms justifying this diagnosis; the chief among them were radiating, paroxysmally occurring pains, coming on without apparent cause, and dyspnea due to compression of the trachea. Both conditions were present in both cases. The first case presented complete left-sided recurrent paralysis. Difficulty in swallowing was completely absent in the first case, due to the unilateral position of the carcinoma; in the second patient it improved in the late stages of the disease, probably due to increase of the lumen from ulceration. The first case presented slight pulsation of the chest wall. In both cases an expansile shadow was seen in the skiagraph, which later was found to be due to the pulsation of the aorta against the solid growths. One patient had bloody expectoration. The cachexia was not marked in either patient. The diagnosis was based upon the general combination of symptoms, which certainly leaned much more toward aneurysm of the arch of the aorta than carcinoma of the esophagus. [E.L.]

Sanitary Legislation as Applied to Tuberculosis.—Taylor² states that sanitary measures must not be harsh in character. Patients must be enrolled in a university extension course against tuberculosis. Notification is absolutely necessary. The orphans of tuberculous parents, specially those found in tenements, are fit subjects for State care. If removed to a hospital and found free from tuberculosis they should be transferred to a colony in a healthy rural district. [A.G.E.]

Examinations Concerning the Amount of Albumin Digestion in the Stomach of Man With and Without Simultaneous Administration of Carbohydrates.—To determine what percentage of the albumins is digested by the stomach of healthy adults, Heinrich³ gave his subjects 200 cc. of strong bouillon on an empty stomach; this was removed an hour later and after centrifugating a portion of it, the nitrogen of both liquid and solid portions was determined after Kjeldahl's method. He performed in all eight experiments, and found that when meat alone was given one-third of the albumens was dissolved during the first hour. This took place without liberation of free hydrochloric acid. When carbohydrates were added to the proteid diet, proteolysis was facilitated, the increase averaging 10%. [E.L.]

The Differentiation of Diphtheria Bacilli from Pseudodiphtheria Bacilli by Agglutination.—Schwoner⁴ reports his results in the following conclusions: A serum obtained by immunization with diphtheria bacilli agglutinated diphtheria bacilli in great dilution (1:10,000). It agglutinated pseudodiphtheria bacilli and other bacteria in dilution corresponding to normal horse serum (1:5—1:10). The two varieties of bacilli are therefore easily differentiated by means of this serum. Serum obtained by immunization with pseudodiphtheria bacilli agglutinated only bacteria from the same culture. There are many varieties of the pseudodiphtheria bacilli. [E.L.]

Asepsis of the Clinical Thermometer.—Devine⁵ calls attention to the danger of carrying germs from one patient to another by means of the clinical thermometer. In a considerable research he has found little on this subject in the textbooks. In private practice each patient should have his own separate thermometer or the physician should carry his thermometer in a case containing a solution of mercuric chlorid, 1:5,000 to 1:2,000, in alcohol. In hospital practice the thermometers should be kept with rigid care in an antiseptic solution when not in use. [A.B.C.]

Typhoid Bacilli in Diseases of the Respiratory System During Typhoid Fever, and Their Appearance in the Sputum.—Glaser⁶ states that although typhoid bacilli

have been found a number of times in the sputum of pneumonic patients, he does not consider them the etiologic factors in the disease. Pneumococci are also present in all instances, and usually in much larger numbers than typhoid bacilli. He reports a case presenting the symptoms of both diseases in a typical manner, and in which the diagnosis was confirmed by autopsy. Pneumococci were present in the consolidated lung in enormous numbers, typhoid bacilli as isolated rods; the latter's presence in the lung is evidently accidental and a part of the general blood infection. In another case, during the fourth week pneumonia developed; the sputum contained large numbers of typhoid bacilli. From a pleural effusion which followed, the bacilli were also isolated. In this case was the pneumonia due to the pneumococci and not to the typhoid bacilli? The hemorrhagic character of the sputum serves to differentiate the pneumonia of typhoid fever from ordinary pneumonia, but a hemorrhagic sputum during typhoid fever does not necessarily indicate pneumonia; hemorrhagic infarction is also quite common, and may present the same kind of sputum. He relates in detail a case to show the difficulty of differentiating between pneumonia and hemorrhagic infarction. [E.L.]

On the Protective Action of the Omentum.—De Renzi¹ communicates the result of experiments which he has practised together with M. Boeri, and which prove that the omentum plays an important role in maintaining the activity of the circulation of the abdominal organs, particularly that of the spleen. [C.S.D.]

Tuberculosis of the Thyroid Gland.—But few such cases have been reported, and although some of them were claimed to be primary this is difficult to prove; the only one which came to autopsy had in addition to a large thyroid focus isolated miliary nodules of the lungs. Clairmont² reports the case of a child of 2 years, otherwise healthy, which developed in the course of three weeks a quickly growing mass in the region of the thyroid gland. On account of intense dyspnea an operation was performed, and a tumor removed containing in its interior cheesy foci. The microscope showed it to be tuberculous. Six months later, on account of a fistula and a recurrence, a second operation had to be performed. This mass also showed tuberculous granulation tissue. As since then the child has apparently completely recovered and no other tuberculous focus is discoverable, the author considers this an instance of primary disease. The diagnosis is impossible without the microscope; the treatment is operative, and on account of the dyspnea must usually be performed very quickly. [E.L.]

Antipyresis in Children.—Saunders³ states that the urgency of antipyresis depends on concomitant symptoms and not on the height of the mercury alone, it being very questionable if even moderate temperatures in comparatively mild diseases should be disregarded if there is evidence of suffering. The combined method of drugs preceded by hydrotherapeutic measures is not sufficiently employed. The coal-tar products may be used with safety in many cases, as early in scarlet fever, influenza, etc. The combination of phenacetin and camphor is found advantageous. Attention is called to the value of pilocarpin in diphtheria and scarlet fever. In pneumonia veratrum viride is the safest antipyretic, those who decry it being the ones who have used it least. Veratrum is also one of the best remedies for the relief of headache in the first week of typhoid fever. [A.G.E.]

Treatment of Diabetes.—Eichhorst⁴ places no confidence in the medicinal treatment of diabetes, expecting results only from the use of a suitable diet. He has not been successful with salol, antipyrin, or other drugs, and has found the improvement following a season at Carlsbad or Neuenahr, not to be due to the water, but rather to the strict diet prescribed in these places. He discusses the diet necessary for diabetics, dwelling on the substitution of saccharin or dulcin for sugar, of graham bread for ordinary bread, and the fact that fatty substances must make up the caloric value of a diabetic diet. He prefers the slow withdrawal of carbohydrates and

¹ Deutsche medicinische Wochenschrift, November 6, 13, 20, 1902.

² St. Paul Medical Journal, February, 1903.

³ Münchener medicinische Wochenschrift, December 2, 1902.

⁴ Wiener klinische Wochenschrift, November 27, 1902.

⁵ Boston Medical and Surgical Journal, February 12, 1903.

⁶ Deutsche medicinische Wochenschrift, October 23 and 30, 1902.

¹ La Semaine Médicale, November 12, 1902.

² Wiener klinische Wochenschrift, November 27, 1902.

³ Pediatrics, January, 1903.

⁴ Therapeutische Monatshefte, 1902, Vol. xvi, p. 443.

sugar, and their substitution with animal diet; he warns against their complete withdrawal in cases in which a considerable loss in weight results. As a beverage he prescribes pure spring water, to which small quantities of lactic or citric acid may be added, or alkaline and carbonated mineral waters. Alcoholic liquids of all kinds, especially those containing much sugar and carbohydrates, are to be avoided. He uses milk and cream in spite of their milksugar. Coffee and tea are to be used only in diluted form. The scale is a very important factor in the treatment of diabetics; by its means the daily amount of food, as well as the weight of the patient may be carefully noted. The urine must act as control, especially when bread is again given to the patient; 25 grams (400 grains) of bread should be started with, and this increased 10 grams (160 grains) each day, until a daily quantity of 100 grams (3½ ounces) is reached. As soon as sugar reappears, or symptoms of itching, neuralgia, cramps in calves, etc., show themselves, strict diet must again be taken up. [E.L.]

Care of Human Glanders.—Gabrielides and Remlinger¹ report a death from lymphangitis and multiple abscesses, which proved upon examination to have been the result of infection with the bacillus of glanders. The studies which they made of the blood indicate that the agglutination reaction is possibly applicable to the diagnosis of glanders in human beings. [C.S.D.]

Syphilitic Tumor of the Stomach.—Einhorn² reports the case of a man of 42, who for seven years had complained of digestive disturbances. He suddenly began to complain of gastric pain, which gradually became worse. Abdominal examination shows an irregular tumor of the epigastrium, apparently connected with the stomach. Test-meal gave increased amount of free hydrochloric acid. On account of this, the long duration of the illness, the slight emaciation, the well preserved motility and a history of syphilis, he made a diagnosis of gumma and placed the man upon mixed treatment. After six weeks the patient had entirely recovered and the mass had disappeared. [E.L.]

Variola and Varicella.—Swoboda³ says there exists a grave variety of varicella—varicella varioliformis. He concludes that in varicella, as in variola, there are all forms and gradations, so that in a sporadic case, or at the beginning of a smallpox epidemic, a differential diagnosis may be impossible. The dualists, therefore, are wrong in stating that the two diseases may be separated on morphologic and clinical grounds. Etiology only remains true to us in case the originally infecting case can be traced. The fact that a varioliform varicella exists is also of theoretic importance; it does away with the objection to vaccination, which has been based on the claim that an individual can contract variola after having been successfully vaccinated, or having had variola, in as much as we have to do in most of such cases with the varioliform variety of varicella. He reports a number of cases in support of his theory. [E.L.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

REVIEW OF LITERATURE

Modifications and Improvements in Operations on the Biliary Passages.—Mayo Robson⁴ says no medicament has yet been discovered which will dissolve gallstones, though general medical treatment may give relief in catarrh of the bile passages associated with cholelithiasis. Cholecystotomy is generally recognized as the operation aimed at in the treatment of affections of the gallbladder and bile ducts, but it is impossible to say before the operation what particular plan the operator will have to adopt on reaching the seat of the trouble. Many operations are, therefore, in a sense exploratory. With jaundiced patients the author now employs heroic doses of calcium chlorid, 2 gm. (30 gr.) doses by the mouth, or 4 gm. (60 gr.) doses by the rectum, three times a day for two or three

days preceding and following the operation. His incision was formerly vertical through the linea semilunaris. He now makes an incision through the middle of and parallel to the right rectus, separating its fibers and incising the posterior sheath with the peritoneum. If the gallbladder is distended and there is no jaundice, a simple incision of three inches is sufficient, but when necessary to explore the hepatic, common, or the deeper parts of the cystic duct, he prolongs the incision upward in the interval between the ensiform and the right costal margin as high as possible. It will be found by lifting the lower border of the liver in bulk the whole of the gallbladder, the cystic and common ducts are brought near to the surface, and enough traction can be made on the gallbladder by an assistant to hold the liver in this position while the operator proceeds with such manipulation of the passages as is requisite. By this incision and the lifting up of the liver border, instead of the gallbladder and cystic duct making a considerable angle with the common duct, an almost straight passage is formed from the fundus of the gallbladder to the entrance of the bile duct into the duodenum, and the whole is under the eye of the operator. He considers this incision a vast improvement over any other he has used. As a rule cholecystotomy is performed and a tubular drain is inserted, the tube being brought out through the dressing and its distal end passed into a sterile bottle beside the patient, which serves as a receptacle for excessive biliary discharge and prevents oft-repeated change of dressings. Cholecystectomy is preferred under certain favorable conditions, and essentially where the gallbladder is septic and its presence is a menace to the life of the patient. The author states that in the common duct cholelithiasis, especially where there is a small floating gallstone, it is common to find the head of the pancreas enlarged and hard, the result of chronic pancreatitis. This strongly simulates cancer, but subsides on removal of the stone. The chief lessons he wishes to teach are that we should operate early, before serious complications have ensued, and in operating we should do thorough, expeditious and careful work. [A.B.C.]

The Packing of Bone Cavities.—A. von Mosetig-Moorhof¹ presented a communication at the December, 1902, meeting of the Imperial-Royal Society of Vienna on the results of his experience in packing bone, in cases of necrosis or of osseous suppuration. The mixture used by the speaker for replacing the lost bone is composed of 60 parts of powdered iodoform, 40 parts of spermaceti and 4 parts of oil of sesamum. This mixture is sterilized at 100° C. for one hour and a quarter, and cooled with stirring. It becomes liquid at from 40° to 45° C. In practice, the diseased portion of the bone having been thoroughly removed after detachment from the periosteum, the cavity formed is washed with a 1% formalin solution and dried with sterilized gauze and with jets of hot air. The cavity is then filled with the above mixture heated to 50° C. which solidifies in the course of a few minutes. A number of cases were exhibited in which this proceeding has been followed with entire success and perfect cure. A. Fraenkel, in commenting on the above communication, remarked that the essential element is the total removal of diseased tissue and perfect asepsis. He has employed with success thoroughly sterilized silicious earth. [C.S.D.]

Review of 720 Gallstone Laparotomies with Consideration of 90 Cases of Drainage of the Hepatic Duct.—Kehr² reports the results of 720 laparotomies for gallstones which he has performed during a period of 12 years. He states that stones in the biliary passages do not produce pain until infection is added, when the resulting exudate dislodges the stone into other parts of the ducts, producing the symptoms of biliary colic. Jaundice is present in but 10% to 20% of cases when stones are lodged in the gallbladder or cystic duct; in 66% when they are lodged in the common duct. Enlargement of the liver is rare, and enlargement of the gallbladder disappears as soon as the chronic stage of the disease is reached. Spontaneous escape of a stone into the intestinal tract gives rise to a fistula, which often acts as a guide to an ascending cholangitis. A cure through medical measures is never

¹ La Semaine Médicale, November 5, 1902.

² Münchener medicinische Wochenschrift, December 2, 1902.

³ Wiener klinische Wochenschrift, November 20-27, 1902

⁴ British Medical Journal, January 24, 1903.

¹ La Semaine Médicale, December 17, 1902.

² Münchener medicinische Wochenschrift, October 14, 21 and 28, 1902.

effected. He advises operation in cases of cholecystitis, not helped by rest, in cases in which the stones do not leave the cystic or the common ducts, in chronic occlusion of the duct, and in acute purulent cholecystitis, for operation is less dangerous than expectant treatment. Usually he only drains the abscess, leaving the removal of stones to a secondary operation. He warns against waiting too long for operation. The operations performed most frequently by him are cystostomy and cystectomy. Of late he performs the latter especially often. The two comprise 542 operations in his series of 720. Numerous operations had to be performed for complications—63 gastroenterostomies, 30 closures of fistulas between gallbladder and intestine, 25 pyloroplasties, etc. Pancreatic palpation has shown the pancreas diseased in 34% of cases. He lost but 19 patients, or 31% of 535 pure gallstone laparotomies, combining with these 185 others in which a combination of operations was performed at the same time. An advantage of cystectomy, especially when combined with drainage of the hepatic duct, is that the stones are so thoroughly removed that there is little chance of a recurrence. [E.L.]

Cholecystectomy.—Moynihan¹ states that cholecystectomy was first performed July 15, 1882, by Langenbuch. It is indicated in injuries of the gallbladder, rupture, stab, or bullet wounds; in gangrene of the gallbladder; phlegmonous cholecystitis; membranous cholecystitis; chronic cystitis with dense thickening of the walls of the bladder and cystic duct; in chronic cholecystitis when the gallbladder is shriveled, puckered, and universally adherent; in hydrops or empyema due to blocking of the cystic duct by stone, stricture-growth, or in inflammatory products; in cases of fistula between the gallbladder or cystic duct on the one hand and the stomach, duodenum or colon on the other; in multiple lacerations of the gallbladder or cystic duct; in primary carcinoma of the gallbladder. The operation is described at length. He recites six cases in which the operation was performed, each being an example of one of the above enumerated conditions which warrant this operation. [A.B.C.]

Complete Destruction of the Third Left Frontal Convolution: With Recovery.—Berthomier² (Moulins) reports the case of a man of 66, who in June, 1900, suffered from an extensive fracture of the cranium together with almost complete destruction of the frontal lobe. Notwithstanding the extent and gravity of the lesions the patient recovered. The man became lefthanded, and notwithstanding the destruction of the convolution of Broca, he presented no trouble as to speech. [C.S.D.]

How Shall We Anesthetize?—Witzel³ prefers ether to chloroform, since the latter is a depressant to the heart, and ether is a stimulant. Of the various methods in use for producing narcosis, he recommends the drop method. It requires more practice than the other methods, but is exceedingly satisfactory. By this means the patient inhales no more ether than is absolutely necessary, and the amount of ether used is kept at a minimum. Two individuals are required for the etherization, the physician holding the pulse in one hand and etherizing with the other, his assistant holding the mask over the forcibly retracted head. A hypodermic of morphin given from 45 minutes to one hour before anesthesia will, in most cases, prevent the primary stage of excitation. To prevent complications of the respiratory tract, he thoroughly disinfects the mouth and the air passages before the anesthetic is begun. He places the patient with his head very low and his neck strongly retracted. This forced reclination prevents oral fluids from entering the air passages, and permits the throwing off of tracheal secretions. He ventilates the air passages after the operation by means of systematic respiratory movements. The author insists upon everything being done methodically, and therefore all preparations are made beforehand, and anything the etherizer may be in need of is placed close to his hand on a table. Nausea and vomiting are very rare occurrences after this method. He condemns the combination of morphin and hyoscin with the anesthetic. [E.L.]

Surgical Treatment of Acute Osteomyelitis.—In a boy

of 9, with a severe osteomyelitis of two weeks' duration, Cumston¹ resected the lower half of the tibia, leaving the periosteum intact. In nine weeks the tibia appeared to be perfectly solid. A plaster dressing was then applied and the patient allowed to go about on crutches. Seen nine months after operation the boy was found to be in perfect health, with a leg to all appearances normal and quite as strong as its fellow. Cumston says that amputation or disarticulation should be resorted to only exceptionally, where there is complete pathologic change in the bone accompanied by destruction of the periosteum and more or less complete necrotic change in the soft parts. Subperiosteal resection is especially indicated in childhood and adolescence, but in certain cases is successful in the adult. [A.G.E.]

Hydatid Cyst of the Pleura.—Ransom and Willis² report the case. The patient was a woman of 43. She had been in ill health for two years, her illness having begun with symptoms that suggested gastric ulcer. On examination of the chest it was found to be normal, except for an area of absolute dullness at the left apex in front, extending from the clavicle to the third intercostal space. She was put under treatment, and expectoration, which before had been rather profuse, ceased after a month. She was sent to the country and gained much in weight. After several months she again began spitting large quantities of phlegm, the area of dullness persisted. Nothing in the sputum indicated any of the common pulmonary diseases. Hydatid cyst was suspected. An incision was made four inches in length, the center of which corresponded with the second intercostal space in the midclavicular line. The pectoral and intercostal muscles were separated and the pleura exposed. An exploring needle was thrust into the dull area and clear fluid was withdrawn. The opening was enlarged and much fluid evacuated. The cavity was a hydatid cyst of the pleura with no apparent communication with the lung, the latter being displaced merely by pressure of the cyst. A drainage tube was inserted, and after a few days the entire cyst wall came away. It was as large as the human urinary bladder. The patient made a good recovery, though a later operation for the removal of the second and third ribs to permit collapse of the chest wall became necessary. [A.B.C.]

Tracheotomy Followed by Direct Insufflation as a Treatment to Prevent Death in the Course of Chloroform Anesthesia.—Thiery³ holds that artificial respiration and rhythmic traction of the tongue is insufficient for successfully combating accidents following the use of chloroform. On the contrary he finds that tracheotomy followed by direct insufflation gives excellent results in cases of apparent death. [C.S.D.]

Cholecystotomy for Stone in the Common Duct.—Ross⁴ records the case. The patient was a woman of 57 years who had had attacks of biliary colic since 40 years of age, after the birth of her last child. The attacks occurred irregularly until four years ago. They then became more frequent, and during the past 12 months they had been so severe that life was considered in danger and even at her advanced age operation justified. The operation was performed under chloroform anesthesia, the gallbladder was found distended with bile, which was withdrawn by means of a cannula, and the viscus opened. A single stone which weighed over two drams was found in the common duct and removed. Nothing further being found the wound was closed with drainage, and the patient made an uninterrupted recovery. [A.B.C.]

Diagnosis by Means of the Cystoscope.—By means of the cystoscope Halban⁵ diagnosed a renal calculus which had come from the right kidney; the corresponding ureteral orifice was edematous, lacerated and eroded. After some days the orifice was almost normal. In another patient he saw a diverticulum of the bladder wall entering into the composition of an inguinal hernia. This diverticulum could be seen to disappear by external pressure. In a third case following gonorrhoeal urethritis a mass developed in the floor of the bladder near the vesical orifice. It closed off the urethra making catheterization necessary. The cystoscope made the diagnosis

¹ Pediatrics, January, 1903.

² British Medical Journal, February 7, 1903.

³ La Semaine Médicale, October 22, 1902.

⁴ British Medical Journal, January 24, 1903.

⁵ Wiener klinische Wochenschrift, November 27, 1902.

¹ British Medical Journal, January 24, 1903.

² La Semaine Médicale, October 22, 1902.

³ Münchener medizinische Wochenschrift, December 2, 1902.

and suggested the treatment. In a fourth case coils of intestine could be seen through the posterior wall of the bladder. At each peristaltic wave the bladder wall could be seen to move with the intestinal loop. A diagnosis of adhesions to vesical peritoneum was made. [E.L.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Menstrual Epilepsy.—The case reported by Fry¹ was that of a young married woman who had not been pregnant, and who had epileptic attacks at each menstrual period. At first the attack preceded each flow, but later occurred about the ninth day after its cessation. The left ovary was enlarged, tender, and adherent. It was removed, but the epilepsy persisted. Four months later the remaining appendages and the entire uterus was removed. Four light convulsions occurred during the two following months, but none have occurred now for 14 months. Nervous twitchings have also disappeared, and the patient is in the enjoyment of full health. [A.G.E.]

The First Stage of Labor in Relation to Uterine Rupture.—E. H. Tweedy² defines the beginning of the first stage of labor as the moment when the contraction of the uterine body is accompanied by a relaxation of the circular fibers in the cervix. Uterine contractions alone, the presence of blood-stained mucus, or a patulous canal are frequently present before labor begins. Uterine polarity results from an overstretched condition of the nerves of the lower segment causing paresis of the circular fibers. The cervix being fully dilated does not necessarily imply a sufficiently open os to permit the passage of the fetus. What is usually described as rigidity of the os is simply expansion to its utmost limit, the first stage of labor necessarily ending with a tear. The anterior lip is not easily incarcerated between the pubes and descending fetus. Its elongation is due to the retraction of the posterior cervical lip and the consequent dragging upward of the os which cannot sufficiently dilate. Such an os will in primiparas almost certainly rupture and the laceration cannot be immediately sutured, not only on account of the edema of the anterior lip, but because the posterior lip is taken up and there is nothing to which to stretch it. In multiparas on account of deposition of fibrous tissue the os may neither dilate nor tear, the rupture occurring in the lower uterine segment and vaginal vault, being preceded by none of the usual premonitory symptoms. [H.M.]

Endometritis.—Herman Boldt³ discusses at length endometritis. The local treatment giving the promptest relief from bleeding in cases of chronic endometritis is undoubtedly to be found in the judicious use of the curet. About 60% of the women are relieved from atypic bleeding for a variable time by cureting. The general condition of the patient in all instances requires careful supervision. Good food, proper exercise, baths, and douches are all important adjuvants. After the endometritis has become chronic, it should be treated with intrauterine applications of one of the usual remedies. A 10% solution of carbolic acid is to be preferred. Frequent intrauterine irrigations with large quantities of a mild antiseptic solution will render good results. [F.C.H.]

Disadvantages of Ventrofixation.—Gradenwitz,⁴ in discussing this subject, makes this summary of his conclusions: Ventrofixation by attachment to ligament stumps after removal of adnexal tumors is unjustifiable. Although retroflexion or inclination of uterus exists, still ventrofixation remains superfluous since the stumps are not ligated together but fastened with separate ligatures. Ventrofixation by attachment to the base of the ligaments without operation on the adnexa is not advisable because it promises the danger of forming pockets, and better results will be obtained through the Alexander-Adams operation. Ventrofixation by attachment to the anterior wall of the fundus is the most certain method of heal-

ing retroflexion but is not advisable, because of the danger of metritis, abdominal hernia, and disturbance of pregnancy and labor. In the stretching of the ligaments there comes danger of ileus. The Alexander-Adams operation may serve as a substitute after a previous posterior colpotomy; and occasionally after the climacteric, vaginofixation. He adds we must thank Kreutzmann, since as an eloquent monitor he opened the battle against ventrofixation. [W.K.]

Treatment of Placenta Prævia.—Fry¹ reports four cases, supplementing a series of 14 previously reported. The mother has been saved in every instance. Bipolar version and slow extraction were employed in 11 of the 18 cases. There is no argument for cesarean section in view of these results. Fry makes it a rule to examine under anesthesia every patient who bleeds during pregnancy. The uterus is emptied as soon as placenta prævia is recognized. When version by any method has been done, the secret of success is to deliver very slowly. Haste is not necessary, as the plugging of the cervical canal by the child prevents hemorrhage. [A.G.E.]

The Control of Hemorrhage in the Removal of Pelvic Tumors.—Herman Pearce² believes that the best way to control hemorrhage in the removal of pelvic tumors in the female is to search out and control the vessels that are the source of the hemorrhage as early as may be in the operation. When the tumor is parovarian and its growth takes it between the layers of the broad ligaments, in all broad ligament cysts, in intraligamentous fibroids of large blood supply and intimate connection with the surrounding tissues, and in extrauterine pregnancy with intraligamentous rupture, it is better to tie off the superficial blood supply at all points along the pelvic side, and then instead of tying again on the uterine side go to the healthy side including the uterus and healthy adnexa in the occlusion, and do a panhysterectomy from the opposite (healthy) side, coming upon the deep blood supply of the growth from below and behind. The electrothermo clamp is a valuable instrument. Ligatures is the best method for controlling bleeding vessels. Suitably prepared chromicized catgut is preferred to silk or any of the other ligature materials. [F.C.H.]

Primary Abdominal Pregnancy in an Angle of the Omentum.—Witthauer³ reports a case of extrauterine pregnancy, in which an angle of the omentum appears to have been the primary site of the pregnancy. When the abdomen was opened an ovarian cyst about the size of a hen's egg, with the intact and unchanged right tube, was removed. The left adnexa was normal and the uterus not much enlarged. The cause of the hemorrhage was found in a hematoma situated at an angle in the right side of the pelvis. This was removed with the attached portion of the omentum, and when subjected to examination proved to be an extrauterine pregnancy. As there was neither in the tube removed nor elsewhere any signs of any previous connection with the ovum, the writer is convinced that a wandering of the ovum from the left ovary to this point in the pelvis had taken place and that this was a clear case of primary abdominal pregnancy in an angle of the omentum. He believes that such cases occur more frequently than hitherto supposed and are the true cause of unexplained cases of retrouterine hematocele and hemorrhage. [W.K.]

The Röntgen Ray in Gynecology.—Eden V. Delphey⁴ enumerates the various conditions under which the Röntgen ray may be used in and above the pelvis; but the main use of the Röntgen ray in gynecology is in the treatment of malignant neoplasms. Whenever the diagnosis is made sufficiently early, the tumor and often all the pelvic reproductive organs should be removed by surgical means so as to get entirely beyond the malignant growth and prevent recurrence. When this can be done the protuberant portion, if of the cervix, should be removed, and the rest subjected to the influence of the Röntgen ray. Quite a number of cases of carcinomas have been very much improved and epitheliomas have apparently been entirely cured by this means. As certain death is otherwise the only outlook, the patient should be given the benefit of the chance. [F.C.H.]

¹ Washington Medical Annals, January, 1903.

² Medical Press and Circular, October 22, 1902.

³ Annals of Gynecology and Pediatrics, January, 1903.

⁴ Zentralblatt für Gynäkologie, January 31, 1903.

¹ Washington Medical Annals, January, 1903.

² Annals of Gynecology and Pediatrics, January, 1903.

³ Zentralblatt für Gynäkologie, January 31, 1903.

⁴ Annals of Gynecology and Pediatrics, February, 1903.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPELMAN

REVIEW OF LITERATURE

Treatment of Phosphaturia by Calcium Sulfate.—

Etterlen¹ has obtained good results from the administration of chemically pure calcium sulfate in phosphaturia. It is given in cachets, in the dose of from 1.5 to 2 grams (22 to 30 grains) daily, mixed with an equal quantity of magnesium carbonate. If desirable, Contrexéville water may be substituted, as it contains 1.22 grams (19 grains) of calcium sulfate to each liter (quart). This treatment produced marked improvement in over 30 patients having phosphaturia. [L.F.A.]

The Therapeutic Value of Bismutose.—Bismutose is an odorless, tasteless, fine yellowish-white powder, containing 22% metallic bismuth. It is but slightly soluble, thus diminishing its toxicity, increasing its astringency and emollient properties, as it can act over greater surfaces. It is useful in all inflammations of the stomach and intestines, in hyperacidity, dyspepsia, and probably gastric ulcers. Starck² has employed it in 41 different cases with good success, his results being quicker than in other bismuth salts. It may be administered by rectum in cases of obstinate vomiting. The dose for a child varies from 6 to 10 grams (90 to 150 grs.) daily. [E.L.]

Medicinal Treatment of Acute Nonsuppurative Otitis Media.—Mahu³ directs that children suffering from acute nonsuppurative otitis media be kept indoors and that they be given a purgative. Every two hours the temporal and mastoid region and the ear should be covered with a compress dipped in a solution of sodium bicarbonate, 60 parts to the 1,000, as hot as can be borne by the back of the hand. The whole may then be covered by a piece of oiled silk and held in place by a bandage. Before applying the compress, a few drops of the above solution may be dropped into the auditory canal, or the following solution may be substituted:

Cocain hydrochlorate	0.1 gram (1½ grains)
Resorcin	0.75 gram (12 grains)
Sterilized neutral glycerin	10 cc. (2½ drams)

Three or four drops of this solution may be instilled at every second dressing. Three times a day the child should be placed on a bed with his head low and a few drops of the following placed in each nostril by means of a dropper:

Menthol	0.6 gram (9 grains)
Sterilized oil of sweet almonds	60 cc. (2 ounces)

The mouth and pharynx should be washed out every three hours with a quart of boiled water as hot as can be borne. This may be accomplished by means of a fountain syringe placed about two feet above the patient. At the end of two days, if the pain persists and the temperature is high, the ear should be examined and if the tympanum is red and bulging paracentesis should be performed.

Santonin in the Treatment of the Lightning Pains of Locomotor Ataxia.—Combemale and Chaber⁴ have confirmed the findings of Wegro relative to the value of santonin in the treatment of the pains of locomotor ataxia. In the dose of 0.2 gram (3 grains) daily it rapidly calms these pains and prevents the occurrence of a series of attacks. The same result is obtained from smaller doses, 0.06 to 0.13 gram (1 to 2 grains) daily, but they must be continued for several days, and gastric crises may occur in the meantime. The subcutaneous injection of 0.04 gram (⅔ of a grain) of mercuric benzoate has also been used successfully in controlling the pains of this disease. [L.F.A.]

Treatment of Laryngeal Tuberculosis.—Two symptoms especially torment the patient with laryngeal tuberculosis:⁵ hoarseness and dysphagia. Hoarseness may be combated by the application of hot compresses to the neck. These should be changed every half hour during the day, and at night should be replaced by a cotton bandage. The patient may take hot drinks, to which small doses of dionin may be added if the

cough is troublesome. The air of the room may be kept moist by steam impregnated with compound tincture of benzoin. Sprays containing menthol, 0.5 gram to 30 cc. (7½ grains to the ounce), or cocain hydrochlorate, 0.1 gram to 30 cc. (1½ grains to the ounce) may be used with advantage. The dysphagia may be combated by applications of the following collutory a short time before each meal:

Carbolic acid	5.0 grams (75 grains)
Cocain hydrochlorate	10.0 grams (2½ drams)
Glycerin	60.0 grams (2 ounces)
Cherry-laurel water	40.0 grams (10 drams)
Not to be taken internally. [L.F.A.]	

[This advice is reproduced but not commended. As a rule hot moist inhalations aggravate laryngeal tuberculosis. For local application orthoform, suprarenal extract, guaiacol, menthol, and iodoform in various combinations are generally superior to cocain. Anesthesin, too, promises well, but in my hands has thus far been disappointing. s.s.c.]

A Local Application in Whoopingcough.—Guida¹ recommends painting the pharynx with the following solution of carbolic acid in whoopingcough:

Crystallized carbolic acid	1 gram (15 grains)
Solution of cocain hydrochlorate 2%	5 cc. (80 minims)
Glycerin	15 cc. (4 drams)

This should be applied during the attacks of coughing. [L.F.A.]

External Antiseptics in the Treatment of Eczema.—Gaucher² believes that in eczema the so-called antiseptics act less as antiseptics than as astringents. Among these are boric acid, calomel, salicylic acid, the naphthols, silver nitrate and corrosive sublimate. Boric acid and calomel are usually incorporated with vaselin in the proportion of 3 grams to 30 cc. (45 grains to the ounce) in the treatment of pustular eczema. Salicylic acid is equally useful. Gaucher considers fresh lard superior to either vaselin or lanolin as the base for this drug in the proportion of one part of salicylic acid to 25 parts of lard. Betanaphтол produces the same effects but is more irritating than salicylic acid and is usually employed in the proportion of one part to 50 of lard. Silver nitrate, recommended by Alibert, can be used in chronic eczema only over limited areas in 1% to 3% solutions. Corrosive sublimate is used as a lotion in the strength of 1 to 200, when the skin is indurated and thickened without ulceration. [L.F.A.]

Treatment of Pericarditis with Effusion.—Carrière³ directs that (1) revulsion be practised; a blister may be applied and repeated if necessary; (2) diuresis should be favored by the administration of from 2 to 3 quarts of milk daily. If there is diarrhea 0.1 gram (1½ grains) of pancreatin may be added to each portion. If there is hyperacidity 1 gram (15 grains) of sodium bicarbonate may be given with each portion of milk. The patient should also be given:

Theobromin	0.5 gram (7½ grains)
Powdered squill	0.1 gram (1½ grains)
For one cachet.	

Four of these should be taken during the first and second days and eight during the third day. In children this combination must be used with caution and in much smaller dose; (3) the heart must be sustained; (4) if the condition is grave, with a tendency to collapse, the following potion should be given in 24 hours:

Ammonium acetate	4 to 10 grams (1 to 2½ drams)
Tincture of canella	4 grams (1 dram)
Todd's potion	150 grams (5 ounces)

(5) the predominating symptoms should be combated; (6) paracentesis should be performed (a) if the effusion occurs rapidly, if the signs of compression appear; (b) if the pulse is small or irregular; (c) if there is a tendency to syncope or cyanosis; (d) if there is skodaic resonance posteriorly; (e) if there is edema of the wall; (f) if the fever is irregular or continues high, if the color is bluish. There are no counterindications save the existence of advanced tuberculosis. In performing paracentesis the instruments and seat of operation must be aseptic; the puncture must be made as low as possible in the area of dulness, preferably about ⅓ of an inch above the inferior limit and about 2 inches to the left of the sternum; the

¹ Journal des Praticiens, Vol. xvi, No. 45, 1902, p. 716.
² Münchener medicinische Wochenschrift, November 25, 1902.
³ Bulletin Général de Thérapeutique, Vol. cxlii, No. 20, 1902, page 798.
⁴ Journal des Praticiens, Vol. xvii, No. 1, 1903, p. 8.
⁵ Journal des Praticiens, Vol. xvi, No. 46, 1902, p. 728.

¹ Bulletin Général de Thérapeutique, Vol. cxlii, No. 18, 1902, p. 720.
² Journal des Praticiens, Vol. xvii, No. 1, 1903, p. 8.
³ Bulletin Général de Thérapeutique, Vol. cxlii, No. 18, 1902, p. 713.

needle should be forced directly backward, then parallel with the lower border of the heart, from right to left; evacuated very slowly and as completely as possible; the trocar withdrawn quickly and the part dressed antiseptically. If the liquid is purulent a nontoxic antiseptic liquid may be used. [L.F.A.]

FORMULAS, ORIGINAL AND SELECTED.

For fetid expectoration in chronic bronchitis or pulmonary tuberculosis:

- Ammonium ichthyolate 3 gram (5 grs.)
- Eucalyptol 2 drops
- Balsam of Peru 3 gram (5 grs.)

Mix and encapsulate. Dose: One capsule three or four times daily. [s.s.c.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended February 20, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
California :	Fresno.....Jan. 1-31.....	15	
	Los Angeles.....Jan. 31-Feb. 7.....	2	
	Sacramento.....Jan. 31-Feb. 7.....	1	
	San Francisco.....Jan. 24-Feb. 8.....	13	
Colorado :	Colorado Springs.....Jan. 31-Feb. 7.....	1	
	Denver.....Jan. 31-Feb. 7.....	8	
Illinois :	Belleville.....Jan. 31-Feb. 7.....	1	
	Galesburg.....Jan. 31-Feb. 14.....	7	
Indiana :	Elwood.....Feb. 8-15.....	3	
	Evansville.....Jan. 31-Feb. 14.....	9	1
	Indianapolis.....Jan. 31-Feb. 14.....	121	24
	South Bend.....Jan. 31-Feb. 7.....	1	
Iowa :	Davenport.....Jan. 31-Feb. 14.....	12	
	Ottumwa.....Jan. 3-10.....	1	
Kentucky :	Lexington.....Jan. 31-Feb. 14.....	4	
	Newport.....Jan. 31-Feb. 14.....	2	
Louisiana :	New Orleans.....Jan. 31-Feb. 12.....	3	
		2 cases imported.	
Maine :	Bliddeford.....Feb. 7-14.....	12	
	Eastport.....Feb. 7-10.....	13	
	Portland.....Jan. 31-Feb. 7.....	1	
Maryland :	Baltimore.....Feb. 7-14.....	1	
	Boston.....Feb. 7-14.....	4	2
Massachusetts :	Haverhill.....Feb. 7-14.....	1	
	Lynn.....Jan. 31-Feb. 7.....	1	
Michigan :	Detroit.....Feb. 7-14.....	38	1
	Flint.....Jan. 31-Feb. 14.....	4	
	Grand Rapids.....Feb. 7-14.....	10	
	Port Huron.....Feb. 7-14.....	12	
Nebraska :	Omaha.....Jan. 31-Feb. 7.....	7	
	Manchester.....Jan. 31-Feb. 7.....	10	
New Hampshire :	Camden.....Feb. 7-14.....	1	
	Jersey City.....Feb. 8-15.....	3	1
New Jersey :	Newark.....Feb. 7-14.....	1	
	Plainfield.....Feb. 7-14.....	1	imp'ted.
New York :	New York.....Feb. 7-14.....	3	
	Chillicothe.....Jan. 24-Feb. 14.....	11	
Ohio :	Cincinnati.....Feb. 6-13.....	7	
	Cleveland.....Jan. 31-Feb. 14.....	16	4
	Dayton.....Feb. 7-14.....	1	
	Hamilton.....Jan. 31-Feb. 14.....	2	
Pennsylvania :	Toledo.....Jan. 31-Feb. 14.....	15	1
	Butler.....Jan. 17-Feb. 7.....	2	
	Erle.....Jan. 31-Feb. 7.....	4	
	Johnstown.....Jan. 31-Feb. 14.....	5	
	3 cases imported.		
Philadelphia :	Philadelphia.....Feb. 7-14.....	30	2
	Pittsburg.....Jan. 31-Feb. 7.....	18	3
	York.....Jan. 1-31.....	1	
South Carolina :	Charleston.....Jan. 31-Feb. 7.....	14	1
	Utah :	Ogden.....Jan. 1-31.....	17
Wisconsin :	Salt Lake City.....Jan. 31-Feb. 7.....	21	
	Milwaukee.....Jan. 31-Feb. 14.....	9	

SMALLPOX—FOREIGN.

Austria :	Prague.....Jan. 17-24.....	7	
Barbados :	Barbados.....Jan. 16-30.....	8	
	Belgium :	Antwerp.....Jan. 17-24.....	4	2
Brussels :	Brussels.....Jan. 17-24.....	1	1
	Canada :	Amherstburg.....Jan. 24-31.....	1
Winnipeg :	Winnipeg.....Jan. 31-Feb. 7.....	1	
	Las Palmas.....Jan. 17-24.....	33	2
Colombia :	Cartagena.....Jan. 26-Feb. 1.....	1	1
Ecuador :	Guayaquil.....Jan. 24-31.....	1	1
France :	Rhélms.....Jan. 18-24.....	1	
	Hamburg.....Jan. 24-31.....	1	
Germany :	Lelpsc.....Jan. 17-24.....	1	1
	Dublin.....Jan. 17-31.....	1	1
Great Britain :	Leeds.....Jan. 24-31.....	4	
	London.....Jan. 24-31.....	6	
	Manchester.....Jan. 17-31.....	27	1
	Nottingham.....Jan. 17-31.....	14	1
India :	Bombay.....Jan. 6-20.....	61	
	Calcutta.....Dec. 13-Jan. 17.....	2	
Madras :	Madras.....Dec. 20-26.....	2	2
	Palermo.....Jan. 10-31.....	15	5
Mexico :	City of Mexico.....Jan. 26-Feb. 1.....	4	4

Russia :	Moscow.....Jan. 10-24.....	7	4
	Odessa.....Jan. 17-24.....	2	
	St. Petersburg.....Jan. 10-24.....	71	21
Straits Settlements :	Singapore.....Dec. 27-Jan. 3.....		3
Turkey :	Constantinople.....Jan. 18-25.....		1

SMALLPOX—INSULAR.

Philippines :	Manila.....Dec. 13-27.....	2	
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YELLOW FEVER.

Colombia :	Panama.....Jan. 26-Feb. 9.....	5	2
Ecuador :	Guayaquil.....Jan. 17-24.....		20
Mexico :	Vera Cruz.....Jan. 31-Feb. 7.....	2	2

CHOLERA—INSULAR.

Philippines :	Manila.....Dec. 13-27.....	16	10
	Provinces.....Dec. 13-27.....	1,130	813

CHOLERA—FOREIGN.

India :	Bombay.....Jan. 9-20.....		1
	Calcutta.....Dec. 13.....		152

PLAGUE—INSULAR.

Hawaii :	Honolulu.....Feb. 5.....		1
Philippines :	Manila.....Dec. 13-27.....		1

PLAGUE—FOREIGN.

India :	Bombay.....Jan. 6-20.....		818
	Calcutta.....Dec. 13-Jan. 17.....		85
	Karachi.....Dec. 28-Jan. 11.....	53	52
	Madras.....Dec. 20-26.....		1
Mexico :	Mazatlan.....Feb. 4-12.....	11	23

Changes in the Medical Corps of the U. S. Army for the week ended February 21, 1903:

HARTUNG, HENRY, hospital steward, Fort Columbus, is transferred to Fort Myer, to relieve Hospital Steward Harry T. Brown. Steward Brown will proceed to Fort Greble to relieve Hospital Steward Henry B. Staley. Steward Staley will proceed to Fort Adams to relieve Hospital Steward Carl W. H. Westman. Steward Westman will proceed to Manila, P. I., for assignment to duty.

MILLER, ROBERT S., hospital steward, company of instruction, No. 2 hospital corps, Fort McDowell, is transferred to Frankford Arsenal, Philadelphia, Pa., to relieve Hospital Steward William Edwards. Steward Edwards will proceed to Manila, P. I., for assignment to duty.

DILLON, G. P., contract surgeon, is granted leave for two months, from about February 24.

Changes in the Medical Corps of the U. S. Navy for the week ended February 21, 1903:

HAWKE, J. A., medical director, retired, detached from Naval Hospital, Mare Island, Cal., and ordered home—February 13.

SIMONS, M. H., medical inspector, ordered to Washington, February 24, for examination for promotion, and thence to Naval Hospital, Mare Island, Cal.—February 13.

FITTS, H. B., surgeon, detached from the Naval Hospital, Sitka, Alaska, and ordered to the Pensacola—February 14.

NELSON, H. T., JR., acting assistant surgeon, ordered to Marine Barracks, Sitka, Alaska—February 14.

BERTOLETTE, D. N., medical inspector, detached from the New York and from duty as fleet surgeon of the Pacific Station, and ordered home to wait orders—February 18.

LEWIS, D. O., surgeon, detached from the Pensacola and ordered to the New York for duty as fleet surgeon of the Pacific Station—February 18.

GRIEVE, G. C., acting assistant surgeon, ordered to the Navy Yard, Boston, Mass.—February 18.

DYKES, J. R., acting assistant surgeon, ordered to the Franklin—February 18.

DABNEY, V., acting assistant surgeon, ordered to the Pensacola—February 18.

BLACKBURN, T. C., acting assistant surgeon, ordered to the Culgoa—February 19.

Changes in the Public Health and Marine-Hospital Service for the week ended February 19, 1903:

KALLOCH, P. C., surgeon, to proceed to Augusta, Me., for special temporary duty—February 14, 1903.

BROOKS, S. D., surgeon, to assume temporary charge of the Portland quarantine station during absence of Surgeon P. C. Kalloch—February 14, 1903.

FRANCIS, EDWARD, assistant surgeon, relieved from duty in the hygienic laboratory, and directed to proceed to Mexico and Durango, Mexico, for special temporary duty—February 13, 1903.

WARD, W. K., assistant surgeon, granted leave of absence for four days from February 13, 1903, under paragraph 191 of the Regulations.

BULLARD, J. T., acting assistant surgeon, granted leave of absence for thirty days from February 13, 1903—February 13, 1903.

HOLT, E. M., pharmacist, to proceed to Louisville, Ky., and report to Passed Assistant Surgeon G. B. Young, chairman of board of examiners, to determine his fitness for promotion to the grade of pharmacist of the second class—February 16, 1903.

MORRIS, G. A., pharmacist, granted leave of absence for seven days from February 11, 1903, under paragraph 210 of the Regulations.

Promotion.

GUITERAS, G. M., passed assistant surgeon, commissioned as surgeon to rank as such from December 13, 1902—February 11, 1903.

American Medicine

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"Science" and the Relative Value of the Sciences to Humanity.—We would admit that none could be more grateful than are we for the grant of \$10,000 a year by the Carnegie Institution for the revival of the *Index Medicus*. However, a sign of the dominant feeling of the trustees as regards the value of medical and biologic science is sharply given in the rejection of the plea for a few thousand dollars, not annually, but once for all time, to fill the gap of four years in issuing the publication. A far more startling demonstration consists in the announcement that one-half of the entire income of the fund is to be devoted permanently each year to the single science of physics—\$150,000 annually to be spent by a fully-manned laboratory at Washington and \$100,000 to be distributed to investigators throughout the country. History got a single grant of \$5,000 last year. Literature, philology, art, anthropology, psychology—these are apparently held to be not one-two-hundred-and-fiftieth part as valuable to the nation and to civilization as is physics; biology, including medicine, hygiene and the scientific prevention of a hundred kinds of social and economic disease—these things do not seem of sufficient interest to the trustees. Why should not Mr. Carnegie make another attempt?

The Diabetic Flour Swindle.—According to a Massachusetts State Board of Health report, of thirteen samples of diabetic flour, or flour prepared for the use of diabetics and purporting to be free from starch, only three samples, the product of one manufacturer, were found to be free from starch; the other ten, or nearly 80% of the samples collected, were found not only to contain starch, but that in large quantities, seven being found with 60% or more of starch. These were in reality but little better than whole wheat flour, and were sold at prices varying from eleven to fifty cents per pound. There are probably few of the better informed of general physicians who would not say, "All the better for the patient, so far as his health is concerned," because bread that does not contain starch doubtless injures him more than the best-made, well-baked "crusty" wheat bread. There seems to be a deal of indefiniteness and a vast deal of difference of opinion among physicians as to these questions of bread and diet for diabetic patients. These differences do not show themselves so much in the textbooks, where there is

general uniformity of advice. But when it comes to getting his bread the poor diabetic finds that the physician knows little or nothing as to the chemic and digestive qualities of the breads he can buy. The matter is left without oversight to the bakers and commercial agents, precisely where it should not be left, and much to the perplexity of the patient. No wonder that the diabetic's health fails when he tries to digest some of the "bread" he is advised to get! After trying it he can but think, if he does not know that his disease is a modern one, that the origin of the scriptural injunction against giving a stone when bread is asked for arose from the experience of his poor ancient brethren in trying to live while conforming to the scientific diet-list of those days.

A sharp distinction is needed as to glycosuria and diabetes, but so little is it drawn that a very up-to-date cyclopedia, relying for its facts upon the textbooks, fails utterly to note it, and would have the patient, who has only a temporary and controllable glycosuria, frightened out of his wits by calling it diabetes and emphasizing the seriousness and hopelessness of his disease. There is every reason to believe that such a functional glycosuria is entirely a different condition from permanent diabetes, and should no more be confounded with it than should the athlete's albuminuria be classed with chronic interstitial or parenchymatous nephritis. This controllable, or passing glycosuria, although appearing in minor degrees, and even continuously throughout life, is not at all incompatible with what may be called health, with much normal work of any kind, and with long life. This is especially true if the patient does not become alarmed and does not indiscriminately indulge in "diabetic breads," and some of the other foods as expensive to his digestive system as to his purse.

Reporting Causes of Death.—The inaccuracies and indefiniteness of death-returns constantly vitiate the returns of vital statistics, and sometimes render them absolutely worthless. The Bureau of Vital Statistics of the Census Department, according to the *Sanitary Bulletin*, recommends greater definiteness and exactness, and specifically points out the following terms as needing explanation:

ABSCESS.—The cause of the abscess should be given, as

tuberculosis, traumatism, etc., and the *organ* or *part* of the body affected should be stated.

ACCIDENT.—Always state the *nature* of the accident, then the nature of the injury.

AMPUTATION.—See Surgical Operation.

ASCITES.—See Dropsy.

ASPHYXIA.—Give the *cause* of the asphyxia, whether *disease* or *external violence*, and if the latter state whether accidental, suicidal, etc., and the exact nature of the cause of death, as by illuminating gas, gas from stove, suffocation by gas, or deprivation of air in mine, etc. Similar terms are choking, strangulation, and suffocation, deaths from which causes should be always explicitly defined.

ASTHENIA.—What *disease* caused the asthenia?

CANCER.—Always state *organ* or *part* affected.

CHILDBIRTH.—If puerperal septicemia, this should be stated.

CHLOROFORM, ETHER, ETC.—See Surgical Operation.

CONGESTION.—This word without qualification should never be used in a certificate of death.

CONVULSIONS.—Give the *cause* of the convulsions, which are mere symptoms that may occur in many diseases. In females of childbearing age it should be ascertained whether they were of puerperal character.

DEBILITY.—Whether alone, or qualified as "general debility," "infantile debility," "senile debility," etc., this return is practically worthless. Give the *cause* of the debility, if known.

DENTITION.—Inquiry should always be made for the *disease*, as enteritis, etc., that caused the death of the teething infant.

DISEASE OF BRAIN, LUNGS, ETC.—When a mere statement of disease of a certain organ or part is given inquiry should always be made as to the *nature* of the disease. Many returns of this class are worthless on their face, as, for example, "liver complaint," "lung trouble," "kidney disease," etc., so far as exact diagnoses are concerned.

DROPSY.—The *cause* of the dropsy, a mere symptom of cardiac, hepatic, renal, or other organic disease, should be given.

ECLAMPSIA.—See Convulsions. The term "eclampsia" is likely to include cases of puerperal convulsions, hence special inquiry should be made in this respect.

EXHAUSTION.—A worthless term. What *disease* or *injury* caused the exhaustion?

FEVER.—What was the name of the fever?

FRACTURE.—What was the *cause* of the injury? Deaths should be classified under fractures only when there is no provision for classifying under the cause of the injury.

HEART FAILURE.—The use of this term is a stigma upon American statistics. It should never be accepted, but inquiry should be made whether some organic disease of the heart was intended, and if not, then for the disease that caused the "heart failure." Not infrequently diphtheria, puerperal septicemia, or other cause of death has been concealed by the ignorant or intentionally misleading use of this term.

HEMORRHAGE.—From what *organ* or *part* of the body did the hemorrhage occur? What was the *cause* of the hemorrhage? Inquire especially for puerperal hemorrhage, and in hemorrhage of the lungs (frequently reported as "hemorrhage" without qualification) always inquire as to whether the case was not a tuberculous one.

INANITION.—In some localities this term covers a multitude of imperfect diagnoses. What was the *cause* of the "inanition"? The *name* of the disease should be given that led to this condition.

INFANTILE.—This adjective adds no information in addition to the statement of age. *What disease caused death?*

INFLAMMATION.—Give the location of the inflammation and its cause, if known. Also ascertain whether acute or chronic.

MALASSIMILATION.—What *disease* caused the malassimilation?

MARASMUS.—What *disease* caused the marasmus (wasting)? This is a very unsatisfactory statement, as usually made, and is practically worthless for statistical purposes.

NATURAL CAUSES.—What was the *disease* causing death?

PERITONITIS.—Inquiry should be made for the *cause*, especially in deaths of females of childbearing age. Was the peritonitis puerperal, traumatic, etc.?

SEPTICEMIA.—Inquiry should be made for the cause, especially in deaths of females of childbearing age. Was the septicemia puerperal, traumatic, etc.?

SPASMS.—See Convulsions.

SPINAL DISEASE.—Was this a disease of the *spine* or of the *spinal cord*? What was the *nature* of the disease? If a tuberculous disease of the spine, that fact should be clearly stated.

STILLBORN (with age indicated).—A stillbirth is a child born dead. Returns are not infrequently received in which a definite age, in hours or days, is stated for a "stillborn" child. Ascertain in such a case whether the child was in fact dead at birth, in which event correct the statement of age to correspond; or, if the statement of age is found to be correct, then the child was not "stillborn," and some other cause should be substituted.

STRANGULATION.—See Asphyxia.

STRICTURE.—Stricture of *what*? It is usually of the urethra in males, but should be specified.

SUFFOCATION.—See Asphyxia.

SUICIDE.—What were the *means* used?

SURGICAL OPERATION.—What was the operation undertaken for? The *disease* or *injury* requiring a surgical operation should be stated. It may be assumed, as a rule, that the operation was required for some disease or injury, and that it was properly performed; hence, the operation in itself should not be assigned as the sole cause of death. A similar rule applies to deaths during the administration of anesthetics for surgical purposes.

TUMOR.—Was it a cancer? Whether a cancer or benign tumor, the *organ* or *part* of the body affected should always be stated.

TYPHOID PNEUMONIA.—Was this typhoid fever or pneumonia?

The Philadelphia Board of Health gives the following instructions to physicians:

Certificates will be returned for additional information, which give any of the following diseases, without explanation, as the sole cause of death:

Abortion, abscess, cellulitis, childbirth, convulsions, hemorrhage, gangrene, gastritis, erysipelas, meningitis, metritis, miscarriage, necrosis, peritonitis, phlebitis, pyemia, septicemia, tetanus. (Any one of these may be the result of an injury, and thus be a subject for investigation by the coroner. If it is not, the certificate should make that fact plain.)

No certificate giving "heart failure," "dropsy," or other mere symptom, as the sole cause of death, will be accepted, unless accompanied by a satisfactory written explanation.

In all cases of death from cancer or tumor, the physician must give the location of the same in order that it may be properly classified.

In all cases of stillbirth the physician must give the date of delivery in lieu of date of death, and must also give the surname of the child.

No certificate will be accepted which is mutilated, illegible, inaccurate, or any portion of which has been erased, interlined, corrected or altered, as all such changes impair its value as a public record.

Some Fallacies of Natality Statistics.—According to the frequently quoted figures of President Eliot, 28% of the surviving members of the Harvard classes, '72 to '77 inclusive, are unmarried, and those that are married have only two living children. The net result is a decrease of 28%. The interest in these figures seems to be based upon an absurd fear that this is really an indication of "race suicide," and that the educated classes must reproduce their kind or fearful consequences are to follow. But surely we now have thousands of educated men where were formerly tens, and hence the present

educated classes are not the children of the former educated classes. Then what is the object, evolutionary and social, of education in a democracy? To make a rigid caste system of the educated, or to bring the uneducated up into the condition of the educated? It would appear that a republican form of society should avoid any particular attempt at encouraging, and certainly any worry over the failure, of the educated to reproduce their kind, and be glad that the spreading of culture is such that the ignorant are progressively securing the benefits of education. It should not be forgotten that socialism and individualism have also a word to say as to the general utility of a too numerous educated or leisure class. The economic aspect is emphasized that such persons are largely directive and, to use a harsh phrase, parasitic, and must be fed and housed and supplied with leisure and luxury at the expense of the workers. One need not assent to this view to see that it has a cogency that in these days of trade-unions should not be forgotten. Lastly, it should be noticed that "education" is by no means confined to college learning. Many of our best educated men have not been, and still are not, college bred, and the fittest is by no means always the educated. It is a wellknown fact that those plants and animals most poorly adapted by nature and environment to protect their offspring produce the largest number, and the converse is equally true, applying not only to lower organisms but to mankind as well. The survival of the fittest and the wiping out of the unfit has the effect of overcoming apparent dangers attaching to a low birthrate among the physically, mentally, and morally competent members of society. What is needed is not an increase in the size of the family among the competent and well-to-do, but more intelligent and far-reaching efforts so to modify the conditions of the now submerged classes that they may become better off and competent to increase in numbers. While such increase will carry with it a corresponding restriction in the number of offspring, it will also mean the survival of a greater percentage of efficient and desirable citizens. Real race suicide is taking place among the ignorant, the diseased, the pauperized, the depraved, and the insane, despite their fecundity.

Water as a Nutrient.—Dr. John Uri Lloyd rightly contends that greater attention should be given to the role played by water as an integral part of food as a nutrient, in the same sense that carbon and nitrogen are nutrients when found in certain molecular combination. Physiologists and food analysts have been content to base their tables of food valuations upon the inorganic elements obtained by disruption of the molecules of plants and animals, but have disregarded the food value of the water itself; they have failed to recognize the combined water of organized water-bearing foods as an integral part of food. There is general recognition of the importance of water in the elimination of waste products, in facilitating the diffusion of gases, in regulating bodily temperature, and as a carrier of dissolved nutrient solids, but too little consideration has been given to the fact that carbon, nitrogen or hydrogen pure

and simple are not available as food, and cannot be assimilated as such; only when combined with water or by means of water do the elements become tissue-builders or heat-producers. There are abundant reasons for regarding water as an integral part of rather than as a mere carrier of food. It is the combined water that forms the real foundation of tissue pabulum, and it is to this vitalized or easily vitalized water-molecule that Professor Lloyd very happily calls attention.

"What knowledge is of most worth?" is the momentous question with which Herbert Spencer startled the pedagogic world over forty years ago, and in his famous "Essay on Education" he answers it as follows: "As vigorous health and its accompanying high spirits are larger elements of happiness than any other things whatsoever, the teaching how to maintain them is a teaching that should yield in moment to no other whatever." But so tardy has been the acknowledgment of this great truth that today on all sides we find chronic complaint, physical weakness, and overwhelming depression that proper instruction might have prevented. Recently in editorial comment on the belated but none the less worthy intention of the new Teachers' College in New York to prepare properly its matriculants to embody the plain teaching of health in their life work, a wellknown magazine¹ remarks that it may not be extravagant to say that this movement is of larger possible benefit than anything that has hitherto been done in education. It is not merely the rules of hygiene that are needed, nor the ordinary course in school physiology. Personal hygiene is applied physiology, but a proper understanding of certain elemental truths of human physiology must be acquired before they can be applied. Knowledge of the normal functions of the body and the simple methods of keeping them in healthy action is the one thing that no educated person should be excused from possessing; yet most of our children reach maturity without parental or scholastic instruction in the most elemental matters of health.

The Teaching of Personal Hygiene.—The ordinary instruction in physical education, physiology, dietetics, and exercise is not sufficient, and it is often faulty. It is not desirable to produce athletes, physical culture fanatics, or practitioners of new-fangled and erratic "systems" and "pathies"? What is needed is simple instruction by capable teachers in the proper care and use of the body, authoritatively based upon the best available modern anatomic, physiologic and hygienic data. We should not have "every man his own physician," as seems often the object in lectures, periodicals, and books relating to health; rather give every man fundamental knowledge that will enable him to understand and, if necessary, formulate the requisite rules of health, and to distinguish scientific medicine from quackery. Stripped of its superfluous technicalities this knowledge may be imparted to any one of average intelligence and education, and we strongly urge more literature and personal explanation in this direction

¹ World's Work, February, 1903.

from the American medical profession. The subject is much too important to be left entirely in the hands of lay teachers and writers.

The Big and the Little Advertiser.—The dominant ethical sentiment of the profession has determined that advertising is contemptible. And yet there are two classes of advertisers who go on their way apparently without punishment, sometimes, it would appear, without criticism. The first is the little sneak who, by secret methods or by his own hand, supplies the newspapers with notices that he has recovered his health, is going to Europe, or that he did such and such an operation on the great so and so. The little sneak advertiser claims that he cannot be honest and achieve success, and he quotes as his justifier the example of the big sneak, the great physician, who makes exactly the same use of the newspapers, and from exactly the same motives, but all the time pretending it is for scientific, professional, and altruistic reasons. The little advertiser knows that the big one, in his heart, cares no more for science, for the profession, or for the world, than does he, the little one. Hence the growth of the numbers of the small advertisers, who say they have no other way to get even with the superior advertising ability of the presidential and professorial advertiser. Now in this matter the profession is the great sufferer from the stupid cunning of both scamps, and therefore the great mass of physicians who despise both kinds of advertisers should devise some way to bring to both a consciousness of their crimes. Not by any means hoping for their reform—such men never reform—but only to make them less bumptious and less certain of their results. The great error they now make is in thinking they deceive anybody. Their ways are known to all of their colleagues, and our laughter and detestation are growing, but so long as their tricks bring them patients, membership and office in medical societies, so long are ethics, religion, and lasting fame scorned by them. We should show the advertisers, little and big, that we will have naught of them. The cure lies in our refusal of association, social and professional.

The Trials and Humors of Prosthetic Charity.—We have previously commented upon the oversight of the charitable to help the poor who have lost legs, arms, eyes, etc., by means of the many ingenious devices of the prosthetic artist. We have learned of a New York benevolent society which has done something in this way, but the results have not always been entirely encouraging. We have read somewhere of a battle between the patients of a hospital in which their crutches and artificial legs were almost the sole reliance of the fighters in place of "arms." The secretary of the association says that the last man for whom they bought an artificial leg was "so happy that he had to celebrate," and the celebration was so lively that his \$75.00 leg was soon in splinters. An artificial eye supplied to another who is called an old "professional man" (the word has more than one significance) also resulted in a condition of great "happiness" when he came to thank the secretary.

"One struggling widow who was keeping together a family of four or five children, placed her false teeth in a glass of water one night before retiring. The children had a little dog which, as illnourished as the rest of the family and having more appetite than sense, found the teeth in the night and chewed them up. The secretary smiled, but she bought the widow a new set of teeth.

"How could the woman eat if she had no teeth?' she inquired. 'And how could she work if she could not eat? There are people marked down on charity books today as incorrigibly lazy who got there through dyspepsia caused by bad teeth.'

"An artificial nose, for a man who had been deprived of that useful member through accident, and a \$50 flexible hand, not to be detected in a glove, for a girl, were among other odds and ends supplied."

The man without a hair on his head was out of work because of his appearance, and became so sensitive over the matter that he refused to go to the association rooms because he "would have to take off his hat to the ladies." But he sent his wife to state the facts in the case and petition for a wig. The wig was bought, the man got a job, and, happily, refrained from "celebrating." A girl in a store also "lost her job" because fever had left her without hair. "The association bought her a \$15.00 wig, and it proved so efficacious that she was married within six months." We know of one very careful and provident spinster who uses a crudely constructed "peg-leg" during the six common week days, but on Sunday she is happy in the use of a well constructed and artistic artificial leg—or, perhaps, under the circumstances, we should say limb. Despite all discouragements and "celebrations" the association finds that the handicap of lost arms, legs, eyes, etc., is so great for the poor that it keeps on with its really noble work, and on the whole believes it is of great service to them.

The Situation at Ithaca.—As Ithaca is a college town the epidemic of typhoid fever raging there has attracted attention all over the country, and has brought anxiety and sorrow to many widely scattered homes. The disease is unquestionably water-borne; and investigation has shown that the two watersheds that supply the town and the university have been indescribably contaminated with the offal and waste from hog-pens, barnyards, privies, cesspools, and vaults. Both the town, and the university authorities are aroused to their duty, which, in view of the condition for which they are responsible, they cannot shirk. In the students' infirmary everything is being done to give the best care to those stricken with the disease. While the majority seem to be genuine cases of typhoid fever, there have been some of paracolon infection; and these, like the cases of genuine typhoid, have caused some fatalities, the total number of deaths at this writing being nineteen. Although there has been quite an exodus of students, no real stampede has taken place owing to the manly conduct of the members of the senior class; and we are informed that there are still about 1,200 remaining. Several deaths have occurred among those students who were taken to their homes, at a greater or less distance from Ithaca, after having been attacked. Without wishing to refer particularly to these cases, we are of the opinion that typhoid fever patients do not stand trans-

portation very well. Several plans to improve the Ithaca water-supply are in contemplation, and the one that seems most likely to be adopted is the method of sand-filtration, toward defraying the expense of which Cornell University has offered to contribute \$150,000. In addition to this, it has been decided to cleanse the watersheds of the several creeks, regardless of cost. In this way the water will have been greatly purified before it reaches the filter. The lesson taught by the experience of Ithaca should be taken to heart by other cities, lest they, too, have to pay the fearful penalty for carelessness in sanitary matters.

EDITORIAL ECHOES

Imaginary Bright's Disease Produced by Quack Advertisements.—The following clipping is taken from a recent daily paper:

SUICIDE DUE TO CAUSELESS FEAR.

Andrew J. Teggin, an artist, whose pictures have been exhibited at the Academy of Design, took chloroform to-day and died soon afterward at the New York Hospital. Teggin's death was the end of five years' dread of Bright's disease. Though eminent specialists had assured him he had no symptoms of the disease, he persisted in believing that he was doomed to die from it, and this so worked on his mind that he killed himself rather than wait for the end he felt sure would come.

No statement of the case of the man's morbid psychology is mentioned, but the following passage published prominently in another portion of the same paper is highly suggestive:

TEST YOUR KIDNEYS.

Let some morning urine stand for 24 hours in a glass or bottle. If then it is milky or cloudy or contains a reddish brick-dust sediment, or if particles or germs float about in it, your kidneys are diseased.

Could anything be more fiendishly deceptive? The fact that the "remedy" that this advertisement proclaims has been on the market for many years, and that, to our knowledge, this particular trap has been laid for some years, indicates that there must have been many victims. Imagine the horror that must fill the mind of the poor fellow who views a cloud of phosphates or bacteria, which can hardly fail to be present in the urine left in a "glass or bottle," as he appreciates that he is in the clutches of the dread Bright's disease; for does he not know that this is as surely fatal as is cancer or consumption? And if, because of winter's cold, no bacterial development occurs, and the urine remains clear, does he escape? Not if the advertiser knows it! For in that event there is provided the alternative of "a reddish brick-dust sediment" of uric acid coming down in the acid urine. What must be the sum total of the secret worry, the growing fear, the startling terror at every mention of the death of some one from Bright's disease, among the many who have been deluded by this advice? —[*Jour. Am. Med. Asso.*]

Cigaret Premiums.—In the United States House of Representatives the Committee on Ways and Means has reported favorably on a bill which imposes a penalty upon any manufacturer of tobacco who affixes to any package of tobacco, snuff, cigars, cigarettes, a mark, label, wrapper, or any other device which promises or offers a premium to the holder. It is intended to stop the issue of gifts to purchasers of these articles in quantity, and especially as applying to the youthful buyers of cigarettes. Previous to 1857 this practice had been carried on to an enormous extent, but the Dingley Act, which went into effect at that time, abolished this nefarious traffic, but since it remained in force only five years, sufficiently long to establish its great value, by the lapse of time it has ceased to be operative, and a revival of the old practice by the manufacturers of cigarettes is therefore apparent, hence the present bill.

AMERICAN NEWS AND NOTES.

GENERAL.

Appropriations to Pay Doctors' Bills.—A movement is on foot to have Congress pass a measure to provide for the payment of doctors' bills incurred by the Spanish war soldiers as the result of their services in Cuba. It is said that many of the men in service were compelled to pay out large sums for doctors' bills because the medical service of the Army was not adequate or else because the afflicted were too far removed from medical supplies.

Inspection of Emigrants.—It is asserted that because of United States Commissioner Williams' close application of the law as affecting emigrants, the directors of the Hamburg-American Steamship Company and the North German Lloyd Line have instructed their agents in Europe to accept no emigrants who are unable to pass the requirements of the authorities in New York. This is done out of self-preservation, so far as the companies are concerned, as the rejection of one out of every five of the emigrants and their deportation would consume the profits of the companies.

Hospital Benefactions.—PHILADELPHIA, PA.: The Medico-Chirurgical Hospital has received \$5,000 from the Baldwin Locomotive Works, and \$1,000 from William P. Henszey, a member of the firm. This sum will be added to the fund for the reconstruction of the main building of the institution, which was recently badly damaged by a boiler explosion. TARRYTOWN, N. Y.: According to the will of the late Mrs. Ellen Josephine Banker, of this place, the society of the New York Hospital will receive \$25,000 with which to build on the new grounds of the asylum in White Plains a pavilion for the accommodation of insane patients. CUMBERLAND, MD.: The Davis Memorial Hospital, which is being built by ex-Senator and Mrs. Davis, the parents of Mrs. Elkins, as a memorial to their son, who was drowned on a cruise off the coast of Africa, is nearing completion, and will cost in the neighborhood of \$100,000.

Miscellaneous.—NEW YORK CITY: Dr. Alvah H. Doty has been reappointed Health Officer of the Port of New York. Dr. Doty has held this office since January, 1895.—*Columbus Hospital*: The following appointments were made at the meeting of the medical board of the Columbus Hospital held on February 2: Dr. Frank Farquhar Ferguson was appointed consulting physician to the hospital; Dr. Frederick C. Keller attending physician, and Dr. Henry Hazen attending physician in children's diseases. WASHINGTON, D. C.: The Senate has passed a bill pensioning the widow of the late Major Walter Reed at the rate of \$125 a month. PHILADELPHIA: Dr. LeConte has been appointed to succeed Dr. John V. Shoemaker as Surgeon-General of the National Guard of Pennsylvania. TORONTO, CAN.: Dr. Goldwin Howland, a graduate of Toronto University, recently received the degree of M.R.C.P. in London, England. It is said that there are only six other Canadians holding this degree.

An Example of English as Evolved by the United States Senate.—When the bill to increase the pension of the widow of the late Walter Reed was under consideration in the Senate, the desire to express gracefully the recognition of the services rendered by the eminent surgeon led one of the Senators to propose that the following words be added to the bill: "In special recognition of the eminent services to mankind of said Walter Reed in the discovery of the cause and cure of yellow fever." This was about to be adopted when the suggestion was made that a better wording would be, "In the discovery of the means of preventing the transmission and propagation of yellow fever." This was considered to be more satisfactory, but when reduced to writing it appeared as follows: "In discovering the cause and method as well as the means of preventing the transmission and propagation of yellow fever." This wording was criticised, and the Senators interested in the bill now proceeded to write out a number of phrases and submit them to each other for approval. Their efforts culminated in the following production: "In discovering the cause and method of as well as the means of preventing the transmission and propagation of yellow fever." The numerous "ofs" sounding unmusical in the ears of one of the Senators, the now tired rhetoricians made another effort, and let the wording finally appear, "In special recognition of the eminent services of the said Walter Reed, in discovering the means of preventing as well as the cause and method of the transmission of the propagation of yellow fever." The result would seem to show that the more they tried to mend their English the more involved they made it.—[*N. Y. Times.*]

EASTERN STATES.

The Faulkner Hospital of Boston has been opened to the inspection of the public and will be ready for the reception of patients on March 9. The building as it now stands cost about \$125,000 and is limited to 25 beds. Later it will be extended so that the accommodations will be doubled.

Height of Buildings in Massachusetts Limited.—The Supreme Court recently rendered a decision confirming the constitutionality of an act of the Massachusetts Legislature and upholding the right of that State to limit the height of skyscrapers in cities. The decision was based on the public use of light and air. The act as passed by the Massachusetts Legislature declares that buildings must not exceed 90 feet in height.

Harvard Medical School.—The proposed new medical buildings at Harvard will occupy a 26-acre lot, and the cost of the entire group is estimated at \$2,000,000, of which J. P. Morgan contributed one-half. Five of the new buildings will be used by the medical school, one by the dental school, and one will be a large power house. The five buildings will surround three sides of an open court, which is 520 feet by 215 feet, and the entrance will be through a gate on Longwood avenue.

Smallpox in Massachusetts.—For the first time since 1901 the State is practically free from the disease. There have been no cases reported outside of Boston for some time, and but 10 cases exist within that city. These are under quarantine. The *Boston Transcript* gives the history of the State's recent experience with the disease as follows: "It came into the Southern States in 1898, undoubtedly from the Spanish colonies, and worked north gradually until it hit Massachusetts in October, 1901. During the last three months of that year there were 778 cases and 97 deaths in the State; in 1902 there were 2,302 cases and 250 deaths, and thus far this year there have been 183 cases—no record of the deaths is obtainable. Quarantine and vaccination were the only agencies adopted by the health authorities to stop it; to these it gradually yielded, and it now appears to have lost its ground here entirely. Vaccination has been forced on the people in many communities where they showed disinclination to submit to it voluntarily, and smallpox hospitals have been established in nearly every town and city of any importance where there were no such hospitals before."

NEW YORK.

The new Bronx Eye and Ear Infirmary was formally opened to the public February 7, 1902. The incorporators are Dr. Charles H. McIlwaine, Dr. Everett M. Raynor, Mr. Charles H. Roberts, Mr. James C. McKenzie, and Mr. James Dalton. The dispensary service will be open daily except Sunday from 2 to 4 p.m.

Influenza on the Increase.—Compilation of the death records for the past week in New York City show an increase of 50% in the number of fatal cases of influenza over that of the preceding week. The total number of deaths from all causes was markedly diminished, but the increase from influenza was considered by the New York physicians as significant.

Medical Inspector.—A bill has been introduced into the New York Legislature which provides for the appointment of a trained medical inspector. If the bill becomes a law he will perform the duties now devolving upon the medical commissioner. The salary accompanying the position will be \$5,000 a year, and for this amount those in authority hope to secure the services of a trained alienist to visit the various insane hospitals of the city.

Opium in State Prisons.—The superintendent of Dannemora, after an investigation, has found that an attendant and a trustee in connection with the institution have been clandestinely supplying the convicts with opium. It is said that the practice has been going on for some time, and that only after rigid and thorough examination have the guilty parties been discovered. The attendant was promptly discharged, and vigorous measures will be adopted to prevent repetition of the offence.

Psychopathic Hospital Bill.—A bill suggested by the State Commission in Lunacy has been introduced into the New York Legislature for a psychopathic hospital in New York City. The proposed hospital will afford a place of detention for those who are suspected of being insane until such time as the proper official in charge shall make an examination and detail to the satisfaction of the court the mental condition of the person detained. If secured the hospital will be located on the East river opposite the Ward's Island institution.

For Pure Drugs.—A bill has been introduced into the New York Legislature to prohibit the sale of defective, stale, or otherwise deficient drugs, and to punish persons who make substitution of another drug for the one called for by a customer. The bill provides that drugs likely to deteriorate in time must be marked with the date of manufacture, and with a statement showing the quality, strength, and genuineness of the drug. A time limit must also be fixed after which the drug will be unfit for use. The bill was introduced at the instance of the Medicolegal Society of New York.

PHILADELPHIA, PENNSYLVANIA, ETC.

Women Physicians in Philadelphia.—There are at present 186 women physicians in this city. A number of these are said to make \$10,000 a year, while a large proportion average from \$2,000 to \$3,000 a year.

Patent Medicine Advertisements.—The Pennsylvania Legislature has passed a bill prohibiting the use of any person's picture or name as a testimonial for a patent medicine without securing the person's consent.

For Sanitary Barber Shops.—A meeting called by the International League of Barbers for the purpose of arousing public interest in the adoption of a bill by the Pennsylvania Legislature providing for better sanitary conditions in barber shops was held recently in Philadelphia. The proposed law regulates the practice of barbering, provides for the registration and licensing of barbers, and calls for the better education of those engaged in the work. It also provides for the appointment of a board of examiners, composed of five members, who have had at least 10 years active practice in the business. The movement has the cooperation of the International Union of Journeymen Barbers, which comprises nearly 10,000 persons.

SOUTHERN STATES.

Columbian University.—The new hospital and the new building for the department of medicine and dentistry of the Columbian University in Washington were formally opened February 28.

New Ward for State Hospital for Insane.—Plans are being prepared for a new epileptic ward for the State Hospital for the Insane at Springfield, Md. The building will be two stories high, and will accommodate about 100 persons. It is estimated the cost will be about \$25,000.

New Naval Hospital.—The amendment to the Naval Appropriation bill assigning the sum of \$125,000 for the erection and completion of new buildings for the accommodation of the United States Naval Hospital in Washington has been passed by the Senate. The buildings will be erected on the grounds belonging to the United States Naval Museum of Hygiene.

Hospital Site Offered.—A Baltimore woman has offered to the Commissioners of the District of Columbia a piece of property to be used for maintaining a Children's Hospital in Washington. The property, which is situated in the country nearer Washington than Baltimore, consists of over 40 acres of land and a large three-story house, which has room for 50 patients. The property was first offered to a Baltimore institution, but as that city is already well provided for in this respect with the Robert Garrett Hospital for Children at Mt. Airy, Md., the offer was not accepted.

Sentenced to Penitentiary for Malpractice.—Judge Stockbridge, of the Criminal Court of Baltimore, has sentenced Dr. W. B. Hawkins to 10 years in the penitentiary—the full limit of the law—for manslaughter in causing the death by criminal operation on November 15, 1901, of a female patient. The case had been tried a second time, the trial resulting in a vote of 11 members of the jury for conviction and 1 for acquittal. The accused was severely arraigned by the court, who said that there were no extenuating circumstances whatever, that aside from the nature of the crime itself the operation was performed in a most brutal and unscientific manner, so much so that no chance remained after the operation for the survival of the patient.

WESTERN STATES.

Hospital Bill.—Under a new ordinance which has been favorably recommended in the Chicago Councils, institutions for the care of the insane, inebriates, or similar persons are prohibited in all residence districts, unless the consent of the majority of the property owners in the block or on the opposite side of the street on which the building faces is obtained.

Football Prohibited.—A bill has been introduced in the Illinois Legislature prohibiting football in the State University and other institutions of learning supported wholly or in part by the State. The prohibition is made absolute and any breach of it is to be characterized as a misdemeanor, the maximum penalty being a fine of \$100. Not only are the students forbidden to play the college game, but presidents and faculties are forbidden to permit it.

Patient's Consent Necessary Before Operation.—Judge Tuley, of Chicago, has rendered a decision in the case of Mrs. Parmelia J. Davis against Dr. Edwin H. Pratt, granting to the plaintiff the sum of \$3,000 as damages for the operation of hysterectomy at the hands of Dr. Pratt without her consent. The doctor alleged that the patient had given her consent, but as she was suffering from occasional epileptic attacks at the time, and has since been adjudged insane, the fact was established, in the opinion of the court, that even though she consented, such consent was not sufficient in the eyes of the law, she being legally of unsound mind. Neither the sister nor the husband being present when this operation was performed is a strong circumstance tending to show that the doctor acted without the consent of the husband. One or the other would naturally have been present at the hospital at such a time. It is not claimed that the doctor performed the operation in an unskilful manner; no malpractice is charged. The absence of malice does not excuse an unauthorized trespass on the body of the plaintiff.

FOREIGN NEWS AND NOTES

GENERAL.

Miscellaneous.—Dr. A. S. F. Grünbaum has been appointed director of Cancer Research, for which Mr. Sutton Timmins, of Liverpool, recently gave a donation of \$50,000. The work as announced previously will be carried on in connection with the University College and the Royal Infirmary of Liverpool.

Discovery of a Plant Which Drives Away Mosquitos.—The prevalent notion which exists among the natives of West Africa that a certain species of plant which if placed in a room will drive away all mosquitos induced Captain H. D. Larymore, Resident of the Kobba Province, to make an investigation. He found that the natives living in Lokoja make use of this plant to protect themselves from the swarms of mosquitos. The plant has been identified by the experts at Kew as the *Ocimum viride*, Willd. It is a member of the order *Labiata* which grows from Senegambia southward to Angola. It grows wild but not abundantly. Specimens were obtained and planted in pots and boxes. Captain Larymore found that the presence of one of these plants in a room undoubtedly drove the mosquitos out, and that by placing three or four around his bed at night he was able to sleep unmolested without using a mosquito net.

GREAT BRITAIN.

Deaths Occurring in London Streets.—It is asserted that about 4,000 persons are killed each year in the streets of London.

Women Physicians.—It is asserted that there are 247 women physicians in the United Kingdom; of these 82 are in London and its suburbs alone. In India there are 124 English medical graduates.

Introduction of Yellow Fever Into Asia Feared.—At a special meeting of the Epidemiological Society, held recently in London, the possibility of the construction of the Panama Canal introducing yellow fever into Asia was discussed. The speakers were unanimously of the opinion that the danger is most real and, therefore, it was demanded that pressure be brought to bear on Great Britain and the United States to give practical effect to the recent discoveries of the American Yellow Fever Commission toward preventing the spread of the disease among the over-crowded populations of Asia, where conditions are very favorable for its propagation. A committee was appointed whose duty it will be to draw the immediate attention of the governments to the matter and to begin an active propaganda to combat the danger. The society will correspond with kindred American societies with a view to obtaining their cooperation.

CONTINENTAL EUROPE.

Destruction of Rats.—It is estimated that nearly 3,000,000 rats are killed in Paris each year.

Medical diplomas were granted to 1,350 young men in Germany last year. Ten years ago there were but 800 granted.

OBITUARIES.

W. E. B. Davis, a leading surgeon of the Southern States, was instantly killed at Birmingham, Ala., by a passenger train February 24, aged 39. He was graduated from the Bellevue Hospital Medical College, New York City, in 1884. He was professor of gynecology and abdominal surgery in the Birmingham Medical College and was a prominent member of many local and national societies among which are the Southern Surgical and Gynecological Association, Tri-State Medical Association of Alabama, Georgia and Tennessee; American Association of Obstetricians and Gynecologists; American Medical Association, etc. He was honorary president of the section of abdominal surgery of the Pan-American Medical Congress in 1893 and vice-president of the Congress in 1896. He was also a Fellow of the British Gynecological Society. He gave many contributions to medical literature, his writings being chiefly upon abdominal surgery and surgery of the bile-ducts. He served as an editor on several medical publications.

Theodore Gaillard Thomas, of New York City, died at Thomasville, Ga., February 28, aged 72. He was graduated from the South Carolina Medical College, Charleston, in 1852. He was well known as a gynecologist, and several new operations were first suggested and employed by him. One was the removal of small ovarian tumors without abdominal section. The incubator for premature babies was his device. He was at one time one of the visiting physicians at Bellevue Hospital. He was surgeon at the Woman's Hospital and was a member of the New York County Medical Society.

C. F. Ulrich, of Wheeling, W. Va., acting assistant surgeon in the Marine-Hospital Service, died February 17, 1903. He was graduated from

the University of Louisville, Ky., in 1870. He was a member and ex-president of the Wheeling and Ohio County Medical Society; ex-president of the Medical Society of the State of Virginia and of the Board of Education. He was also a member of the American Academy of Medicine, American Public Health Association, and ex-surgeon of Holiday Post of the Grand Army of the Republic, and vice-president of the American Congress of Tuberculosis.

Captain Franklin M. Kemp, assistant surgeon in the United States Army, died at Neuva Caceres, P. I., February 23. He was graduated from the Long Island College Hospital in 1893. In 1895 he served as assistant surgeon in the National Home for Volunteer Soldiers in Dayton, Ohio, and in the following year was appointed first lieutenant and assistant surgeon in the United States Army. In 1898 he served with the exploring expedition in Alaska under Captain Eldridge and went to the Philippines in 1899.

John Gerdine, of Athens, Ga., February 18, aged 63. He was graduated from the medical department of the Tulane University, New Orleans, La., in 1861. He was president of the Clark County Medical Association and was at one time vice-president of the Georgia Medical Association. He was also a member of the American Medical Association and was medical examiner for several life insurance companies.

A. L. Cressler, of Wilkes-Barre, Pa., February 23, aged 75. He was graduated from the Jefferson Medical College, Philadelphia, in 1874. He was one of the charter members of the Luzerne County Medical Society and about twenty years ago was a member of the Pennsylvania Legislature.

Benjamin T. Shimwell, in Philadelphia, February 5, aged 51. He was graduated from the Jefferson Medical College, Philadelphia, in 1875. He was formerly professor of surgery in the Medico-Chirurgical College and was a member of the American Medical Association.

Harry H. Hurst, in Wilkingsburg, Pa., January 31, aged 28. He was graduated from the University of Pennsylvania, Philadelphia, in 1897. He was a member of the Pittsburg Pathological Society and former president of the Wilkingsburg Medical Club.

Richard J. Gatling, of New York City, February 27, aged 84. He was graduated from the Ohio Medical College in 1850, but he never practised medicine. He was the inventor of the Gatling gun and of a number of agricultural implements.

Lieutenant-Colonel C. R. Maclean, of Medford, Ont., February 16, aged 68. He was graduated from the University of New York in 1858 and from the Queen's University, Kingston, Ont., in 1859. He served as surgeon during the Civil war.

James H. O'Toole, in Charlestown, Mass., January 27. He was graduated from the Medical School of Maine, Bowdoin College, Brunswick, in 1830. He was a member of the Massachusetts Medical Society.

Edward von Donhoff, in New York City, February 7. He was a graduate of the University of Heidelberg, Germany, and was formerly professor of surgery in the Louisville (Ky.) Medical College.

Samuel C. Hanford, formerly of Brooklyn, died in Hempstead, N. Y., February 17, aged 81. He was graduated from the medical department of the New York University in 1845.

Gustavus Bruhl, in Cincinnati, February 16, aged 76. He was graduated from the University of Munich, Bavaria, in 1848, and was a member of the American Medical Association.

Frank C. Hoegel, in Allegheny, Pa., February 2, aged 27. He was graduated from the Western Pennsylvania Medical College, Pittsburg, in 1897.

Benjamin Bevan, of Pittston, Pa., February 20, aged 42. He was graduated from the New York College of Physicians and Surgeons in 1890.

Alice H. Burdick, of Passaic, N. J., February 19, aged 60. She was graduated from the Eclectic Medical College, New York City, in 1872.

Vincent P. Kennedy, in Litchfield, Minn., February 13, aged 79. He was graduated from the Rush Medical College, Chicago, in 1859.

A. L. Vandewater, of New York City, March 2, aged 58. He was graduated from the Bellevue Hospital Medical College in 1870.

Charles C. Warden, in Ottumwa, Iowa, February 14, aged 86. He was graduated from the Ohio Medical College, Cincinnati, in 1843.

John M. McFarland, in Rivera, Cal., February 13, aged 69. He was graduated from the Tulane University, New Orleans, in 1870.

Ernest Gisborne Burke, in Quincy, Mass., February 19, aged 30. He was graduated from the Harvard Medical School in 1897.

Henry M. Ptolemy, in Brighton, Mich., February 16, aged 47. He was graduated from the Detroit College of Medicine in 1889.

Nelson B. Sisson, in Porter, Ohio, January 28, aged 82. He was graduated from the University of Louisville (Ky.) in 1846.

Wilbur A. Blauvelt, of Newark, N. J., February 18, aged 27. He was graduated from the New York College in 1900.

Alonzo D. Root, in Crete, Neb., February 8, aged 66. He was graduated from the Cleveland Medical College in 1871.

Lemuel G. Goode, of Jersey City, N. J., February 17, aged 88.

John C. Whaley, of Osceola, Mo., February 3, aged 64.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

COMMENT ON PLAGUE MEMORANDUM.

BY

W. J. CALVERT, M.D.,
of St. Louis, Mo.

Dr. Currie, in his "Review of the Plague Situation at San Francisco," published in *Public Health Reports* for January 30, 1903, gives a brief summary of the number and distribution of plague cases and notes the failure on the part of Chinese to report all their sick and dead, giving as a reason their fear of an autopsy and disinfection of rooms with sulfur. The startling statement that "possibly owing to contrary influences brought to bear against us by the agents of the State Board of Health we have been unable to secure their (Chinese) full confidence and cooperation" is made.

This summary is in every respect characteristic of plague and Chinese. Unfortunately a complete study of only a part of the question is made. The disease is studied from every side, but the Chinaman is left almost out of the question. At present the management of this race presents more difficulties than plague. His failure to cooperate has been noted in Hong Kong and elsewhere. Why so? An answer may be found in a study of the people. Chinamen, like the people of other nations, have certain national customs and religions which are dear to them and according to which they live. Consequently an insult to these customs and religions is an insult to the people. Briefly, among Chinese there are many factions, each with its leader and assistants, to whom the laymen look for guidance. He virtually dictates their policy on all questions save religion and old well-established national customs. To gain his confidence and cooperation is to gain that of the masses. Ordinarily, so long as no sacred right is trampled under foot no trouble from lay Chinamen need be anticipated, but if any of these rights are tampered with every Chinaman will resist in every possible way. There is no practice more repulsive to Chinese than autopsy work. It is against his religion, his national customs, and the masses will not cooperate with any board of officials who persist in this work. They may submit because they have to, they may approve of it because they know it will be done, but down in their hearts a bitter opposition is always present. It may be true that the State Board of Health opposes all or a part of the plague work in San Francisco, but it is probable that the autopsy work is, with the ignorance of the Chinese, sufficient to explain the present opposition.

As the Chinaman has demonstrated that he is not in sympathy with the present policy and is quietly blocking every move, why not stop for a moment to study him? He is human, he has a mind, he has an ambition to succeed and there is a way to gain his confidence and cooperation, without which nothing can be done. Why not omit autopsy work on Chinamen? It has been demonstrated that plague exists among them, so future autopsies can produce naught save opposition. It is much more important to know of plague from its onset than to find it after death and perform an autopsy. Why not teach the Chinese leaders every detail of plague; the reasons for and benefits to be derived from disinfection and the importance of knowing of every case of plague from its onset? They would transmit their knowledge to every lay Chinaman. If the leaders fully understand all, the masses can soon be taught. It must be remembered that these people are not educated as we are and one explanation may teach them nothing. Why not determine how much their religion influences their ideas of medicine? Why not demonstrate to them that all of their sacred rights are respected and that an attempt is being made to protect their race and property? This cannot be done so long as autopsies are made. In this way only can their confidence and cooperation be gained.

It is, indeed, sad to think that in this day of civilization we have in our Union a State which would tolerate a Board of Health capable of opposing in any way a measure to stamp out plague in one of our chief ports. If the quoted statement is not

true it should not have been made; if it is true there are laws in our land to bring the members of such a board to trial.

A PLEA FOR MORE FREQUENT PRESCRIBING AND LESS DISPENSING OF DRUGS.

BY

FRANK VAN DER BOGERT, M.D.,
of Schenectady, N. Y.

To the Editor of American Medicine:—I wish, if I may, to make through your columns a plea for more frequent prescribing and less dispensing of drugs by physicians. The evil resulting from this too frequent dispensing is, I think, especially apparent in smaller cities and towns, where the pharmacies of today are hardly more than candy and cigar stores, soda fountains and patent medicine shops. This is not altogether the fault of the pharmacist. So little prescribing is being done that the clerk whose duty it is to mix drugs is now spending his time in mixing drinks.

The pharmacist loses his cunning; it is impossible for him to keep his stock of drugs fresh, and when we physicians need active preparations it is next to impossible for us to find them.

LABORATORY OF CRIMINOLOGY.

To the Editor of American Medicine:—My attention has been called to an editorial in your magazine of the date of February 14, in which you discuss an objection urged to the study of the relation of criminal propensities to physical signs, and urge, although not very explicitly, the point that a pupil possessing physical signs of degeneracy should be separated from his fellow pupils at school. You urge that it is an "injustice done to the great mass of the pupils by allowing them to be exposed to the moral contamination of pupils possessing the bodily signs of degeneration."—[Misquotation.—EDITOR.]

It seems to me that the criminal law for the past 200 years, as well as the better sentiment of the community for a much longer time, has been such that it would not permit a human being to be condemned simply for permanent disfigurement which he has inherited from his parents. It would hold him responsible only for his conduct, and not for the shape of his body. The good philanthropic mind of this age wishes by proper means to create a self-respect in the pupil and to give him a disposition to do good to his fellow-men. It would be regarded as a great piece of cruelty on the part of a commission appointed to inquire into criminality if said commission were to go among the well-behaved part of society and take an inventory of the height of the palate in the mouth, of the position and shape of the ears, and the form and shape of the skull. These permanent inheritances, if pronounced to be causally connected with crime, would destroy the self-respect of the pupil and would produce a suspicion in the minds of the community that would lead to misinterpretation of all his acts. It is hardly conceivable that the best disposed child could withstand this influence to evil. But what community would permit the teachers of the schools to hunt up signs of degeneracy and discuss them in the presence of the school? Would it not be fiendish to require among the duties of the teacher that he or she should be on the lookout for physical peculiarities which indicate degeneracy of some sort? Such fiendishness would, I doubt not, lead to cases of libel and to imprisonment, as actual criminals, of teachers who undertook to carry out such an injunction.

Nor would public opinion permit a modification of criminal law which instead of inquiring into the overt act of the criminal and adjudging him for what he has done should, on the contrary, proceed to examine his bodily configuration and condemn him for what he had inherited from his parents.

There has been a position in the Bureau of Education, not for the investigation of criminology in general, but for "the study of education as a preventive of crime and pauperism." It has been difficult to find a person to fill this place who is well acquainted with educational methods and their history and at the same time with an expert knowledge of anatomy and

physiology, together with competency to make statistical investigations. But in asking for the discontinuance of the office of specialist this difficulty was not considered so much as the liability of abuse which comes of urging on teachers a study of inherited bodily peculiarities.

WM. T. HARRIS.

[A more careful reading and accurate quotation of our editorial comment referred to by Mr. Harris would show that the foregoing letter is almost or entirely pointless. We have perfect sympathy with most of what Mr. Harris means to say in this letter, and surely with his essential contention. He confuses the matter by assumptions and non sequiturs, and gives his case away somewhat by "forcing the note." We might also have heartily endorsed the aim that lies behind the letter, and that has inspired many editorials in the newspapers of the country. We may be as fiercely opposed as he to placing the study of degenerates in the hands of those possibly atypical themselves. All that, however, has no bearing upon what we have urged in the editorial. A governmental laboratory for the study of criminology properly carried on, and under competent and conscientious men, would be of great service to the nation and to civilization. As to school children, Mr. Harris' criticism of this journal's expressed opinion is wide of the mark. We spoke of "a morally diseased or degenerate pupil who is teaching others bad habits and contaminating them with moral disease," etc. We said nothing as to the manner of conducting the examinations of degenerate school children, nor of what should be done with them, except to exclude them from the school. Are not children who are insane, feeble-minded, criminal, deaf and dumb, etc., now excluded? Recently came to our knowledge the case of a morally diseased and, as it proved, physically diseased school child, who so effectually taught a large proportion of the other pupils of a public school the art of sexual crimes that loathsome and nameless horrors resulted. The question we discussed had nothing to do with the appointment or retention of a head of the proposed bureau, nor with any of the "fiendish" methods we are mistakenly assumed to have advocated, and which we should detest as much as our critic. His words, indeed, could be twisted and used by the most outrageous socialist or demagog to advocate giving our public schools over to the control of the degenerates themselves. Do not let us throw the baby away with the bath. —EDITOR *American Medicine*.]

TWO CASES OF TYPHOID FEVER WITH UNUSUAL COMPLICATIONS.

BY

F. ALAN G. MURRAY, M.D.,
of Finzel, Md.

These cases occurred during the winter of 1901 and 1902, when typhoid was epidemic in this community. The patients were directly infected by drinking contaminated water.

CASE I.—Typhoid fever, complicated with round worms, double intestinal perforation, bedsores and erysipelas. Death occurred six months after exposure to the disease.

The patient was L. C., a female, aged 8, whom I was called to see November 10, 1901. Her pulse was 112 and temperature 103.5°. She had been sick about three days, complaining of headache, pain in the abdomen, weakness, loss of appetite, etc.

Physical examination showed a small-framed child, color pale, tongue coated, breath foul, heart and lungs normal, abdomen distended and tender, spleen not palpable. She had been passing worms for the last few days and I therefore gave her santonin and calomel. The case ran a typical course, with the occasional passage of some worms, until December 3, when at 11 a.m. the pulse was 132 and temperature 104°. During the night the patient had been seized with a severe pain in the abdomen, and has since been lying on her back with her knees drawn up and crying out with pain every few minutes. The abdomen is distended and very tender on pressure but not rigid, tenderness being most marked in the right iliac region. Expression of the face is anxious and drawn. Bowels moved five times since yesterday. I gave her 8 mg. (½ gr.) of morphia for the pain and ordered cold applications to the abdomen. From this time on until December 19, she remained in a desperate condition. Abdomen was distended and very tender, pulse ranging between 140 and 150, and temperature between 99° and 102°. Large pressure spots began to appear on her back, hips, ears and hands; these continued, became gangrenous and sloughed out. On December 21 her pulse was 140, temperature

99°, condition showed improvement. She is able to take more nourishment. Her abdomen is softer and less tender, and bowels are more regular.

My notes for January 10 state that the bedsores are clean and granulating well. There is a sore on the sacrum about two inches in diameter, and one above this about one inch in diameter. The ligaments of the spine are seen in this sore. There are also two sores on the left hip through which the head of the bone can be seen working. The other sores are small and nearly healed. On January 15, improvement continuing, I put her on a peptonate of manganese and iron. From this time until February 10 the bedsores gradually improved. On this day, however, the patient tried to walk by herself and fell on the floor, bruising the sores badly. The sores got rapidly worse, despite constant treatment, and about February 20 erysipelas developed, spreading over the lower part of the back and left hip. She died suddenly on the morning of March 5, 1902. A partial necropsy was made at 1 p.m., March 5. Rigor mortis was not complete. The body was warm and emaciated. Abdomen was not distended. On the back, over the sacrum and to the right above, were two deep gangrenous bedsores. On the left hip and exposing the head of the femur, was a large, deep sore; the skin around these sores was of a dusky red color and very much thickened. There was a foul-smelling sanious discharge from the sores. I opened the abdomen on the right side from the edge of the ribs down to the pubes. There were numerous recent and old adhesions between the intestines and the omentum, the appendix was bound down by adhesions crossing over it but was perfectly normal in appearance. On the ileum, about four inches above the cecum, were two large, puckered red scars, bound in adhesions. These were the only ulcerations in the intestines and they were still healing. These were the sites of the perforations that took place on December 3, 1901; and up to the time of her death the patient had attacks of pain in her abdomen when her bowels were constipated.

There was a small amount of straw-colored fluid in the abdominal cavity. The liver was much enlarged and very pale, extending across the abdomen into the left side. The left lobe was about the same size as the right. The spleen was not much enlarged, and there were no adhesions in the upper abdomen. No examination was made of the thoracic organs.

CASE II.—Typhoid fever complicated by Ludwig's angina; death from edema of the larynx. Charles C., aged 32, contracted the disease from his daughter, Case I.

On January 10 he complained of headache, dizziness, loss of appetite, had chilly sensations, felt weak and nervous. He had diarrhea a few days previous, and a chill three days ago. Temperature is 102° and pulse 80.

Physical Examination.—His face is flushed, eyes injected, tongue tremulous and coated. Heart and lungs are clear. Abdomen is soft, there are no rose-spots. Area of splenic dulness is not increased. Treatment consisted of the administration of acetanilid compound, soft diet and rest in bed. The case ran a mild typhoid course, the highest recorded temperature being 103.5°, until February 3, when a swelling developed on each side of the patient's neck. When seen on February 4, the temperature was 99.5° and pulse 100. There is a large swelling on each side of the neck under the sternomastoid muscle. This swelling does not extend up the angle of the jaws and is hard and painful on pressure. His voice is harsh and metallic and he has difficulty in swallowing; breathing is somewhat obstructed and labored. Neck is slightly swelled in front. The tonsils are neither reddened nor swollen. There is a profuse flow of watery saliva. The heart and lungs are clear, the abdomen and chest are covered with rose-spots. The edge of the spleen is palpable, and the abdomen is soft and flat. The patient died from suffocation at 6.30 a. m., February 5.

A partial postmortem examination was made at 8.30 a. m. Rigor mortis was not complete. The trachea was opened and the larynx examined. The mucous membrane was much congested, the vocal cords were swollen and edematous, passage almost closed. The abdomen was opened over the appendix, which was found very red and injected; lumen was patent and numerous small ulcers were noted all through the organs. The ileum contained numerous ulcerations. The stomach was full of a bright-yellow fluid. The abdominal cavity contained a quantity of straw-colored fluid. Further examination was not permitted by the relatives.

In Case I an operation for the perforation was out of the question on account of the miserable surroundings and lack of nursing. Such a procedure would have hastened the death of the patient, and as it turned out the perforation healed, death resulting from erysipelas caused by carelessness and neglect of the bedsores.

The second patient apparently had a mild case of typhoid and was doing well until the laryngeal trouble set in. The relatives had been told to watch the patient closely and send for me if any change for the worse occurred, as a tracheotomy would be necessary, but they did not send until morning and when I arrived the man was dead.

A case of Ludwig's angina complicating typhoid fever is reported by Drs. Robertson and Biedert in *American Medicine*, December 23, 1901.

A SLATE PENCIL THREE AND ONE-HALF INCHES LONG LODGED IN A GIRL'S CHEEK FOR THREE WEEKS.

BY

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A girl, aged 7, presented herself at the oral clinic of the Pittsburg Dental College. She had a scar $\frac{3}{4}$ inch external to the right side of the nose, on a line with the inferior margin of the ala. The wound had healed, but it was pink, showing its recent origin. There was a history of a fall down stairs, at which time the wound was produced. A doctor closed the wound with one stitch. After repair had taken place a lump was found in the tissues beneath and external to the wound. A dentist was next consulted, with the idea that the tumefaction had something to do with the teeth. The dentist was unable to make out the condition and referred it to the college clinic. Upon examination a distinct hard substance could be felt in front of the malar. It was movable. The finger in the mouth demonstrated that it had no connection with the maxilla. When pressure was made upon it the tissues in front of the ear moved as though some foreign substance had penetrated the tissues and passed backward. An exploratory incision was advised and accepted. The incision was made at the point of the original wound and the scalpel came in contact with a hard sub-



Fig. 1.—Adult skull, showing relative size of pencil and of skull.

stance. With a hemostat the object was grasped and a half of a wooden slate pencil was removed. A second effort removed the other half and the slate center unbroken. The moisture of the tissues had dissolved the glue used to hold the halves of the pencil together. The yellow paint on the outside of the pencil had also been dissolved. A portion of the pencil had been broken off, since the end near the wound was rough. The father was asked to search the house, and upon his return home the remainder was found in a dark corner of the stairs where the child landed. The wound was closed and it healed promptly without complication.

A study of the anatomic relationship of the missile, in the position where it had been for three weeks, might be of interest. The pencil shown in the illustration is $3\frac{1}{2}$ inches long. As it penetrated the skin its point was deflected backward upon the anterior surface of the maxilla into the zygomatic fossa, underneath this arch toward the temporomandibular articulation, passing external to the coronoid process. It is quite gratifying that it did not injure the external maxillary artery, since the point of the pencil must have reached if it did not pass it.

Diphtheria.—A serious outbreak of diphtheria is reported from the Ochre river and Makinak districts. It appears that the disease has been in progress for some time and that several deaths occurred before its identity was recognized. Vigorous measures have been adopted to check its spread, and it is believed the condition is now under control.

TRAUMATIC RUPTURE OF THE ABDOMINAL AORTA.

BY

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On October 28, 1902, I was called to make a postmortem examination of a man who had been instantly killed by being struck in the abdomen by a moving ore-car. The examination was as follows:

The body was that of a well developed and well nourished middle aged man. There were no evidences of trauma found on external examination of the body. The abdomen was slightly distended, but no evidences of injury or extravasation of blood could be determined. The left rectus muscle was somewhat torn, but showed no excess of fluid in the contused parts. The peritoneal cavity was filled with blood. Most of the blood was fluid, but a few clots were found in different parts of the cavity. The omentum was intact. The intestines showed nothing abnormal. The abdominal aorta was in its proper position, and showed no evidences of local dilation. There was a right-angled opening in the anterior surface of the aorta which measured about $\frac{3}{4}$ inch in its entire length. This tear was situated about an inch above the bifurcation of the artery. The posterior parietal peritoneum and the mesentery were torn and were displaced and infiltrated with blood. The vascular system appeared normal. The heart and the large and small arteries showed no evidences of disease. No atheroma or thickenings were found in the aorta at any point. The vertebral column showed no evidences of disease or of deformity. The remainder of the examination showed nothing of importance. An irregular cicatrix was found in the upper part of the upper lobe of the right lung. The nervous system was not examined.

The history of the injury, reported to me by one who was present at the time the accident occurred, was as follows:

The edge of a moving loaded car struck the man fairly in the abdomen. The velocity of the car could not be determined, but it was thought to be moving as rapidly as an ordinary man could run. The man was not felled to the ground, but staggered a few feet. Gradually his legs weakened under him and he lay motionless on the ground about 20 seconds after being injured. Ten seconds later no evidences of life could be found by those who were with him.

The absence of signs of injury in the superficial structures of the body, might be due to the rapid and excessive anemia draining the system before the smaller vessels had time to bleed sufficiently to be noticeable. I have not seen or heard of a similar case. Neither have I been able to find reports of such cases in the literature.

COMPRESSION OF THE AORTA IN POSTPARTUM HEMORRHAGE.

BY

LEO JACOBI, M.D.,
of New York City.

To the Editor of American Medicine:—I desire to record the following case as bearing on the value of compressing the aorta in postpartum hemorrhage:

Mrs. W., aged 22, primipara, was confined on December 20. After a somewhat prolonged first stage, the pains becoming steadily feebler, further expectancy was deemed undesirable, and under superficial chloroform anesthesia the forceps were applied, and the head delivered from its occipitoanterior position with moderate difficulty. Bleeding was now rather profuse, and I therefore expelled the placenta by means of Credé's method. The uterus, however, refused to contract under the hand. Blood gushed forth, and literally in less time than it takes to tell it the woman was lying in a pool. The unnerving spectacle forcibly recalled to mind some recent discussions on the efficacy of aortic compression in this puerperal emergency. Easily finding the vessel, I pressed it against the spinal column. Bleeding ceased instantly. The effect was precisely like that of shutting off a faucet, or closing the clasp of a fountain syringe. The temptation to apply a crucial test was irresistible. Accordingly, I relaxed the pressure, only to witness a prompt return of hemorrhage, which again ceased upon renewing the compression. For fully a half-hour the aorta was thus held under continuous control of the left hand. Meanwhile, a hot lysol douche was given, and ergot in full doses administered. The uterus gradually recuperated and soon assumed a reassuring hardness. Thereafter nothing noteworthy occurred, the patient rapidly rallying from her acute anemia.

POISONING FOLLOWING THE USE OF COCAIN IN LOCAL ANESTHESIA.

BY

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The employment of cocain as a local anesthetic in surgical procedures has not yet been limited in the hands of the painstaking surgeon. Careless use of this drug, however, will give a quick and potent systemic reaction, as in the following instance of my own:

K., male, aged 17, a packer by occupation, came to me to have enlarged glands of two years' growth removed from his neck. The "lumps" were hard and freely movable, and were deeply situated upon both sides of his neck beneath the body of the lower jaw, on a line with the first molar teeth. Separate times having been decided upon for the removal of the growths, that upon the right side was successfully removed, and proved to be of agglutinated, encapsulated, glandular tissue about the size of a horsechestnut. Cocain varying in strength of from $\frac{1}{2}\%$ to $\frac{1}{4}\%$, dissolved in a weak, warmed soda solution, was employed as an anesthetic, with further tissue infiltration by means of plain soda solution; a total quantity of about half an ounce of fluid having been used containing one-half to one grain of cocain.

The patient, aside from being very nervous, for though constantly admitting throughout the progress of the operation that he felt no real pain, could hardly reconcile himself to the cutting. No systemic effects were apparent during or subsequent to this first operation. Nine days later, healing having progressed satisfactorily, I essayed to remove the gland upon the left side. Great difficulty was experienced in anchoring the growth during the dissection, as it was deeply placed beneath the platysma myoides muscle and while not large was very movable. A $\frac{1}{4}$ stock, cocain solution, reduced by measuring syringefuls of weak, warmed soda solution to $\frac{1}{2}\%$ was used as the working solution. The dissection was well started and I was having my patient open his mouth to press the gland from beneath the edge of the jaw by muscular action, when he asked for a mouthful of water, explaining that his "mouth felt dry." Before complying with his request I gave him a $\frac{1}{4}$ grain morphin tablet by mouth. His pulse at this time was 72, full and velvety to the touch. Respiration was normal in action. Eyes were bright, pupils equal and normal. The countenance was slightly pallid. The patient became very alert and read my thoughts of his possible danger. Said he was "not going to faint or anything like that" that he "was all right" and sprang upright with great rapidity to prove his assertions. Quietly him I continued my work without the use of further injections of the cocain. Dryness of the mouth and throat gradually increased and I gave another $\frac{1}{4}$ grain morphin tablet by mouth. In addition I loaded a hypodermic syringe with $\frac{1}{4}$ grain of morphin sulfate to employ directly should occasion arise. Turning out the gland as quickly as possible after opening it, I cureted its contents of calcareous degenerated deposit but did not dissect the sac, relying upon a drain connecting with the lower part of the wound left open for the purpose. The dressing was completed with dry, fluffed gauze held in place by means of a gauze bandage. During the course of the next two hours the symptoms first increased then as rapidly passed away with no subsequent ill-effect. The dryness of the throat became marked, the cocain in this case partaking in its actions more of the nature of belladonna poisoning which has been observed according to Wood. Respirations increased in number somewhat and became labored. The pulse while not gaining over 10 or 20 beats at any time during the course of the drug's action became hard, jerky and irregular but recovered its normal characteristics rapidly. The patient's face first became pale then bluish, finally flushing and breaking out into slight perspiration.

Temperature was unaffected. The state of mind might be described as being that of one who was peculiarly alert to every outside impression.

The amount of cocain hydrochlorate used during the operation was according to my rough calculation between .16 and .19 gram ($\frac{1}{2}$ and 3 grains). Enough and to spare to cause the most serious outcome. My fault lay in the continued use of the strong solution without having resorted to further infiltration dilution by means of the weak soda solution which is my usual custom when doing this work, and upon too great reliance of leakage during the course of the dissection.

Both chloral and opium in the form of morphin sulfate have been suggested as natural antidotes in cases of cocain poisoning. In several unrecorded instances in the surgical work of other operators I have seen the prompt effect produced by the latter drug.

ATYPICAL VARIOLA.

BY

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of Santa Cruz, Cal.

It has been my fortune during a long and almost continuous practice of some 50 years to attend cases of variola almost every year. Lately I have had some experience that may be worth recording.

In a convent school of orphan girls of many nationalities—Spanish, Mexican, French, Irish, and German—all, however, American-born, numbering about 60, and ranking in ages from 5 to 16 years, I was informed by the Sister Superior that during one week about half the pupils appeared slightly ailing, somewhat like an influenza. They were allowed to remain in bed several days, using some domestic remedies, and it was deemed advisable by the Sisters to isolate the sick girls from the well ones. When I saw them they were busy in the playroom. Few complained of any discomfort. The darker skinned ones showed a perceptible eruption, while the fairer ones required a close examination of neck and scalp to discover any. As near as I could ascertain the eruption had been out from five to eight days. It was characteristic of varioloid, although none had ever been vaccinated, and its origin was unknown. However, a German family living near, consisting of eight or nine children and the mother (who had been vaccinated), were sick with a similar eruption.

Vaccination of all the pupils was advised, especially of those who had not suffered with the ailment. This was done to the number of 34, using vaccine that had been successful just previous in other cases. On the eighth day after vaccination the children were inspected. Only about three had "taken" satisfactorily. A revaccination was made, and among those were some who had recovered from the first eruption. One week later inspection was made, and all had "taken" either in the first inoculation or the second, and a few in both, except three or four, and particularly those previously rendered immune by the first eruption. It seems evident from this that vaccinia and this variola are antagonistic.

As to varicella, my experience is not so satisfactory. I am, however, assured by the experience a year or so ago of others in the Deaf and Dumb Institute at Berkeley, Cal., that varicella at first appeared among the 218 inmates, and that of 69 who had either variola or varicella all recovered, and that one was not a protection against the other. Vaccinia, however, is always more or less a protection against variola.

Our experience, then, on this side of the continent of the last few years shows a mongrel state of several genera of eruptive diseases, with a tendency, such as appears in all hybrid forms, to revert to the original, whether of the animal or vegetable kingdom.

We have them in this combination: variola, varicella, vaccinia, and probably one or more forms from Cuba or the Philippines, degenerate forms of what at one time was the most fatal and disgusting of contagious diseases—variola. As to the pathogenic germs, a satisfactory isolation, so far as I know, has not been accomplished, a modified condition seeming to be brought about. Not a death is reported in California from smallpox or any of its forms during the last three years. Among the inmates of the convent were some three or four girls who, so far as tested, were immune from vaccine. May it not be possible that these had the infection without the eruption, and were thus rendered immune? One or two more trials of vaccine may settle that point.

Visiting Nurses' Association.—The annual report of the Visiting Nurses' Association of Chicago calls the attention of the public to the need of following the example of other cities in adopting some organized plan to combat tuberculosis. The report states there were 226 new cases of tuberculosis coming under their observation last year and that 60 deaths were due to this disease. The State and city are urged to inaugurate a warfare against the spread of the disease. The whole number of patients cared for by the Association during the past year was 5,621, and 37,986 visits were made by the nurses, the greatest demand for their services being during the typhoid epidemic of August and September.

ORIGINAL ARTICLES

THE TECHNIC OF THE OPERATION OF CELIOTOMY AS PRACTISED AT THE GYNECEAN HOSPITAL, WITH THE REPORT OF 93 CONSECUTIVE CELIOTOMIES WITHOUT A DEATH.

BY

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The operation of celiotomy for the relief of gynecologic diseases with the most favorable surroundings and by the well-trained abdominal surgeon has come to be looked upon at the present day as an operation associated with comparatively little danger to life. The published mortality of a long series of all kinds of cases by a number of the best operators throughout the civilized world is estimated at not more than 5%. The study of the etiology of the infectious diseases and traumatic infection by the bacteriologist; the development and better understanding of the principles of asepsis and antisepsis, the perfection of the technic of operation, and improvement of operative methods by the surgeon; and particularly the specialization of abdominal surgery and more accurate studies of the pathology and clinical significance of abdominal diseases during recent years, are the factors which have determined the advance in this class of surgery, the small mortality and the completeness of the restoration to health following it.

The indications for operation have increased, the opinion of the general practitioner that it is safer to allow the patient to suffer with, for instance, a myoma of the uterus, rather than risk the danger of operation is no longer justifiable, and more and more suffering women are being relieved.

Although the expert abdominal surgeon has attained a very high degree of perfection in rigidly practising aseptic and antiseptic technic, his mortality is small, and his influence in saving life is very marked, he rarely goes through a year's work without seeing one or two of his patients die from septic infection. The conscientious and painstaking operator never becomes accustomed to such most unfortunate accidents, nor can he rid himself of a strong feeling of blame in each instance; for it is very truly said that the surgeon's acts determine the fate of a flesh wound, and that septic infection, suppuration, and death from this cause are due to his technical faults of omission and commission. Therefore, most earnest, untiring, and unceasing efforts are daily being made by the conscientious surgeon toward the acquirement of a technic so absolute in the prevention of introduction and the destruction of pyogenic organisms that he may be enabled also to save these few who now die from septic infection, and relieve his mind of the constant worry, the fear of this danger, and the imposing of the fact that a life has been lost and children left motherless through his or his assistant's neglect of appreciation or application of an aseptic principle. For this reason the subject of the technic of the operation of celiotomy is ever new, and of sufficient interest to warrant the description of that practised by each individual operator who has made a careful study of the principles of asepsis and antisepsis and applied them in his practice. In this paper I wish, therefore, to describe in detail the technic of the operation of celiotomy as practised at the Gynecean Hospital, a hospital specially and only devoted to this class of surgery, and to make a short formulated report of 93 consecutive celiotomies performed without a death.

The Preparation of the Patient.—The patient who presents herself for the operation of celiotomy at this hospital, either as a charity and ward patient or one

entering a private room, when immediate operation is not demanded, is placed in bed and upon a preparatory treatment lasting from three days to a week. The objects of the preparatory treatment are rest, stimulation of the heart and circulatory system, examination of the blood and various secretions, and also to give the surgeon an opportunity to study the gynecologic disease, become familiar with the patient's general physical condition and her peculiarities. She is usually referred from a physician living outside the city; and if a poor working woman, is frequently weakened by her arduous duties, has traveled a long distance, is weary from the journey and a few days' rest is followed by a distinct improvement in her general physical condition, and she is better prepared for and more easily withstands the shock of operation. Many are nervous, disturbed, fearful of operation and unfamiliar with their new surroundings, and are made more content and willing to subject themselves to the operation by these precautions. A complete clinical and gynecologic history of the patient's previous and present illnesses is taken. Two careful systematic pelvic and abdominal examinations are made, and each recorded in a book kept for this purpose. The first examination is made a short time after the patient's admission to the hospital and before the bowels are open and a vaginal douche administered. The character of the vaginal discharge, any change or disease of the vaginal outlet, vagina, cervix, body of the uterus, tubes and ovaries and the various abdominal organs are carefully noted. The confidence of the patient has not been gained at this time, she resists the physician's manipulations, the abdominal walls are rigid, the rectum is found filled with feces, the examination is therefore difficult and although a diagnosis is determined, the definite opinion is reserved until the second examination. The second examination is made 24 hours preceding operation, following the same systematic plan. The disadvantages of the previous examination have now been removed, the abdomen is well relaxed and the pelvis empty, a very accurate diagnosis is made and the character of the operation definitely decided upon.

For these examinations the patient is placed upon an ordinary kitchen table having Edebohls' legholders attached. The legs are flexed on the thighs, the thighs upon the abdomen, the limbs widely separated and the buttocks drawn well down to the edge of the table. This Edebohls' position, we believe, gains the greatest possible degree of relaxation of the abdominal walls and allows the most satisfactory palpation of the pelvic organs. It is the duty of the attending nurse to see that the bladder has been emptied, immediately before the patient is placed upon the table. By this plan only (the making of two thorough pelvic and abdominal examinations under the conditions described) can a very accurate diagnosis be made, mistakes avoided, and the character of the operation definitely planned. Further, by this method it is scarcely ever necessary to delay operation, or disturb the system of the operating-room and its aseptic and antiseptic technic by an examination under ether.

The surgeon makes a physical examination of the chest, and if there is any question of doubt as to the presence of a disease of the heart or lungs, which would counterindicate operation, a specialist in internal medicine is called in, and assisted by his opinion, the further course of treatment is decided upon. Should the patient have bronchitis, operation is deferred until this is cured, and if this is not possible, she is placed on a treatment and asked to return to her home until all pulmonary symptoms have disappeared. A chemic and microscopic examination of the urine is made and recorded. Likewise a blood examination; the percentage of hemoglobin and a white and red cell count. Tincture of digitalis, .6 cc. (10 minims), and strychnia sulfate, 3 mg. ($\frac{1}{70}$ grain), are given three times daily, and when there is an indi-

cation, a diuretic is administered. The bowels are opened daily. We would emphasize the importance of this preparatory treatment and precautions, as long experience has taught us that they avoid mistakes, lessen the danger of complications, make the convalescence easier, and distinctly influence the results.

The patient receives a daily bath and vaginal douche of one gallon of hot water night and morning. The special preparation, the sterilization of the abdominal surface, external genitals and the vagina, and the emptying of the gastrointestinal tract is begun 24 hours before operation. Four gram doses (1 dram) of Epsom salts dissolved in half a tumbler of water or soda water are administered every hour until the bowels begin to move freely. Five or six doses are usually sufficient. During the 24 hours preceding operation the diet consists of light, easily digested, concentrated nourishment, such as milk, buttermilk, soft boiled eggs, rare beef, soup, coffee, tea, and whisky if necessary. Unless the patient is very weak, no food is given on the morning of operation. If her condition does not warrant such abstinence, she is given a glass of milk, buttermilk, coffee, or a milk punch. Eighteen hours before operation she is given a warm bath from head to feet. The surface from the ensiform cartilage to the pubes is scrubbed with a nail-brush. The pubes and external genitals are shaved. Special care is devoted to the umbilicus and external genitals. After the bath the patient is dressed in a clean flannel undershirt and nightgown, her hair is plaited and she is placed in a clean bed. The nurse, who has prepared herself as described in the description of the personal asepsis, then washes or scrubs the abdominal surface from the ensiform cartilage to the pubes, and from flank to flank, and the upper third of the anterior aspect of the thighs, first with turpentine, second with green soap, third with sterile water, followed by a 1-1,000 mercuric chlorid solution. Then the abdomen is covered with a large sterile gauze dressing, which is allowed to remain in position until the next preparation. For the preparation of the external genitals and vagina, the patient is drawn down to the edge of the bed. The anus, the external genitals and the vagina are scrubbed with green soap. The vagina is washed throughout. The nurse does this by retracting the perineum with Sim's speculum, and scrubs the vagina, the fornices, and the vaginal cervix with cotton held in dressing forceps. She inserts her finger slightly into the cervical canal, and is very careful that the vaginal fornices and the folds of the external genitals are thoroughly cleansed. The scrubbing, which is very thoroughly practised and continued for 20 minutes, is followed by a vaginal douche of a gallon of hot water, or as much water as is necessary to completely rid the surface of soap. Then a douche of two quarts of mercuric chlorid solution (1-1,000) is given, and a light vaginal gauze tampon, wet with mercuric chlorid solution, is introduced as far as the cervix. The following morning, the morning of operation, the abdomen is again cleansed as before with turpentine, green soap, sterile water, followed by scrubbing with ether and alcohol, then mercuric chlorid solution and a wet gauze mercuric chlorid dressing is applied and held in place by a special form of dressing and binder. This dressing is not removed until the patient reaches the operating table. The patient is given another large hot douche of sterile water, followed by a mercuric chlorid douche, and a tampon of gauze is introduced as before. The vagina is prepared in every instance, even though the operation is to be confined to the abdominal route. The lower bowel is thoroughly emptied by an enema of soap and water three hours before operation. The patient is catheterized immediately before entering the operating-room. In the preparation of the abdominal surface and vagina, strict asepsis and antisepsis is practised; a sterile stiff-bristle surgeon's scrubbing brush is used, but although the scrubbing is long continued, care is taken not to irritate or excoriate the skin. The preparation is

always made by a nurse who is well advanced in her training, and who thoroughly understands the principles of asepsis and antisepsis, and in the selection of this nurse it is an imperative rule that she has in no way come in contact with a patient from whom there is even the possibility that pyogenic organisms might be carried.

Preparation of Dressings, Towels, etc.—The operating cloths, aprons, sheets, operating towels, and the operating clothing of the surgeon, assistants and nurses are sterilized by superheated steam in a Sprague sterilizer. The temperature of the sterilizer is maintained at 240° F. under 15 pounds pressure for two hours. All dressings, gauze sponges, gauze, drains, etc., are sterilized in the same sterilizer for two consecutive days and for two hours each day. Each material or article is enclosed in a muslin bag and marked. They are not tightly packed, so that all parts are exposed to the same degree of temperature. They are kept in the muslin bags in sterile glass jars between sterilizations, in a special room for this purpose, and after the last sterilization they are folded in a sterilized sheet and placed on a sterile glass table in the operating-room, from which position they are not disturbed until used.

Gauze sponges are employed, and are made of various sizes by sewing together (quilting) 18 layers of plain absorbent gauze. The edges are folded in and hemmed, to prevent the escape of loose threads into the peritoneal cavity. Seven of these sponges are employed at each operation, one 3 x 3 inches, two 10 x 7 inches and four 5 x 5 inches. This constitutes a set, and two such sets are prepared for each operation, although only one set is usually used. The number of sponges, always seven, is counted twice before sterilization, once in the presence of three nurses immediately before operation, and twice after the abdomen is ready to be or is closed. The absolute determination that every sponge has been removed from the abdominal cavity is the duty of the first, second, third nurse and the surgeon.

Preparation of the Ligatures and Sutures.—Four sizes of twisted silk are used—heavy silk (No. 5) for ligature of the large arteries; medium silk (No. 4) for suture of the cervix in hysterectomy and the ligature of the smaller vessels; a smaller size (No. 3) for various suturing in the abdomen; fine silk (No. 2) for the peritoneum and intestinal suture. These four sizes of silk are cut in lengths (18 inches long), and sufficient of each for an operation is placed loosely in packages made of two, then three layers of sterilized gauze and marked. The silk is sterilized by fractional sterilization in the Sprague sterilizer for 20 minutes, on two consecutive days immediately preceding operation. Silk-wormgut is used for suture of the abdominal incision in case the "through-and-through" or interrupted mass suture is employed. It is the heaviest and longest size, and is sterilized by boiling for five to seven minutes with the instruments at the time of operation. Catgut is employed for suture of the peritoneum and fascia of the recti muscles in closing the abdominal wound, and frequently as a ligature material and suture in the abdomen. The catgut is prepared by soaking in juniper oil for a week. The oil is then washed out with ether and the catgut is soaked in ether for 48 hours. It is then rolled on glass spools and is placed in a sterile glass jar containing pure alcohol. The gut is boiled in the alcohol for an hour at a time on several successive days. It is used directly from this jar and is always boiled in the alcohol for an hour before the operation. The alcohol is boiled by placing the glass jar in a vessel of hot water. Although this method of sterilization of catgut would not seem absolute, it has been the method employed for ten years in this hospital, and in no instance could the slightest infection be attributed to catgut. We would explain this by the fact that during these years it has been prepared and handled up to the time it reaches the surgeon by one nurse whose conscientious appreciation and application of asepsis cannot be questioned. An equally satis-

factory and assuredly sterile catgut is that prepared by the cumol-formalin method.

During the operation the silk is allowed to soak for a half hour in a 1-500 solution of mercuric chlorid made with sterile water and immediately before it reaches the surgeon is passed through boiling sterile water. The catgut is taken from the jar with forceps, catching the free end, in no way handling or exposing the spool, and is also passed through the mercuric chlorid solution.

The handling, preparation, and sterilization of every form of ligature and suture material, from the time it comes from the shops until it is handed to the operator during operation, is the duty of the one nurse referred to, the chief or first operating nurse. Further, at operation it is the only duty of this nurse to prepare ligatures, sutures, and dressings and handle them at the time of operation. She in no way comes in contact with any patient or possible infection. We would emphasize the importance of such a person in maintaining strict asepsis of these materials.

The Water.—The water used during operation for washing the wound, rinsing the sponges, the hands of the operator, assistants and nurses, making the potassium permanganate, oxalic acid, and mercuric chlorid solutions is drawn from a Kny-Sprague water sterilizer. It is carried to the operating-room in special sterilized and covered glass demijohns. The process of preparation is the distillation and the heating of the water by steam to 250° F. under 15 pounds pressure.

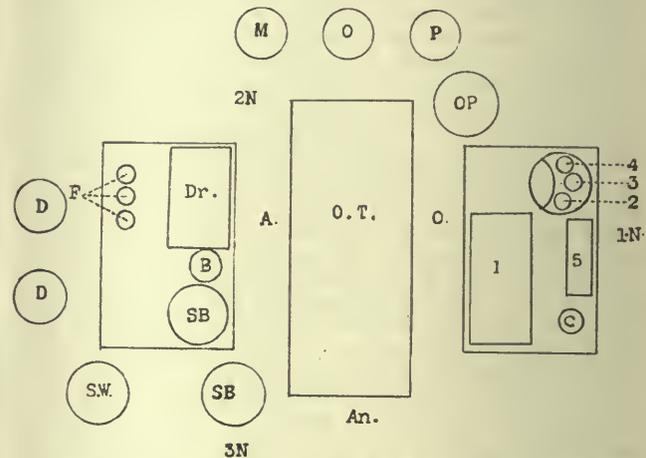
Sterilization of Instruments.—Instruments, glass and rubber drainage tubes, and any rubber appliance is sterilized by boiling for 30 minutes in a 1% solution of sodium carbonate. They are placed on a convenient tray and boiled in an instrument sterilizer heated by gas. The knife is boiled for seven minutes. Immediately before the operation the tray containing the instruments is carried to a sterilized tin receptacle containing a sterilized solution of the sodium carbonate. Appliances that are impaired by moist heat or steam are sterilized by thoroughly washing, scrubbing with green soap, rinsing, scalding with boiling hot water, and soaked in a solution of the mercuric chlorid (1-1,000). The same cleansing is practised after operation. Basins are sterilized by boiling for 30 minutes. No material that cannot be sterilized by boiling or steam is used a second time when it has been in any way in contact with an infected patient. As few instruments as possible are employed, 19 in all: one scalpel, two abdominal retractors, a needle-holder, two pairs of scissors (one curved on the flat and one straight), two pedicle needles, six small, two Tait and two Spencer Wells hemostatic forceps, and one dressing and one rat-tooth forceps.

Apparatus.—All apparatus, such as tables, etc., are prepared by thoroughly scrubbing with sapollo and water, scalding with boiling hot water, and washing with a solution of the mercuric chlorid (1-1,000). Glass top and iron frame tables and the Bolt operating-table are used.

The Operating-room.—The night preceding operation the walls, floors, and ceilings of the operating-room are flushed from top to bottom with a hose, mopped with a wet cloth and wiped throughout with a solution of mercuric chlorid (1-1,000). The room is then closed and not opened until the beginning of the immediate and final preparation of the apparatus. No one enters the operating-room after the primary cleansing, except those prepared to assist at the operation. When operation is performed upon a patient who has any infectious process or there is a possibility of this, a formalin gas sterilization is practised before the operating-room is used again. Likewise, any recovery or private room is disinfected in this way after being occupied by any patient having an infection.

Operator, Assistant and Nurses.—There are two assistants and three, sometimes four nurses in attendance at

each operation. The first assistant stands opposite the operator, and assists by sponging, holding a retractor or other instruments, or by following the surgeon's directions. He avoids introducing his hands into the wound or abdominal cavity as much as possible. The first nurse stands directly behind the operator, on the opposite side of the instrument table, and her sole duty is to care for the threading and handling of ligatures and sutures. The ligatures and sutures are placed in an earthen receptacle having five compartments and the surgeon is familiar with the size of silk to be found in each compartment. The aneurysm needle is threaded and similarly placed, always ready for immediate use. Each needle after it is used is returned to a certain receptacle. The second nurse assists in the final preparation of the abdomen and arranging of towels before the operation, oversees, constantly watches the strict maintenance of asepsis during operation, assists in the filling of vessels with sterile water, elevates and lowers the operating table. She is a nurse long experienced, thoroughly con-



O. T., operating table. O., operator. A., assistant. An., Anesthetizer. 1N., first nurse. 2N., second nurse. 3N., third nurse. 2, 3, 4, 5, sizes of silk in receptacles. C, catgut. I, instruments. Dr., Dressings. F., liter flasks sterile water. D., demijohn sterile water. P., permanganate potassium solution. O., oxalic acid solution. M., mercuric chlorid solution. O. P., operator's basin. S. B., sponge basins. B., basin. S. W., sterile water.

scientious and her service is to be absolutely depended upon. The third nurse washes the sponges and hands them to the first assistant or operator. The second assistant administers the ether. He must of necessity be a trained anesthetizer. The operator, assistant, and nurses take a daily bath, and each morning of operation the hands, arms, shoulders, and axillas are scrubbed in the bath as though preparing for operation; the hair is also washed in this bath. Under no circumstances do they attend any patient suffering with an infectious or septic condition. If they have done so, they are not allowed to assist at an operation for from a week to 10 days, during which time they practise sterilization of the hands thoroughly once daily, not in the hospital, and when they assist again it is imperative that they wear rubber gloves. The attendance upon such patients or the dressing of any septic or suspiciously septic wound, if unavoidable is carried out with rubber gloves. Such duties are usually delegated to one person, who is in no way connected with the operative technic. The operator carries out the same precautions.

The operator, assistants, and nurses enter the operating-room some time, certainly a half hour, before the operation, dressed in sterile clothing, with sleeves rolled up almost to the axilla. Running hot filtered water in a sterile baby's bathtub (as hot as the hands will bear) is employed for preparing the hands and arms. Ivory soap is used, because it is penetrating and least apt to cause chapping. A stiff-bristle surgeon's brush, sterilized by boiling three minutes, is employed for

scrubbing the hands. The finger-nails are kept pared down as far as possible, so that no dirt can collect beneath the nails. The edges of the nails are kept round and smooth. The tissue covering the base of the nail is pushed back sufficiently to secure cleanliness and prevent excoriation. The hands and arms are scrubbed hard, energetically and continuously for 20 minutes, often longer, until the patient is etherized and placed upon the operating table. I believe there is a strong personal factor in the degree of cleanliness gained by this scrubbing. The soap is repeatedly washed off and renewed. The water is also constantly renewed and kept hot. Particular attention is paid to scrubbing beneath and about the finger-nails, about the wrists and folds of the hands, not escaping the surfaces between the fingers. The scrubbing is often continued until the skin is slightly macerated, like that of a washwoman. In the midst of the scrubbing, after 10 minutes, the surfaces beneath the nails and at the base of the nails are lightly gone over with a metal nail cleanser, which stirs up and makes more easy the separation of bacteria, that are so apt to be found here and are removed by renewing the scrubbing.

The hands and arms are then scrubbed free of soap, immersed for two minutes in a saturated solution of potassium permanganate, at a temperature of 110° F., then decolorized in a hot saturated solution of oxalic acid and then immersed and scrubbed in a hot solution of mercuric chlorid (1-1,000). A large sterilized gown is now put on the operator, the assistant, and each nurse, the sleeves being tied above the elbow. The hair is covered with a sterilized skull cap. The first assistant and the second nurse make the final preparation of the abdomen, removing the dressing, scrubbing the surface with ether, alcohol and a solution of mercuric chlorid. Sterile towels and sheets, and a large square of sterile gauze having a central slit or opening, are placed about and over the site of operation by the operator. The assistant and nurse then scrub and antisepticize their hands for a minute or two again, rinse them in sterile water, put on the sterile gown, the assistant also putting on rubber gloves, and the operation is begun, maintaining the same degree of asepsis throughout. Handling of tissue is avoided as much as possible. Metal retractors are used for separating the wound and forceps for the handling of tissue in suturing. During the course of operation the intestines are displaced upward, out of the pelvic cavity, and held in this position by the two large gauze sponges; isolating and exposing only the area of operation. The site of operation is constantly kept clean by sponging, and if necessary by irrigation. At the termination of the operation, just before the abdomen is closed, all blood and possibly remaining shreds of tissue are removed by irrigation with hot normal salt solution. A sufficient quantity of this is used to fill the pelvic cavity almost completely, and is then quickly soaked up in clean gauze sponges. This process is usually repeated twice, rarely three times, the two larger sponges being removed before the last irrigation, and a much larger quantity of the salt solution introduced. All bleeding is controlled, even small oozing areas, before irrigation is begun. As a test for bleeding, two perfectly clean sponges are placed in contact with the site of operation with the patient in the horizontal position, and allowed to remain one minute. Their appearance on being removed determines whether all bleeding points have been controlled. Before the last 2 cm. of the peritoneal incision is closed one liter of hot normal salt solution is introduced into the peritoneal cavity and allowed to remain there. As a rule it is necessary to elevate the patient to the Trendelenburg position in order to introduce the solution. The normal salt solution is prepared by having a standard solution (made by adding sodium chlorid to the distilled and boiled water and boiling this solution for an hour), a dram of which when added to a

liter flask of sterile water produces .6 of a 1% solution. The temperature of the solution should be about 110° F.

No door is opened or person allowed to leave the operating-room until the abdomen is closed, and the dressing and binder applied. In the rare cases in which a drainage-tube is introduced, it is cared for by the third nurse assisting at the operation, and strict asepsis is maintained during its care until it is removed. The dressing of the abdominal wound is composed of many layers of sterile gauze, covered by a large sterilized abdominal pad, held in position by a six-tailed abdominal flannel binder. This is placed and pinned in position by the first and second nurses. The first two layers, and thus many of the other layers of gauze are held over the wound by a sterile preparation of collodion, except when a drain has been introduced.

Rubber gloves, sterilized by boiling for 10 minutes, are always worn by the first assistant. They are worn by the operator and nurses in operations in which pus or any infected material is to be handled, and when for any reason there is the least suspicion of a previous patient having had infection. In putting on the rubber gloves they are caught by the edge of the gauntlet, filled with sterile mercuric chlorid (1-1,000) and the hand is easily and completely introduced without touching the outer surface of the glove. The gloves, if worn at the beginning of the operation, are never removed until the abdominal wound is completely closed. The medium weight and those having a roughened outer surface have been found the most satisfactory. The principal of the use of rubber gloves is to protect the hands of the operator and his assistants from infection, rather than to protect the patient. It is believed that the constant use of rubber gloves induces carelessness in the carrying out of the aseptic and antiseptic technic.

The most rigid discipline is practised in the operating-room. The personal asepsis and the asepsis of every detail of the technic are continually watched and criticised. The work is systematically divided among the assistants and nurses, and each attends strictly to his or her own duty and nothing else. The early presence of the assistants and nurses at the operation is insisted upon, the rule being that they must be in the operating-room a half hour before the beginning of the operation. No one is allowed to touch anything that has not been sterilized. It is the rule to consider no part of the technic "good enough," every assistant and nurse is made to feel seriously the responsibility of their position, and in their daily duties to be ever conscious of this responsibility and avoid personal infection.

The avoidance on the part of the operator, his assistant and nurses of coming in contact with infectious cases, the wearing of rubber gloves, and these with care when examining such cases, the assurance in this way that no pathogenic bacteria are being carried on the hands, we deem of the first importance in maintaining the best technic.

The Treatment After Celiotomy.—At the termination of the operation, the patient is immediately removed to a recovery room and placed in a bed covered with sterile sheets. Hot cans are placed about her and any necessary stimulation administered hypodermically. If there is profuse sweating a hypodermic of .6 mg. ($\frac{1}{100}$ grain) of atropin is given. A special nurse is required for the first 24 hours, or until the bowels are opened and the patient considered "convalescent." The patient lies upon her back for the first four days. Unless the operation was a ventrosuspension she may be moved partly upon her side after this time by placing a pillow behind her for support. After the effect of the anesthetic has passed off the patient is made more comfortable by raising the knees over a pillow. If she complains of backache the pain is relieved somewhat by slipping a folded sheet beneath the small of the back. For 8 hours, until after the nausea of anesthesia has disappeared, thirst is relieved by moistening the tongue and lips with a cloth wet with cold water

or wrapped about a piece of ice. Nothing is administered by mouth for these 8 hours, then small quantities of hot water or soda water (1 dram) are given every half hour and gradually increased if it is retained by the stomach. Severe pain, nervousness and sleeplessness are relieved by a small dose of morphia, 8 mg. ($\frac{1}{8}$ grain) administered hypodermically. In rare instances it is necessary to repeat the morphia. Each celiotomy patient is usually given one dose of morphia, even though there is no pain. It has been found to do no harm and affords great comfort. At the end of 12 hours purgation is begun by giving .63 gram ($\frac{1}{8}$ grain) doses of calomel every hour until six doses are given, followed by 2 or 3 two-gram (31 grains) doses of Epsom salts. Three or four hours after the last dose of salts is taken, or earlier if the patient feels inclined to have a bowel movement, a soap and water enema, containing 4 cc. (1 dram) of turpentine is given. If this enema is not effectual it is repeated after three or four hours. Finally, if this one fails a high compound enema composed of 31 grams (1 ounce) of Epsom salts, 30 cc. (1 ounce) of glycerin, 8 cc. (2 drams) of turpentine, and 235 cc. (8 ounces) of warm water is given. The first or second enema, however, is nearly always sufficient to open the bowels. If the patient is uncomfortable and unable to pass flatus freely she is relieved by the introduction of a rectal tube. Vomiting caused by the anesthetic is usually much relieved by placing a large strong mustard plaster over the epigastrium for a few minutes.

For the first 24 hours the urine is drawn every 8 hours with a sterilized catheter and under antiseptic precautions. After this time the patient is encouraged by every means to pass her urine. Food is administered soon after the bowels are open (the patient is considered "convalescent"); usually at the end of 24 hours. Small quantities of milk, buttermilk, and milk and lime water, soup, soft boiled eggs, etc., are given frequently, and after 24 hours more she is allowed the ordinary soft diet of the hospital. The temperature usually remains about 100° F. during the first 48 hours and then quickly drops to normal. The maximum temperature is observed during and immediately after the purgation. The pulse remains below 100, but may in a successful case reach 120 or 130. Drainage-tubes or gauze drains are removed at the end of 24 hours, unless the bowel has been injured, when it remains for three days. A soft rubber tube replaces the drain for two days, being removed in sections to allow the tract to be obliterated from the bottom. A few hours after the bowels are opened the patient is returned to the ward. The first dressing is made and the sutures removed on the fourteenth day after operation. All patients are kept in bed for three weeks, allowed to sit up in bed for two days, then get out of bed and leave the hospital three or four days later, or as soon as they are sufficiently strong.

This aseptic and antiseptic technic and after-treatment is that employed in the usual case, but is of course subject to modifications in the complicated cases.

The following series of 93 consecutive celiotomies performed by me will serve in a sense to demonstrate the value of this technic. They were consecutive and unselected cases, patients of all classes coming to a gynecologic hospital. One patient was lost, but the death was the natural result of a far advanced sarcoma of the uterine parenchyma, involving all tissues to the pelvic bones, and the operation was a simple exploratory celiotomy. The fact that an operation was performed and an anesthetic given hastened the death a few days, but was in no way responsible for it. It has seemed therefore quite justifiable to exclude this one case from the statistics.

The celiotomies performed were as follow: Hysteromyomectomy, leaving the ovaries intact, 8 times; salpingoophorohysteromyomectomy, 13 times; salpingoophorohysterectomy, 2 times; hysterectomy, when both tubes and ovaries had previously been removed, 2 times; panhysterectomy, 1 time; bilateral salpingo-

oophorectomy, 2 times; unilateral salpingoophorectomy, 3 times; ventrosuspension and unilateral or bilateral salpingectomy, 3 times; ventrosuspension, with plastic operations on the tubes and ovaries, salpingostomy or elevation of the ovaries, 9 times; ventrosuspension with appendectomy, 6 times; ventrosuspension with plastic operations on the cervix, vagina, or both, 18 times; ventrosuspension alone, 6 times; appendectomy or abdominal drainage of an appendiceal abscess, 4 times; elevation of the ovaries, 1 time; elevation of the stomach, 3 times; gastrotomy, 1 time; cholecystotomy, 3 times; ventral hernia, 1 time; drainage of tuberculous peritonitis and tuberculous infected ovarian cyst, 1 time; exploratory celiotomy for abdominal fistula, 1 time.

Hysterectomy was practised for the following diseases: Myoma of the uterus, 21 times; inflammatory disease, 2 times; excessive metrorrhagia, 2 times; carcinoma of fundus of uterus, 1 time.

Salpingoophorectomy: For pyosalpinx and tubo-ovarian abscess, 1 time; papilloma of ovaries, 1 time; extrauterine pregnancy, 3 times; and multilocular glandular cystoma, 4 times.

Salpingectomy, salpingostomy, or elevation of the tubes and ovaries were performed for bilateral pyosalpinx, 4 times; hydrosalpinx or closed abdominal ostii, 6 times; bilateral tuberculosis of the tubes, 2 times; hematosalpinx, 1 time; and prolapse of the ovaries, 3 times.

Appendectomy for acute suppurative appendicitis or appendiceal abscess, 4 times; and chronic obliterating appendicitis, 6 times.

Elevation of the stomach for gastroptosis, 3 times; gastrotomy for gastric ulcer, 1 time.

The abdominal incision in every case, except five in which drainage was introduced, was closed by the layer method; the peritoneum with a continuous fine catgut suture, the fascia of the recti muscles with a larger size continuous catgut suture, and the skin with a fine silk intracutaneous suture. In the five cases in which drainage was necessary the incision was closed with the "through-and-through" silkwormgut suture, catgut being employed to suture the fascia. A gauze condom drain (the Mikulicz drain surrounded by a tube of rubber tissue) was used in all these cases. Drainage was instituted in one case when a rectoabdominal fistula had been closed after the removal of the fetal bones of an old extrauterine pregnancy; in two cases to drain an appendiceal abscess; in one case of tuberculous peritonitis; and in the remaining case where there was papilloma of the broad ligament, to destroy any remaining papillomatous tissue. Thus drainage was employed in about 5% of the cases; only in the two appendiceal cases actually as a drain.

In no instance, regardless of the character of the disease for which the patient was operated upon, was there infection or any suppuration of the abdominal incision, no hemorrhage in the tissue or other complication. No ventral hernia has been observed. One or both ovaries and more or less functioning uterine tissue was preserved, the operation described by me, in removing a myoma of the uterus in eight cases. Plastic operations, salpingectomy, salpingostomy or elevation of the ovaries, were practised to preserve the functions of ovulation, menstruation, and to allow the possibility of impregnation, in 13 cases. No patient thus operated upon has returned for operation. All are relieved of symptoms.

Intestinal injury was repaired in five cases and a rectoabdominal fistula in one case. A postoperative fecal fistula occurred, being present for three days, in the case of the rectoabdominal fistula.

All the patients recovered completely without complication, unless the case of exploratory celiotomy for advanced sarcoma of the uterine parenchyma be included. Adding this case there was one death in 94 consecutive celiotomies, a mortality of 1.06%.

THE TREATMENT OF SUPPURATIVE INFLAMMATION OF THE KIDNEYS.

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The causes of suppurative inflammation of the kidneys are so varied that the treatment which may be instituted for its relief is commensurate with its causes. Yet, numerous as are the causes of this disturbance, there is still a considerable sameness in the producing factor of all. First, a plain catarrhal inflammation; second, an infection. (a) This infection, from within, conveyed through the blood; (b) from without, infection carried into the bladder through the urethra, perhaps by a catheter, which may have been none too clean.

The most frequent cause, of course, is the presence of a renal calculus. This source of irritation begets first a simple catarrhal inflammation, which sooner or later takes on the suppurative variety of inflammation. However, this is not true in all cases, especially in recent cases of renal calculus. Yet, in the older cases there is an ulceration of tissue and a breaking down of some blood-vessels, as shown by the usual accompaniment of hematuria. Soon after this, if pus is not found in the urine, the case is pursuing an unusual course.

Pus in the urine, as a symptom, may mean a great many different things. It may mean an abscess in one or both kidneys, a pyonephrosis, an interstitial nephritis, or the suppurative trouble may be confined to the pelvis of the kidney alone, a pyelitis. Pyuria, however, more frequently means that the pus comes from the bladder rather than from the kidneys, and this is a very fortunate circumstance. Even though the pus is reasonably demonstrated to come from the kidneys, the patient may soon make a perfect recovery. A greater amount of hazard from an extensive involvement of the kidneys may ensue, even though in the beginning the pelvis of the kidney alone be involved in this suppurative trouble.

I have not found the settling of the question of the location of the diseased area which produces the suppurative in pyuria the simple one that many of our textbooks seem inclined to lead us to believe. It is true, if in the microscopic examination of the urine, we find associated with the pus an unusual number of large, flat, epithelial cells of the bladder wall, we may conclude at least that the bladder is involved in this suppurative inflammation even though the ureter and kidneys are escaping. Yet, should we infer that a purulent cystitis is that and nothing more, I am sure we should be led into frequent errors. If with pyuria we find the round-celled renal epithelium freely cast off, the likelihood of the disturbance being located in the pelvis of the kidney is very strong. If associated with the pus, the small spindle cells of the kidney present themselves, and especially if accompanied by renal casts, the case is not difficult to diagnose as one of interstitial nephritis. Without these casts, and having simply the small spindle cells to guide us, along with the presence of pus in the urine, we are still in the dark as to whether the trouble is in the kidney substance proper or whether the pus is yielded from some pathologic lesion in the ureter, for the appearance of the epithelial cells in the two regions present many similar peculiarities, confusing any but the most expert in microscopic manipulation. So many times in an examination of urine containing pus, epithelial cells from every part of the urinary tract are found, and not in excessive numbers the one kind over the other as to indicate the source of the chief disturbance. This would suggest to us the importance of not relying unduly on the microscope for our diagnosis of these suppurative disturbances of the urinary tract. While of the

greatest aid in helping us to formulate a conclusion if associated with the symptoms that pus formation has given rise to, without the clinical history we are going to fall far short of arriving at the truth if we fail to combine in each case laboratory results with case history. Take, for instance, one line of causes of suppurative inflammation involving a considerable area of the urinary tract, hypertrophied prostate, or strictured urethra. Sooner or later there is an infected bladder. From the purulent cystitis there may result an ascending inflammation taking in the pelvis of the kidneys, or even still higher into the kidney substance itself, forming a pyonephrosis. Falling short of the interstitial nephritis, we could certainly do nothing better to relieve the pyelitis than to relieve the strictured urethra or to overcome some of the cystitis due to the hypertrophied prostate, by frequent carefully administered aseptic irrigations of the bladder, and the regular catheterization of the bladder with a clean instrument. We must recall that one of the most frequent ways of producing a pyelitis or an interstitial nephritis is by a dirty catheter. It is difficult to persuade some of the laity of this proposition, yet every physician, after he has been in practice a few years, encounters such cases. If the hypertrophied prostate that is complicated with pyuria is handled with reasonable skill along the lines indicated, we shall soon see not only the bladder symptoms mitigating, but the ascending pyelitis will soon diminish or perhaps disappear, providing, of course, destructive changes have not already occurred in the kidneys. This, however, we cannot foretell without tentative trial. By this treatment we will have accomplished a twofold purpose: first, the bladder irritability will have been lessened and the chances of still further ascending pyelitis diminished; second, we will have demonstrated whether the possibility still exists of benefiting the patient by one of the more radical operations for the relief of the symptoms due to a hypertrophied prostate. If we cannot secure a material diminution of the pyuria by irrigation and catheterization, we will not accomplish good by a radical operation upon the prostate. If the case is of long standing and the infected area is not greatly benefited by the means just stated, the presumption is that the kidneys are involved in a pyonephrosis that will not yield or even be favorably influenced by an operation upon the prostate, however much good the operation may have done in the first place. At the same time that we are making this local treatment to the bladder from which the ascending pyelitis developed, we can accomplish some good by rendering the urinary tract as sterile as possible, by administration of some such therapeutic agent as salol, sodium benzoate, etc., and the free drinking of water to flush out the urinary tract.

To illustrate the development of a case of pyuria by direct infection, there comes to mind one of a typical case following typhoid fever and which may follow any of the infective fevers.

A male of 50 had typhoid fever. At the end of six weeks, when all seemed to be progressing well toward convalescence, the patient developed irregular chills, followed by sharp rises of temperature. There was very little to attract the attention in the direction of the kidneys. It is true there was some slight pain in the back, but hardly of a kind or degree to suggest the kidneys as a cause. In making a systematic inquiry as to the various secretions, the information was elicited that the quantity of urine was decidedly increased; that the patient urinated not only several times in the course of the night but a considerable quantity at each urination. Of course this at once suggested the idea of an examination of the urine. The faintest traces of albumin were found, but the sediment gave greater information. The microscope revealed pus in the urine. It not only revealed the presence of pus but the exfoliation of characteristic round-celled epithelium such as lines the pelvis of the kidney. There were present not more than the normal number of bladder epithelial cells. There were no bladder symptoms, such as vesical tenesmus, and no exfoliation of bladder epithelium, but as there was present the characteristic renal symptom of a pyelitis such as frequently follows the infective fevers, the diagnosis was regarded as made. The

urinary tract was kept in as aseptic a condition as was possible by the administration of salol. Large draughts of water were encouraged that the kidneys might be daily flushed to carry away the debris. Indeed, it seems a provision of nature that the polyuria which is associated with pyelitis is an effort of the kidneys to free themselves of the accumulating pus and inflammatory debris.

Despite the ease with which the suppurating surface was located in this case of pyuria, sometimes I have not found it so simple a matter. Morrow makes the suggestion of washing out the bladder and collecting a sample of urine within 10 or 15 minutes after that. He argues that if the pus comes from the kidneys you will get it in this way; if from the bladder, the thorough irrigation will have washed the pus so completely away as to give a urine free from pus for the time being. Personally I prefer to leave the catheter in after the irrigation and collect the sample in that way. I believe the chances of error are much less in following this custom. With a calculus in the kidney the element of pain is usually such a factor in aiding us to make our diagnosis that the presence of pus in the urine is only a confirmatory symptom. Yet I have seen all the symptoms of renal calculus present with a pyelitis and yet all symptoms subside.

For instance, here is a case that presented all the symptoms of renal calculus of the right kidney:

The patient had an intermittent hematuria, intense pain at times over the right kidney, radiating down the ureter, the pain being aggravated by motion; there was occasional vesical tenesmus and pus in the urine. It was demonstrated by the separator that this pus did not come from the bladder but from the right kidney. The patient was greatly run down preceding the disturbance of the kidney. Rest in bed and a tonic treatment brought about a complete subsidence of all symptoms and the trouble disappeared.

The trouble was evidently a simple suppurative inflammation involving the pelvis of the right kidney. This condition had been made more possible by the preceding ill health. The correction of the ill health had rendered it more probable of getting rid of the pyelitis before there was extension of the suppurative inflammation into the kidney itself. The high grade of pain in this case was evidently due to the inflammatory disturbance present; such a high grade of pain in a simple pyelitis being quite contrary to my experience, denoting rather the presence of a calculus, or as I have sometimes seen oxalic acid crystals produce this pain during their passage down the ureter. It seems to me this case should suggest to us the fact that as in all cases of pyelitis the health is greatly impaired, a tonic, reconstructive course of treatment should not be lost sight of while attempting to render the urinary tract as sterile as possible.

The symptoms that characterize a pyelitis due to tuberculosis of the kidney and those that are the result of a renal calculus have not always been distinctive in my cases. It is true that the element of pain is usually greater with stone. But the vesical intolerance, the fever, the emaciation, the polyuria may be very similar in the two cases. Purdy thinks blood is found in the urine at an earlier period with stone than in tuberculosis of the kidney. This has not been a distinction that has guided me in a differentiation of the two troubles. The Röntgen ray is valuable as a point of differentiation in some cases, but the Röntgen ray does not show all forms of calculi. The emaciation, as a rule, is greater in tuberculous cases, especially at an early stage. But after a prolonged suppurative disturbance about the kidneys, the eventuating hectic, resulting from whatever cause, leads to an emaciation that makes the latter symptom one of doubtful utility.

When a suppurative disturbance has continued so long as this, operative treatment is imperatively demanded. If a stone is found, remove it. If a tuberculous mass which is confined to the seat of its usual place of earliest implantation, near the pelvis of the kidney, break the mass down and treat it by drainage through the lumbar

incision. If the kidney seems so extensively involved as to render the cure from a mere nephrotomy ineffective, then we had best run no further chances by prolonging the destructive disturbance, but at once resort to a nephrectomy; provided, of course, that we are previously satisfied that the trouble is confined to the one side, and that two kidneys are in existence. If in the course of the operation a pyonephrosis is located and we are content to treat the disturbance by drainage alone, we should satisfy ourselves that the ureter does not contain a calculus which has been the original cause of the trouble in the kidney.

To attempt to discuss all phases of the treatment of suppurative inflammation of the kidneys would be quite out of the limits of a paper of this character, but I am convinced in having examined many specimens of urine in cases of slight alteration of the normal urinary flow, that there are quite a few of these cases which are the result of a very mild grade of pyelitis, and that many of the patients are promptly cured by timely administration of urinary antiseptics, especially if these are backed by a judicious tonic course of treatment.

DIRECT FIXATION IN FRACTURES.*

BY

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The classic method of treating simple fractures by manipulation, coaptation of fragments, and the application of retentive dressings, generally gives good results. The same may be said of the treatment of compound fractures, provided a condition of asepsis be secured and maintained during the process of repair. A number of circumstances, however, even in simple fractures, militate against good results: for example, muscular action, interfering with good coaptation; the interposition of soft parts, muscles, fascia, and the like, and probably also blood-clots and lymph. To this may be added great obliquity in the line of fracture, and great irregularity in the fractured surfaces, as sometimes occur in cases of fractured patella. To overcome these obstacles, many surgeons advocate cutting down on the seat of injury and reducing the fracture by direct fixation. Direct fixation may be defined as a process by which the fragments of bone are accurately adjusted and securely fastened, in order that bony union may be obtained and deformity prevented.

W. Arbuthnot Lane,¹ of England, says: "In simple fractures the surgeon failing to secure accurate apposition, as determined by the radiograph, should cut down on the site of fracture and restore the bones to their original condition and hold them by wiring or by nails."

Dr. W. W. Grant,² of Denver, believes "the only way to maintain more certainly the accurate coaptation of fragments in certain oblique and joint fractures is to immobilize them by silver wire, screw, nails, or clamp, but only under the most approved aseptic conditions. In the absence of infection the results must be better. This department of surgery has not met the courage and skill that has been manifest in other fields, and it is too important not to receive the serious attention it deserves." Again he says,³ "nothing short of operation by wiring, nailing, or fixation by some such contrivance will enable the surgeon to adjust thoroughly and fix the fragments."

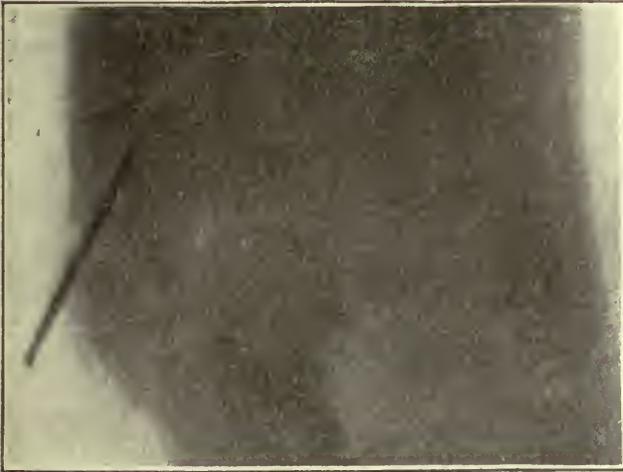
The *New York Medical Record*⁴ says editorially: "We may say, therefore, that in cases in which ordinary means of reduction fail, we must consider the advisability of making an incision and thus reaching the seat of difficulty. . . . The general rule may, therefore,

* Read before Luzerne County Medical Society, November 5, 1902.

be laid down that in fractures, simple or compound, when reduction is impossible by ordinary means we must consider the application of bone or ivory supports in the shape of collars, nails, or screws to maintain the ends of the bone in their proper relation."

Dr. Estes in his address on surgery before the State Medical Society at Lancaster in 1898, said that "explorations by incision and adjustments of fragments by sight are not only justifiable, but in many instances absolutely essential for proper treatment. An accumulating array of instances has shown these incisions do not augment the danger when the operation is done with proper aseptic precautions, and that they markedly improve the results of treatment. The open method of treating fractures in proper cases is now not only the safe method but the proper and imperative method of handling many fractures."

In the management of compound fractures the same rule as to the necessity of fixation of fragments holds good, for closed fractures become compound fractures when they are treated by the method of open incision. In the care and treatment of ununited fractures, or pseudarthroses, the method of incision, resection of the ends of the bone and fixation of fragments by some of



Radiograph taken five weeks after injury.

the various methods, has the almost general support of the profession.

Methods of Fixation.—Many schemes have been proposed by the profession to carry out the purposes of fixation. Some of them are very ancient. Senn⁵ says that Lapeyode and Siere, of Toulouse, are supposed to have been the first to use silver wire for this purpose in 1775. Both Agnew and Holmes say that fixation by wiring was first suggested by Horeau in 1805. In 1845 Dieffenbach advocated drilling several holes through the ends of fragments and the insertion of ivory pegs, but this was rather for the purpose of exciting inflammatory action and the deposit of bony callus than for fixation; the pegs were subsequently removed. With the same object in view Pancoast, in 1857, drilled through both fragments, pinning them together, and left the drill in position, removing it after bony union had been secured.

Among the modern methods of fixation the principal are: suturing; the use of ivory nails, cylinders or clamps; also intraosseous splints, and ferrules of bone, as recommended by Senn; and fixation by metallic clamps or plates, spikes, screws, or nails. A very general assent has been accorded by the profession to the use of catgut and kangaroo tendon for suturing soft structures: periosteum, torn ligaments, muscles and fascia. Senn also uses catgut to hold in place the fragments that have become separated in compound fractures, both of long bones and the skull. He carefully disinfects the separated

fragments by a warm 2.5% solution of carbolic acid, or a weak mercuric chlorid solution, places them in warm salt solution, reimplants them in their normal location and secures them by heavy catgut sutures and ligatures. His results have been most gratifying.

The whole trend of modern surgery is in the direction of the absorbable suture. Edebohls and Noble use catgut exclusively in their abdominal work. Kelly uses silk only in his four cardinal sutures for the ovarian and uterine arteries. Halsted, however, still uses silk in abdominal work, and buried silver wire in hernia. Silver is the only unabsorbable material that is worthy of the confidence of the profession in buried sutures. The investigations of Halsted and Welch demonstrate that silver has germicidal properties which render it serviceable in this work, and also as a first layer in dressings for raw surfaces. It is very easily encapsulated and very seldom gives trouble in bony structures. In three cases in which I have used silver wire for suturing the patella good results were obtained, but one of the patients returned at the end of six months with a suppurating sinus, caused by the silver wire breaking through its capsule, making its removal necessary.

The use of ivory and bone in the form of cylinders or intramedullary splints, clamps, and ferrules, has received considerable attention from some members of the profession, but they serve to show the ingenuity of the originators rather than any practical value they may possess. Their use has not become general, and probably never will. The use of metallic clamps or plates, spikes, screws or nails, has received considerable attention.

Several writers describe a clamp, made on the principle of the "iron dog" that sawyers and woodchoppers use to hold the log in position, called by one writer Gussenbauer's clamp, by another Brun's double metallic nail, one prong of which is driven into each of the fragments and allowed to remain until after union is effected, when it is removed. On the same principle Langenbeck screwed or drove a steel screw into each fragment and connected them by an iron bar. Parkhill's method of fixation, as described by Bryant, is a modification of Langenbeck's. Estes⁶ describes a nickeled steel plate which he has been using to maintain coaptation in compound fractures for years. This plate, which is perforated with six holes, is laid across the fracture and holes drilled into the bone to correspond with those in the plate. The plate is then fixed by ivory pegs, which protrude from the wound. The plate is removed in three or four weeks by breaking off the pegs and withdrawing the plate through a small incision. In a recent letter, Dr. Estes says: "The little plate has given me great satisfaction and has been quite successful in St. Luke's Hospital." Wharton and Curtis describe a similar device in which the plate is made of silver and is secured by silver screws, entered flush with the plate and permitted to remain permanently unless suppuration ensues. Steinbach⁷ reports four cases of fractured tibia in which he used silver plate after this method and in which he got good results. He removed the plate under local anesthesia. Several kinds of such plates have been devised and recommended, made of different materials and secured by various devices. If a good aseptic condition has been secured and the fixation devices be made of silver, whether it be wire or screws or nails, or plates secured by screws, suppuration may not ensue.

What has just been said will apply with equal force to spikes and screws or nails. In resections of the large joints, as the knee, one or two nails or pins of steel, or some other metal, are a great help in maintaining apposition and immobility; but unless they be of silver they should protrude from the wound so as to be removed after a reasonable time. This method is given by Leech⁸ and accredited to Annandale.

Current medical literature contains the reports of a goodly number of successful cases in which nailing has been resorted to. Bryant says that operative treatment in fractures of the femoral head was first suggested by



Photograph taken six months after injury—flexed position.

Langenbeck and successfully carried out by Koenig. I quote from "Bryant's Operative Surgery:"

Koenig operated in a case of recent fracture, making a small incision over the outer side of the trochanter major, drilled a hole through it with a metal drill in the direction of the head of the bone, applied extension to the limb to the extent necessary to overcome the deformity, and then drove a long steel nail through the canal in the trochanter into the head of the bone and left it there. The limb was then immobilized and extended for six weeks. There is no record of the ultimate shortening, but good union and free motion of the joint were obtained.

Cheyne, in a case of recent fracture, exposed the fragments through a longitudinal incision made over the anterior aspect of the joint, exposed the fracture, made extension and internal rotation of the limb, and with the fingers in the wound manipulated the fragments into place; then a small longitudinal incision was made over the outer side of the trochanter major and two canals drilled through the fragments at a distance of $\frac{1}{2}$ inch apart. Ivory pegs were then driven through the holes made by the drill and the limb immobilized. Good union and motion were obtained, but there is no record of measurements of the limb.

Gillette reports three cases of ununited fracture of the neck of the femur operated upon in the following manner: A horseshoe incision with its convexity downward was made, beginning an inch below and an inch posterior to the anterior spine of the ilium, carrying it down two inches below the trochanter major and bringing it up to the buttocks to about the center of the gluteus maximus muscle. The skin and the two layers of fascia were dissected up *en masse*. A chain saw was then passed between the posterior border of the tensor vaginae femoris and the gluteus medius, hugging the neck of the femur and the base of the trochanter major; it was brought out between the posterior surface of the gluteus medius and the anterior surface of the gluteus maximus; the trochanter major and its muscular attachments were sawed off, turned back, thus exposing the capsule of the joint. Then, by making a longitudinal incision into the capsule the fracture could be easily seen. The surfaces of the fractured ends were denuded and a bone peg driven through the neck of the femur, thus holding the fractured ends together. The capsule was stitched with catgut, the trochanter major restored and nailed in place with a small bone peg, the skin closed, and the limb immobilized. There was union and good motion obtained in all the cases, with shortening of from 1 inch to $1\frac{1}{2}$ inches.

Curtis, in a case of ununited fracture of the neck of the femur of three months' standing, exposed the fracture through an anterior incision, passed a drill into the callus and between the fragments to cause irritation, applied extension to the limb and reduced the deformity, after which a drill was passed through the trochanter major from the outer side, transfixing the fragments; the handle of the drill was then removed and the drill itself left *in situ*. The anterior wound was closed and the limb immobilized. The extension was maintained for six weeks, at

the end of which time the drill could be easily removed. Good union and a useful limb were obtained, with three-quarters of an inch shortening.

At the meeting of the Medical Society of the State of Pennsylvania, in Philadelphia, September, 1901, Dr. Charles E. Thomson, of Scranton, reported a case as follows:

The patient, a man of 62, was injured by a fall of rock in August, 1899. He was bedridden three months, no diagnosis having been made. He then came under Dr. Thompson's care. A diagnosis of intracapsular fracture was made by radiographs. Operation recommended by Gillette, of St. Paul, was done December 12, 1899. A horseshoe incision was made around the trochanter major down to the periosteum. The flap being elevated, a second flap, including periosteum and a section of bone, about one-third of the shaft in thickness, $2\frac{1}{2}$ inches below the trochanter was made and turned up. The fracture was found comminuted. Several pieces of bone were removed, the fractured ends adjusted, and a solid silver nail, $\frac{1}{8}$ inch in diameter and $2\frac{1}{2}$ inches long, was driven through the neck and into the head of the femur. The nail held the fragments firmly together, the wound was closed with catgut sutures, and the entire extremity and body encased in a plaster-of-paris dressing extending from axilla to the tip of the toes. No fever followed, the initial dressing was removed at the end of two weeks. At the end of five weeks the dressings were removed and the patient allowed to move about. He left the hospital on crutches. Seven months after the operation he complained of pain. A sinus had appeared at the seat of the incision, and this was followed later by an accumulation of pus in the gluteal region, which was evacuated under cocaine, a slight sinus persisting. Improvement continued for 18 months, when he walked without cane or crutch. He had 90° of free, painless motion. Shortly after he was found dead in bed.⁷

Dr. Thomson also reported at the Saratoga meeting of the American Medical Association the following:

On February 7, M. M., aged 60, a miner by occupation, fell on the ice, striking his hip. He was carried home, and put to bed for three days, afterward being allowed to sit in a chair, where he spent three months. He could not put weight on the limb for 18 months, and had constant pain in the hip. He walked bent almost double, with both hands on his cane, on which he carried the greater part of his weight, dragging his right limb. There was a shortening of one-half inch, and marked eversion of the limb. On manipulation a distinct movement could be made out between head and trochanter. On examination the patient appeared much beyond 60, and showed signs of senile degeneration; general muscular atrophy, arcus senilis, and atheromatous arteries. August 28, 1901, under complete chloroform anesthesia, a horseshoe-shaped incision was made around the great trochanter down through the muscles to the periosteum. In this case no bone flap was made; the capsular ligament was opened and the free motility of the head ascertained. We deemed this step necessary because the skiagraph showed what we feared was ankylosis of head in the acetabulum. I then drove two solid silver nails, $\frac{1}{8}$ inch in diameter and 2 inches and 3 inches long, respectively, through



Straight position—photograph taken six months after injury.

the great trochanter, neck, and into the head of the bone. Only the long nail reached the head. It was not necessary to use the drill before driving the nails. The capsular ligament was closed with catgut sutures, external wounds with silk-wormgut without drainage, an aseptic dressing applied, and the entire limb and body encased in a plaster-of-paris spica. The patient did not suffer from the operation. He was allowed to turn over in bed. There was no elevation of temperature. The wound was dressed through a fenestrum in the spica at the

end of the third week, when the stitches were removed. Primary union was complete. The patient was removed from the hospital at the end of six weeks, and the spica taken off at the end of nine weeks, when the union appeared firm and there was 45° of free motion in the hip. Three months after the operation he could bear over half the weight of his body on the limb, and could walk upright. There was one inch shortening. Nine months after the operation the limb was straight, motion normal, shortening one inch, and he can bear the entire weight of the body on the limb without pain. He walks with a cane, but can walk very well without it. There is no pain except on direct pressure over the seat of operation.

Dr. Reed Burns, of Scranton, writes me under date of October 10, 1902: "I have nailed one fracture of the neck of the femur in a girl 10 years of age, four months or more after it occurred. I found the neck had been almost entirely absorbed; still the result has been quite satisfactory."

Dr. Leonard F. Hatch,¹⁰ of Lynn, Mass., is strongly in favor of the treatment of fractures by a new method, the principle of which is to convert all compound fractures into simple ones, and when necessary to make simple fractures first compound and then simple again. He gives reports of 15 fractures treated after these principles, six compound and nine closed, or simple fractures, four of the long bones and five of the patella, all of which healed without pus and gave perfect results. He insists upon the most rigid antiseptic precautions, free incision in closed fractures, and he enlarges the wound in compound fractures when necessary, washes out thoroughly all clots and debris, removes all shreds of soft tissue and loose pieces of bone that interfere with perfect coaptation, ties all bleeding points carefully, replaces the periosteum when it is separated, accurately adjusts the fragments, using no means of direct fixation in long bones, and closes the wound with catgut sutures without drainage. Splints are applied and bandaged firmly. Dressings are removed on the seventh or eighth day and plaster cast or ambulatory splint is applied. In fractured patella he resorted to direct fixation after the method recommended by Butcher. He claims that this method of treating fractures is attended with less pain and swelling than the other methods; that it shortens the time of recovery by at least a week; that it prevents deformity and nonunion. He also strongly commends and advocates the ambulatory treatment.

The following case appears somewhat unique:

On December 4, 1901, I was called in consultation with Dr. Nathaniel Ross, of this city, to see W. T. at his home. The following history was given: The patient, aged 17, a pattern maker's apprentice, was injured about two hours before by his right elbow coming in contact with a band saw. The saw had cut through a cotton shirt and a heavy undershirt, and the elbow-joint was gaping open, a wound four inches long extending across the posterior aspect. A fragment of the olecranon three-quarters of an inch long was completely severed and retracted by the triceps tendon, and the trochlear surface of the humerus scratched by the saw teeth. The wound was thoroughly cleansed and irrigated with mercuric chlorid solution, about 1:3,000. The retracted fragment was brought down and nailed to the shaft of the ulna by driving a wire nail, called in the shops a cast steel wire brad 1½ inch, No. 16, entering about one-third of an inch from the margin of the fragment and penetrating the shaft about three-quarters of an inch. The soft parts were closed with interrupted silk sutures, the upper flap punctured so that the nail protruded slightly, a skein of catgut was left in the inner angle of the wound for drainage, and sterile gauze dressings applied. The limb was placed in a straight anterior splint from shoulder to wrist. The most perfect antiseptic precautions possible were observed throughout. The wound healed without suppuration, and the sutures were removed at the end of a week. The nail was withdrawn January 11, 1902. On the same day the accompanying x-ray picture was taken by Dr. Ahlborn, of this city. Passive movements were begun on this date and a Stromeyer splint applied, the angle of which was changed slightly every day. The accompanying photographs were taken in June, one showing the limb in a straight position, the other with the forearm flexed on the arm beyond a right angle. The patient has perfect motion of the elbow-joint, and an entire absence of deformity; in short, a perfect restoration of function.

It will be observed by consulting the radiograph, which was taken after the expiration of the fifth week, that there is little or no callus to be detected, thus con-

firming the statement of Senn that "accurate coaptation and fixation of fragments is conducive to ideal callus production," while we all know that imperfect coaptation and faulty immobilization conduce to excessive callus formation, which is most unfortunate in joint fractures. Indeed, the accurate union in this case and freedom from callus encourages the belief that osseous wounds may heal per primam very much like wounds in the soft parts.

This gratifying result warrants the conclusion that in order to secure a condition of very satisfactory asepsis it is not necessary to have at our command all the paraphernalia of the modern operating-room. Here the operating-room was the kitchen, but a very neat kitchen, in a comparatively new house; the table, a common kitchen table; the sterilizer, the range; with a tin pan in which the instruments, the nail and even the metal tack-hammer were boiled, and which served as an instrument tray during the operation. The operator should also be emboldened to attempt more surgery in the homes of patients, for with the common-sense means at our hands for disinfecting and sterilizing, to which may be added the use of rubber gloves, it is not always necessary to incur the inconvenience and suffering of rushing patients off to a hospital in order to get clean surgery, or to secure good results.

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ANEURYSM OF THE DESCENDING AORTA DIS-PLACING THE HEART.

BY

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CASE.—W. R., aged 48, is single and a miner by occupation. He has always done hard work, and has dissipated considerably in most every way. He has had the ordinary diseases of childhood, also erysipelas, malaria and yellow fever. He contracted syphilis 27 years ago.

I first saw this man in April, 1900, at which time he complained of pain in the back between the shoulder-blades. He had had this pain off and on for the past year. He described it as a dull ache. Examination showed dullness at about the seventh, eighth and ninth ribs posterior and to the left. There was no pulsation in this area. Heart impulse was visible over a wide area, the whole left chest, anterior, shook from the impulse. Apex beat was plainly felt three inches below and in the nipple line. The area of heart dullness was increased, it seemed as if the whole heart was bumping against the chest wall. The first sound at the apex was loud and strong. The second sound continued as a loud murmur, ending with the first sound, heard best over the mitral area and transmitted toward the apex. No murmurs were heard at the base. The heart seemed very close to the chest wall. The condition was very puzzling, and in my notes at that time a provisional diagnosis of mitral stenosis was made, little dreaming that an aneurysm was immediately behind the heart, crowding it to the wall and pressing the mitral area, producing a temporary stenosis. After a few days' rest in bed the heart quieted down considerably, the murmur still continued but was not so loud.

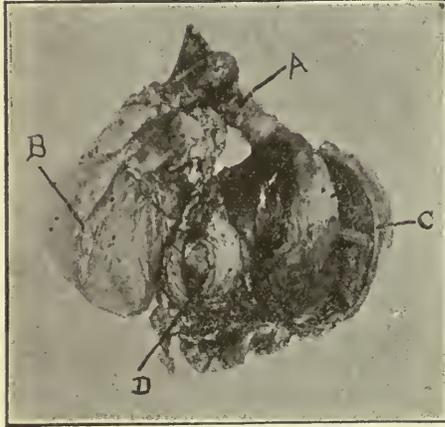
My patient improved rapidly and left camp in a few days, disappearing from view.

On September 4, 1901, just 17 months from the time of his disappearance, I was called to a tent and there recognized my old patient. He had aged 10 years since I last saw him, had become gray, emaciated, pale and haggard, careworn and weak. He complained of shortness of breath, pain in the back and around the heart and palpitation of the heart. He had smothering spells, was losing weight, could not swallow solid food and liquids went part way down, then stopped, and after a few moments either passed on or came up.

Upon examination an impulse could be seen in the fifth interspace internal to the nipple line on the left side, or in what is ordinarily considered the normal heart impulse area.

Palpation revealed a heaving impulse at this point and by

careful attention a distinct expansile sensation could be made out; the impulse was synchronous with the radial pulse. With the stethoscope the impulse could be heard, but there were no murmurs and no heart sounds in the left side of chest; dulness was pronounced in the region of impulse. At the right border of the sternum at about the fifth rib the heart sounds could be distinctly heard; no murmurs could be made out, although the valve areas could be easily placed. Further examination revealed an area of dulness extending from the right to the left nipple and between the fourth and sixth ribs, and extending downward and to the right to a hand's breadth below the right



A, Aorta. B, Heart. C, Left and larger portion of aneurysm. D, Cartilaginous portion of aneurysm which was attached to sixth rib anterior.

costal margin and in the epigastrum. No pulsation of the abdominal aorta nor of the femorals could be felt; the radial pulses were synchronous and of good quality, rate being about 80 per minute; artery was tortuous but no hard. Tracheal tugging was negative. A slight cough was present but not of a metallic character; there was no hoarseness.

A diagnosis of an aneurysm of the descending aorta below the bifurcation of the trachea and displacing the heart to the right was readily made.

Rest in bed, Tuffnell diet, and large doses of potassium iodid were instituted. Improvement began immediately and in 26 days the pains and pulsation had disappeared, dulness alone in normal heart area remained. The heart remained on the right side; the patient felt strong enough to go to work and so disappeared from view. He would not allow further treatment nor would he go to a hospital. I learned afterward that he was dissipating considerably.

On February 8, 1902, I was called to see my old patient, who had been drinking heavily and was supposed to be dying. I found him suffering intensely, he could scarcely breathe, and had severe pains and soreness over the chest and abdomen. He showed plainly the effects of deficient aeration. Heart impulse could be seen, felt, and heard at the tip of the ensiform cartilage. The left chest was partially filled with fluid. No pulsations could be seen or felt, and no murmurs heard. The liver dulness extended to the left and below the umbilicus.

On the following day the left chest was found to be filled with fluid which upon aspiration showed pure blood. The patient grew steadily worse, and slowly died on February 17, just 9 days from the time the leakage began. The postmortem findings were as follow:

Necropsy, 9 hours after death. The apparent age is about 60. Rigor mortis was well marked. Abdomen distended, and the intercostal spaces of left chest obliterated.

On opening the chest the left pleural cavity was found filled with blood. Some old clots were present. Mediastinum was displaced to the right, and there was no blood in it. The upper lobe of the left lung was lying in a blood mass, and had the

appearance, shape, and consistency of an enlarged soft spleen. Lower lobe was collapsed by compression of its mass against the chest wall. The right lung was edematous, and had numerous pleural adhesions.

The heart was lying to the right of the sternum with the left border at the right edge of the sternum vertically placed with the apex at the tip of the ensiform cartilage. It was slightly enlarged, especially at the base, and the muscle was flabby. The aortic opening was dilated, and the aorta sacculated with adherent clots and a nodular form of arteriosclerosis. The aortic valves were incompetent, with small tears near their bases. The mitral valve was negative. Springing from the descending aorta, just below the arch, was a large aneurysm the size of an adult head, attached behind to the seventh, eighth, ninth, and tenth dorsal vertebrae, which were eroded on their left sides and in front to the sixth rib, just internal to the nipple line, by a cartilaginous hardness. This attached portion was the original pulsating tumor, which came up behind the heart and displaced it. Another and larger portion spread to the left, passing between the lobes of the left lung, pressing the lower lobe against the chest wall and collapsing the upper lobe by shutting off its bronchus.

The aneurysm was also firmly attached to the pericardium, left pleura, and diaphragm. The esophagus was firmly pressed to the aneurysm by its envelopments. Its upper end being sacculated, explaining the symptom, dysphagia; its lumen was patulous, it was not eroded.

The thoracic duct could be traced to the aneurysm, but was there obliterated. The left vagus was also apparently destroyed as it passed the aneurysm. The aneurysm had not ruptured but was leaking; it was well filled with clots, but in places there was none.

The diaphragm was depressed and its curvature obliterated. The liver was enlarged, pushed forward, downward, and to the left, extending below the umbilicus. The surface was granular, hard, and resisted cutting. The cut surface shows characteristic nutmeg liver. The stomach and other abdominal contents were considerably disarranged.

An interesting question might be brought up in connection with this case: Was the diastolic murmur heard at the apex in the beginning due to pressure of the aneurysm against the heart, or was it Flint's murmur, or an aortic regurgitation?

The absence of a murmur at the aortic orifice and the facts that no murmur could be heard after the heart had slipped to the right and that the mitral valves were found negative at the necropsy lead me to the opinion that the murmur was produced by the squeezing of the heart between the aneurysm and the chest wall.

I believe I am strengthened in this opinion by a case of Dr. Osler's, mentioned in his textbook, third edition, p. 724, in which he intimates that possibly a presystolic murmur was produced by a greatly enlarged spleen with dropsy pushing the heart strongly upward.

COMMUNICATED INSANITY OR PSYCHIC INFECTION.

BY

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That an individual may imbibe ideas from another, incorporate them into his own mentality, believe in them implicitly, and conduct himself in accordance with this belief, is a fact within the observation and knowledge of all. That he may imbibe ideas contrary to former methods of thinking, that under the stress of sufficient personal influence he may even adopt beliefs directly opposed and contrary to all previous convictions and which necessitate a complete reconstruction of his entire mental fabric, is not such a common event, but occurs with a sufficient frequency to establish its possibility. A man previously steeped in sin, a frequenter of evil places, a brother of vice, at variance with society and waging war against the church, attends a religious revival. He comes to scoff, and night after night the pleadings and importunities of the faithful are laughed to scorn. But the ceremonies are impressive, the very atmosphere is surcharged with religious enthusiasm, every word uttered and every note sung is saturated with the essence of this new truth, until suddenly, and without any unusually apparent external cause he makes a complete mental surrender. It is not a matter of reason. It is not a matter of judgment. In one moment he has abandoned all the theories, beliefs, and opinions of years and adopted, without hesitation, new theories, new opinions, and new beliefs simply at the



A, Aneurysm. B, Heart.

instance and suggestion of others. The change is so extraordinary, so wonderful, so miraculous that he can ascribe it to nothing short of Divinity itself, and in many instances the psychic metamorphosis is so complete as to stand the test of years.

Again, take a man who is modest, retiring, and unassuming; a model husband, a good neighbor, and a faithful friend. He is kind, considerate, and charitable to a marked degree. His judgment is sound and practical, and has proved a sheet anchor to many friends in times of stress and storm. One day he casually joins a crowd on the street and listens to an impassioned orator, whose words come hissing from a hot and seething brain, and the wild and fanciful theories which fall from his lips seem monstrous in the extreme. He wonders that the crowd remains to hear. Later he wonders that he remains himself. But the eloquence of the speaker is fascinating; his statements are alluring and his arguments appeal to some primal elements in the man the existence of which had never before been suspected. As he listens he becomes more and more convinced. Fantastic and even dangerous theories now appear to be dressed in the garb of truth, and he imbibes, absorbs, and adopts until he finally becomes one of a furious mob, flinging defiance at the laws of both God and man.

It is unnecessary to dwell on a phenomenon so frequently observed, so easily recognized, and so universally believed to be true. Knowledge is acquired. Information must come from others. Relying so much on others for what we know, and realizing our helplessness without their aid, we feel some delicacy, or at least some hesitation, in refusing proffered aid, simply because the theories advanced are a little shady or seamy. Having once adopted them, they eventually become a part and parcel of ourselves, and sometimes, like deformed or misshapen children, receive unusual care and attention. Consequently, from great anxiety to know more we occasionally accept what is not exactly true, and are allured by striking and novel theories painted in false but glaring colors. More than this, owing to our great faith in some particular teacher, or writer, or friend, may we not unknowingly accept ideas that are absolutely false, and that in after years may impair mental integrity and form the basis of that dark and tangled thread which runs through so many judgments? The followers of all great leaders have experienced this in a measure. The disciples of dowieism and christian science and various other fads have demonstrated it beyond the shadow of a doubt; if they have stopped short of believing that the moon is made of green cheese, it is only because the heads of their respective organizations did not teach it. The proneness of the human mind to adopt vagaries is doubtless due to several causes. There is a psychic reaching out for something which this life does not supply; a mental craving for the mystic, the unreal; a burning desire to explore the mysteries of a recently discovered country, called New Thought, and, like people who tour everybody's country but their own, these travelers in the world of New Thought are those who know little or nothing about Old Thought. Common, ordinary, practical, methodic ways of thinking are too much for them, and they reach out for something easy and flighty and expressed by the "thusness of the which." Last, but not least, there is the personality of the originator standing behind the idea, and, when the association is direct and intimate, this counts for much.

These peculiar fads, however, are regarded as legitimate, or at least are tolerated, but while their promoters and followers have never perhaps had any direct or important dealings with the commissioners of insanity as by law provided, yet I doubt very much if any outside their ranks look upon them as models of sanity.

Granting then that we do sometimes accept theories and opinions of more or less questionable sanity and incorporate them into the working formulas of our lives,

the object of this paper is to ask whether or not it is possible for one to unconsciously absorb and finally adopt the *insane* delusions of another? Can an insane individual communicate his insanity, in the same form, with the same delusions, the same hallucinations, and the same general manifestations, to another? The following case in point will serve as an illustration.

On April 22, 1895, two sisters, twins, aged 40, were brought before the commissioners of insanity of their county, adjudged insane and admitted to this hospital. They are designated on our records as Nos. 1,481 and 1,482, and the history of each is as follows:

No. 1,481.—The patient, a white female, aged 40, was born in Indiana. She is a Protestant and is single. She has had a common school education and is a book agent by occupation. This is her first attack, the duration before admission being about 18 months. Special history accompanying the papers of admission was as follows: This lady became insane about 18 months ago. The Lord tells her not to eat for a certain length of time. Symptoms are on the increase. There is no adequate external cause for mental trouble. At times she refuses to eat.

No. 1,482.—The patient, a white female, aged 40, was born in Indiana. She is a Protestant and is single. She has had a common school education and is a book agent by occupation. This is her first attack, the duration before admission being about 18 months. Special history accompanying the admission papers was as follows: This lady became insane about 18 months ago. The Lord tells her not to eat for a certain time and then tells her what to eat. She has been very religious for some time. She refuses to eat for 14 or 15 days and then will eat for a time. There is no adequate external cause for mental trouble. These sisters are still in the hospital and the following is an abstract of their history subsequent to admission.

No. 1,481.—This is a case of chronic mania, with delusions of a distinctly religious type. She holds communications with the Lord and receives instructions from Him regarding her daily conduct. In this way she is told when to eat and what to eat. She receives warnings of attempts to poison her by the introduction of poisonous materials into her food. She secludes herself in the toilet-room and preaches at the open window, in a loud, declamatory style, to the world at large. She is resistive to the limit of physical strength but is cowed by superior numbers. She mistakes her ward physician for a former superintendent and charges him with various crimes and misdemeanors. She believes there is a conspiracy on foot to murder her, though she gives no reason why, but has unlimited confidence in the Lord and her own physical strength to prevent it. She is much concerned about her sister's welfare; this is about the only natural thing noticeable in her conduct. For a time she was allowed to visit her sister in another ward at frequent intervals, but her influence on her sister was so bad that the visits were discontinued. She is at all times very disorderly and disagreeable.

No. 1,482.—This is a case of chronic mania with religious delusions and marked impressions with a religious coloring. She is on her knees, praying in a loud voice, the greater part of the time. She receives communications from the Lord regarding her food and general conduct, and it is noticed that this delusion, which abates at times, is much stronger and more dominant after a visit from her sister in another ward. She secludes herself, when permitted, in a room where she can see her sister at the window in the ward above and there drinks in the words of exhortation with eagerness. She has no strength of character and when permanently kept away from her sister seems to recognize a lack of support, is less assertive, and there is evidence of a tendency on the part of her delusions to dissipate and re-form into several delusions, illy-defined and variable, except that the religious element permeates the whole. She is becoming extremely filthy in her habits and has no care of her person. She is disposed to disrobe and requires almost constant care and attention. She anoints her hair with saliva and smears the same material over her face. She is extremely disorderly.

This, in brief, is the history of these two patients, who for purposes of comparison may be designated A and B. Though we have no definite recorded history to that effect, it is evident that all through life patient A has had a marked influence over B. A has a firmness and stability of character which is in strong contrast to the weakness, unsteadiness and vacillating mentality of the other. Even after their admission here A occupied the position of counselor and adviser to B whenever an opportunity offered. A's delusions were fixed, unchangeable, and never wavered from their first inception. B's delusions were more unstable and variable, especially in intensity; at times, in danger of being altogether submerged beneath a sullen, surly, dogged obstinacy,

but after a visit from her sister coming out strong and vigorous as though they had again felt and responded to the touch of a master hand.

The sisters lived a secluded life, except when occupied at their vocations, and had no interest in nor feeling or affection for anybody but each other. In this seclusion they reacted on each other in a varying degree. The stronger character of A dominated and molded the mental life of B, while the latter evidently looked to her sister for guidance and direction; believed in her implicitly and relied upon her with a faith that was childlike in its purity.

What else than the dominating leadership of the one and the childlike trust and simplicity of the other could account for the facts as we find them? The same religious delusion entertained by both, varying only in its intensity. A believed that her food was poisoned at times, refused to eat, and moral suasion being ineffectual was fed mechanically. B entertained the same belief; strong after a visit with her sister, weak after a period of separation, and would refuse to eat, but could always be prevailed upon to take food. A desirous of gaining access to an open window where she could exhort her sister, and B equally desirous to stand at an open window where she could receive the admonitions of A, and consequently be strengthened in faith.

Heredity may have prepared the soil in both, but heredity, which cannot even transmit disease, surely could not dictate years in advance that when these brains did succumb it would be manifested by the same form of mental alienation, with the same delusions and similar resultant manifestations. These cases resemble each other too closely for that. Was the hereditary influence in this instance exaggerated beyond anything hitherto recognized, by virtue of their being twins? I think not. But let us see. Here is another case also on the records of this institution.

On June 16, 1899, two sisters, one aged 32 and one 28, were admitted to this institution, and the similarity between these two cases and the twins previously mentioned is very striking. They are designated on our records as Nos. 2,590 and 2,591, and their history before admission is as follows:

No. 2,590.—The patient, a white female, aged 32, was born in Iowa. She is single and a school teacher by occupation. She has had a common school education. This is her first attack, and was caused by worry over family affairs. Her form of disease is delusional melancholia. The duration of disease before admission is unknown.

Special history accompanying the papers of admission: The first symptoms were manifested some years ago. She is deranged on the subject of religion, and has an idea that she has been wronged. She has threatened to injure others.

No. 2,591.—The patient, a white female, aged 28, was born in Iowa. She is single and a school teacher by occupation. She has had a common school education. This is her first attack. The cause is unknown. Her form of disease is delusional melancholia. Duration of disease before admission was three months.

Special history accompanying the papers of admission: Derangement is manifested on the subject of religion, and she imagines that family wrongs exist. She has threatened to injure others.

The following subsequent history is gleaned from our records:

No. 2,590.—This patient has been very much under the influence of morbid thoughts and feelings since her admission. She took a school in April, but, after teaching three weeks, concluded she was "crazy" and left the school. She imagines great wrongs have been committed against herself, and threatens vengeance against others. She is very emotional and restless, and has been quite irritable on several occasions. *She is very much concerned about her sister's condition, and inquires for her frequently.* After two months she began to improve, and made a good recovery, being discharged October 23, 1899.

No. 2,591.—This patient has marked delusions of persecution. She has been teaching, and thinks every one became set against her in the vicinity in which she taught. She is restless and disorderly about her clothing, and disposed to disrobe herself at all times unless prevented. She was kept in bed two days and then allowed to get up at her own request, but persists in returning to bed every little while unless prevented by the nurses. Says she is not ill, but goes to bed because she doesn't know what else to do. She is weak, careless, indolent,

and without energy. She believed that some of the family had been wronged, and retained her delusions of persecution for some three months, when she began to improve. She made a good recovery, and was discharged October 23, 1899.

These two cases are remarkable in many ways. Both were nearly the same age. Both were single. Both were teachers. Both had the same form of disease. Both had the same delusions. Both had the same desire to injure others. Both were admitted to the hospital on the same day. Both recovered at about the same time, and both were discharged from the institution on the same day. Then note the points of similarity between these cases and those of the twin sisters, and for purposes of comparison let me designate the last-mentioned cases as Y and Z. The insanity of Y preceded that of her sister by some years. She was the elder of the two, and was stronger and more dominating. Z was weak and vacillating; would lie on the bed for hours, if permitted, devoid of any strength of character, while energy and self-reliance were nil. Y had delusions of persecution, and believed some great wrong had been done *herself*, while Z had the same delusions but believed some injury had been done *some of the family* (evidently her sister). But while Z does not feel that *she* has been wronged particularly, yet she adopts the same ideas in regard to injuring others as her sister.

Surely much could not be claimed for heredity in this instance, for whatever impress was stamped upon the infant in its mother's womb both children could not have been stamped at the same time. Then, whence this great similarity? Other factors may have been at work, but in two such cases, so nearly identical that the history of one is practically a copy of the other, save in the origin and intensity of the disease, is it unreasonable to suppose the possibility of the insanity being communicated? Could heredity account for all this? I still think not. Fearing, however, that some may still be inclined to give heredity undue prominence I will refer briefly to one more illustration, a man and wife, who were both at one time inmates of this institution:

No. 2,379.—The patient, a male of 35, is married and is a farmer. He has had a common school education. The cause of insanity is religion. Duration of attack before admission was about five months. He has a strong hereditary tendency. The form of insanity is primary mental deterioration. He was admitted to the Independence Hospital May 28, 1898, and transferred to the Clarinda Hospital September 30, 1898.

His history subsequent to admission is briefly as follows: He is intensely religious and is dominated by delusions of a religious type. He alternates from periods of exaltation, accompanied by acts of violence when interfered with, to states of pronounced morbid depression, but the religious element runs through it all. He has many delusions and all are well defined. He has threatened suicide during periods of depression. Later his delusions became more simplified, and were finally merged into one concise statement, viz.: That he was Christ. He has made no improvement in any way, and on August 29, 1902, was transferred to the new hospital at Cherokee.

No. 2,352.—The patient, a female of 31, is married, being the wife of the patient whose history is given above. She is a housewife, and has had a common school education. The cause of insanity is religion and the influence of her husband. The duration of attack before admission was five months. There is no history of heredity. The form of insanity is given as primary mental deterioration. She was admitted to the Independence Hospital May 25, 1898, and transferred to the Clarinda Hospital September 30, 1898.

Her subsequent history is as follows: The patient is quite excitable, emotional, and devoid of proper will power or self-control. She has peculiar religious ideas, resembling those of her husband, but not clearly defined, and in attempting to give them expression she shows much mental confusion, sometimes approaching incoherence; while at the same time she has the appearance of one who is striving to recall impressions the details of which have escaped her memory. On other subjects she is clear and rational. Later the delusions became more and more evanescent, and finally disappeared. Whenever the question of her discharge was brought up, however, she begged to be allowed to remain here so that she might be near her husband. She was finally discharged recovered December 14, 1900, and, so far as known, has remained well.

The peculiarities of these two cases come out prominently in the history of each. One, the husband, having well-formed delusions of a religious nature; his wife

entertaining much the same delusions, but illy-defined. The husband having a strong hereditary history, namely, a mother insane and two cousins who committed suicide while insane. The wife had no hereditary history but was described as having no will power or self-control. The delusions of her husband growing stronger after separation and becoming more clearly defined; the wife's delusions, on the contrary, under the same circumstances become more wavering, uncertain, and finally disappearing. It may be mentioned here that the wife, even after recovery, failed to realize or recognize the extent of her husband's mental alienation.

The one fact which stands out conspicuously in the foregoing illustrations and which is so striking as to challenge attention is this: In each case the delusions communicated have been exclusively of a *religious* nature. Is there no significance in this? Is there any dissimilarity in the ease and facility with which different forms of delusions may be communicated to another? I am inclined to believe that in all the illimitable world of thought no delusions would be so readily accepted and adopted by another as those pertaining to religion. The human mind is peculiarly susceptible to the mysterious, and all sorts of religious vagaries find there a lodgment and a fruitful soil. Statements regarding things of which we know nothing are accepted with little caution. The essence of religion is not knowledge but faith, and faith is elastic and knows no limit. Knowledge teaches circumspection; faith teaches trust. Knowledge leads to wariness; faith to confidence. Knowledge says, doubt first; faith says, believe. The limit of belief depends on faith, and faith is measured by the confidential relations between teacher and pupil. Consequently it is easy for one whose belief in religion is already firm and sure to accept additional ground for a trial of faith, especially when the incentive comes from one whom she has always regarded as a model of virtue and a fountain of truth. From the sane and rational idea that in some general way the Lord will provide it is only a step to the belief that He will take an active, personal interest in our affairs and will guide and direct in all the multitudinous details of life. It only requires one step more to believe that He absolutely controls the individual's conduct and that every act, regardless of its quality, is performed under the direct supervision and at the instance of the Almighty.

A hurried reading of these cases may not be convincing, but even a brief study will, I am sure, impress the thoughtful man with the fact that such a remarkable array of symptomatic similarities must have its origin in something more than heredity. Taking a thousand cases in this hospital it would be difficult, if not impossible, to find two individuals who have never come in contact with each other, holding identically the same delusions and peculiarities of thought and feeling and giving expression to them in exactly the same way. Why this is so I do not know unless it is that insane minds differ from each other just as sane ones do and that a man retains his individuality whether insane or sane. The whole field of insanity has not yet been covered and many things remain unexplained. There are depths in each human mind that have never been sounded. There are rifts and crevices unexplored where unknown thoughts and feelings lie concealed. There are vast Siberian wilds, peopled with widely scattered fancies that came we know not when. And when least expected these strange and alien sentiments obtrude themselves on consciousness, demanding recognition. Whence came they? How did all these dangerous notions so opposed to all we had been taught and had been led to believe from our youth up gain access to this hitherto peaceful domain? With stringent laws against the introduction of elements so foreign to our natures in what way did these psychic anarchists secure a foothold? They came unconsciously, of course, or at least through ignorance of their real nature. They came stealthily in

times of stress and by virtue of unquestionable faith in some men and things. In unguarded moments, when caution and prudence and doubt, those sentinels on the outposts of mentality, have fallen asleep, queer, peculiar and misshapen concepts have crept in and stamped their lasting impress.

No sane man would voluntarily accept an insane delusion. To recognize it as such would be to reject it instinctively. But are all delusions recognizable as such? By experts, yes. By strangers, frequently. By relatives and intimate friends, seldom, unless their attention be called to their fallacy by others. We are so in the habit of taking our friends for granted that slight modifications of their usual methods of thinking, feeling and acting are likewise taken for granted, and if, in addition, we have had a lifelong training in accepting their every statement as law and gospel, these slight and scarcely perceptible deviations are gradually accepted as a matter of course; when, if the same proposition was presented in its completeness, fully rounded out and well defined, its fallacy would be recognized and the whole thing rejected as spurious.

The change from sanity to insanity is seldom sudden and complete. "It is the little rift within the lute" which daily widens. It is not so much a transformation as a new growth, the delusions developing gradually and the feelings and actions modifying themselves in accordance therewith. Or it may be that the feelings are the first to be implicated. Strange and unfamiliar sensations are experienced by the individual. They are new and unusual and grow in intensity. His knowledge of anatomy and physiology (limited or otherwise) affords no satisfactory explanation, and, as time goes by, the peculiarity of these sensations are thrust more and more forcibly into the field of consciousness and demand a reason for their existence. Being so extraordinary in their manifestations he must needs ascribe them to some mysterious cause, and in his frantic and misguided endeavor to find an explanation the delusion has its birth.

But whatever the form of development, the fact that these impressions can be communicated to another, under certain conditions, cannot be gainsaid; and that such cases do occur, and much more frequently, too, than is generally supposed, I likewise verily believe.

BRIEFS ON PHYSICAL TRAINING.

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No. 4.

Athletic Overstrain.

Athletic overstrain occurs in two forms, which may be termed acute and chronic. The acute form is seen in two classes of individuals: 1. Individuals completely out of training who undertake the performance of feats which could be performed easily enough if they were in perfect condition, but which result in severe strain because of a lack of proper preparation. 2. Individuals who are in excellent training, but who undertake feats for which no system of preparation could properly prepare them; feats which are inordinate and absolutely inexcusable. As the athlete increases in age, this form of overstrain is very likely to occur. The strength of the individual is perhaps at its maximum at about middle life. The elasticity and recuperative power of the muscles, heart, and bloodvessels have, however, begun to decrease. This decrease is, it is true, imperceptible under ordinary circumstances, but the latent defect shows itself immediately the athlete subjects himself to severe and sustained muscular effort. The effect

upon the heart and bloodvessels is particularly disastrous.

Benjamin Ward Richardson, many years ago, called attention to the "white spot in the soldier's heart," due to severe and long-continued exertion. This condition of the heart we are now quite familiar with as one of the marked forms of myocarditis. Minor, but very serious, degrees of the same condition often occur as a consequence of athletic overstrain. In most instances hard training has been kept up for a prolonged period, and there exists a chronic overstrain, with consequent chronic changes in the heart. These come on very gradually, and may perhaps not manifest themselves until, some years later, the individual ceases his training. The effects may not become manifest until he becomes the victim of some acute or chronic disease. This condition of the heart explains why certain persons of fine muscular development and enormous physical strength die as a consequence of so-called heart failure, when all other indications seem to favor a speedy and complete recovery. A wornout heart fiber explains the death of many individuals who are apparently in perfect physical condition, and in whom absolutely no physical symptoms of disease of the heart can be found. The test of such a heart is not the stethoscope, but its behavior under the strain of exercise or disease.

Richardson said that he did not believe there was a professional or celebrated amateur athlete in all England who, at the age of 50, did not present symptoms of heart disease. Whether his statement be correct or not, this much I believe to be true, namely, that the proportion of athletes who, at the age of 50, present symptoms of cardiac disturbance is not a fair criterion of those who actually have damaged hearts. The constant hammering of the heart on the bloodvessels under the strain of excessive physical labor, especially when associated with a liberal diet of proteids, or, as is sometimes the case with athletes during the intervals of training, excesses in venery, tobacco, and alcohol, should be expected to work havoc with the walls of the bloodvessels. Endarteritis, with its attendant train of evils, is a frequent and natural result.

At certain times physical exercise which ordinarily is well tolerated, can be classified as overstrain. For example: In the individual who, soon after a full meal indulges in physical strain usually, if the act be repeated many times, gastric disturbance is produced. Atony of the gastric muscle, with consequent dilation, is a not infrequent result of vigorous exercise when the stomach is distended.

In the previous paper I mentioned incidentally the action of muscular exercise upon the liver. It has been my fortune to observe several cases in which slight hepatic enlargement, with some tenderness and marked disturbance of the functions of the organ, followed immediately upon athletic overstrain. In one instance the gentleman was training under my observation for an amateur championship boxing contest. At the end of this course of training he broke down, and was annoyed for several years by occasional attacks of albuminuria, associated with digestive disturbance, lumbar myalgia, and the condition of the liver above described. In another instance, a very powerful man broke down in a similar manner, and experienced considerable hepatic disturbance for some months. Still a third case worthy of mention: A gentleman who was not in perfect training entered a barge race. When the race, which was a closely contested one, was over, he was greatly prostrated. Beginning with the day of the race, he suffered for more than two years with hepatic torpor, tenderness and slight enlargement, associated with very annoying and very intractable digestive disturbance. This same subject, since ceasing training, has been the victim of very severe and almost unmanageable lithemia.

Many years ago I expressed the opinion that appendicitis was frequently traumatic. I based this view upon

my observation of the extreme frequency of appendicitis in athletes. The correctness of the view which I then expressed is well illustrated by the triteness of this phase of the etiology of appendicitis at the present time. The action of the psoas muscle in bruising the appendix and favoring infection, and the results of pressure of the abdominal muscles upon a distended large bowel are too well known to require comment.

By the chronic form of athletic overstrain I mean the results of hard, steady, systematic training for a prolonged period, when no sudden and violent demand is made upon the patient's strength and skill. The subject may gradually increase his exercise until immense demands are being made upon the resisting power of his heart, lungs, bloodvessels, and abdominal viscera, without realizing at any time that he has subjected himself to severe strain. The constant wear and tear of the muscular labor, with its attendant increased tissue metabolism and increased demands upon the eliminative areas, may give rise to very serious degenerative changes, which are none the less menacing to health and life because of the insidiousness with which they develop.

One of the most frequent and important evils of chronic athletic overstrain is renal disease. The strain thrown upon the kidney in severe and sustained muscular exercise is much greater than is ordinarily believed. Some years ago I conducted a series of experiments upon athletes in training, and found that severe muscular effort was in very many instances followed by more or less albuminuria. In some instances casts were present. Careful, prolonged observation of the class of individuals under consideration has convinced me that the severe strain upon the kidney, incidental to the excessive tissue metabolism and demand for eliminative renal action in athletes, is often responsible for organic renal disease. The disease is most likely to take the form described by Fothergill, as "vasorenal disease," in which interstitial nephritis, endarteritis, and a hypertrophied and, perhaps, dilated heart are conjoined.

Cardiac hypertrophy and dilation are obviously the most frequent of the serious results of athletic overstrain. Moderate cardiac hypertrophy in the well-trained athlete is a normal condition. Excessive training makes it abnormal. The cessation of training also makes it abnormal. When the amount of muscular exercise falls below that which is necessary to maintain the powerful heart action, the integrity of the cardiac muscle soon becomes impaired. The disused voluntary muscles shrink down and cause no trouble, but the hypertrophied heart degenerates, and degeneracy here means serious impairment of its structure and function. *Pari passu* with its degeneration it may develop dilation. More or less fatty change in the heart may be found associated with myocarditis.

A very frequent result of injudicious physical training is emphysema. This is likely to be associated with a dilated heart. The dilation, as usual, follows hypertrophy. In instances of very young subjects, who are athletically indiscreet, chronic, or even acute, dilation, without preliminary hypertrophy, is not infrequent. Exercises involving the lifting or raising of weights, with the lungs distended and respiration temporarily suspended, are most frequently responsible for both the emphysema and the cardiac disturbance. It is wise to inform persons who train, of the dangers of performing violent muscular exercises while holding the breath after full inspiration.

An occasional result of athletic overstrain is aneurysm. This condition is the result of sudden muscular effort involving, as a rule, heavy lifting, or similar straining efforts. It rarely occurs in young subjects with healthy arteries, but develops most frequently in the mid-period of life, when the elasticity of the vessel walls has become impaired and has become replaced by the relatively brittle and inelastic quality of the vascular

tunics of middle life. If the individual has been unfortunate enough to have contracted syphilis, or has the gouty diathesis, or if, superadded to excessive and continuous muscular and circulatory overstrain the drinking habit exists, so much the greater the danger of aneurysm from sudden and violent strain. Continuous excessive athletics, associated with the conditions above mentioned, constitute a most potent predisposition to aneurysm.

The mechanical effects of athletic overstrain upon the kidney are worthy of consideration. It is remarked in this connection that displacement of the kidney in well-trained athletes is very rare. Systematic, long-continued muscular exercise so builds up the power of the abdominal muscles as to afford a distinct protection against renal displacement. Individuals who have not had systematic training, and who consequently are the unfortunate possessors of relaxed and atonic abdominal muscles, may produce renal displacement under sudden and violent strain. I have known it to occur in athletes who were considerably out of condition.

Hematuria from sudden violent strain, as in lifting or wrestling, is an occasional result of overstrain. I have seen several cases of quite obstinate hematuria produced in this way, and others in which it was difficult to dissociate the results of the muscular overstrain from possible direct traumatism of the kidney.

It is worthy of note in this connection that persons who have never indulged in muscular training often tolerate muscular labor much better than the athlete who is out of condition. The explanation of this is very simple. The athlete whose muscles are under perfect control has educated them in such a manner that their full power may be exerted at any moment. The response to his volition is almost as ready as when in full training. The inherent strength of the muscle and its resistancy to strain are very much reduced by being out of condition. When he undertakes to perform a muscular feat of any kind, he instinctively sets about it as though he had carefully prepared for the effort. This he does as a matter of habit. The result is inevitably overstrain. One of my friends not long ago sustained a fracture of a rib in wrestling with a man who was in no sense a match for him. A lack of condition and the relatively brittle bones of middle life were responsible for the accident.

An important feature of continued overtraining is that it may develop chronic general myasthenia. Acute myasthenia is of course frequent. I desire to call attention to the possibility of trauma of the bladder occurring from indulgence in athletic exercises when that viscus is distended with urine. Rupture has been known to occur, although I have never met cases of this kind. I have, however, seen a number of cases in which hematuria and more or less prolonged vesical atony were produced in this manner.

Hernia as a result of athletic overstrain is a very rare condition in individuals who have trained systematically for athletic work. Systematic, gradually increased training is one of the best prophylactic measures against hernia, even in individuals who are congenitally weak in the inguinal region. Sudden muscular strain in individuals unprepared for such efforts is, as is well known, a potent factor in the etiology of hernia. I desire to call attention at this point to the pernicious habit which is prevalent among athletes of wearing a tight belt about the waist during training exercises. The pressure of the belt and the counterpressure of the abdominal muscles bring severe strain to bear upon the viscera and inguinal rings; and in case of a congenital predisposition to hernia that condition is very likely to result from violent muscular effort.

Another point worthy of consideration is the fact that the abdominal muscles never attain a degree of development proportionate to those of the rest of the body when compelled to labor against the constriction of a tight belt. The muscles of the abdomen are, so to speak, placed in

a splint at a time when all the other muscles are having full play.

I desire to lay special stress upon the fact that indulgence by athletes in alcohol and tobacco is especially dangerous. In the first place, the effect of these stimulants upon the nervous system is to incite the subject to overexertion, and, in the second, it is well to remember that even the strongest heart and muscular system are likely to develop pathologic changes under the combined influence of a severe athletic regimen, alcohol and tobacco. Even slight indulgence should be tabooed. A single cigar or a glass of wine may determine the question of success or failure in contests when either strength or skill, or both, are demanded.

Competitive athletics as ordinarily understood should, in my estimation, be tabooed, for it is in that direction that the greatest danger of overstrain lies. Athletics for health, and with the idea of attaining the standard of perfection natural to the given subject, are perfectly safe and rational. Athletic training for prowess only is senseless as well as dangerous.

I am well aware that the desire for supremacy in athletics rises superior to all physiologic objections to competitive athletic contests. The whole story is most beautifully told by Barry Pain in his "Glass of Supreme Moments." There is infinite pathos in the picture of Lucas Morne, dying from heart strain after a closely-contested boat race. Death gives him at the last various glimpses in the "Glass of Supreme Moments," in which are depicted the periods of greatest ecstasy in the lives of his friends, including that of the athlete who had barely beaten him in what proved to be his death struggle. The supreme moment of his competitor's life was the desperate finish of the race in which he had beaten Morne.

Realizing the difficulties of the task, I still believe that the physician who approaches the subject with an intelligent grasp of the situation may do much to repress, or at least modify, the train of evils that follow in the wake of competitive athletics. Despite all that can be said against such athletics, they will doubtless continue to be popular so long as the innate savagery of man is enabled through circumstances of environment to struggle to the surface. The demand for competitive athletics of various kinds is largely the instinctive cry of the human animal for a "kill" of some kind.

It is not my intention to discuss exhaustively the favorable or unfavorable conditions under which competitive athletics may be practised. I will, however, incidentally say a word of warning against the prevalent idea that an athlete may continue capable of doing his best work until middle life, or past it. It must be remembered that "a man is as old as his arteries." This aphorism is especially pertinent as applied to the athlete. It is well to remember that the athlete's arteries are, with certain brilliant exceptions, older than those of the average healthy man. As has already been indicated, his muscular power may be at its maximum, although his resistancy and recuperative capacity and visceral integrity may fall far behind it in degree. The man who gets a great deal out of himself physically before the age of 30 is bound to "go back" after that period. Mr. Edward Hanlon, the famous oarsman, never said a truer word than when he stated that, in his opinion, no man should train for or enter competitive athletics after the age of 30. Such men as Sullivan and Fitzsimmons are notable exceptions, perhaps, yet each of these men is something of a physical freak. So far as both of these men are concerned, the pathetic story of their downfall merely emphasizes the truth of the foregoing statement. Who that has watched the career of some of our phenomenal athletes will not agree that with them the pitcher usually goes to the well once too often? The man who attains supremacy on borrowed energy—energy borrowed from his physiologic bank—is called upon to pay his notes sooner or later. He cannot do so and goes into physiologic bankruptcy.

SPECIAL ARTICLES

THE ILL HEALTH OF HERBERT SPENCER.

BY

GEORGE M. GOULD, M.D.,

of Philadelphia.

The following citations concerning the health of Herbert Spencer are from the article by Iles in the *World's Work* for February, 1903:

Spencer was born April 27, 1820.

A contributor to the *Leader*, writing of Spencer, at about the age of 30, says:

"Despite his vigorous look, he had even then misgivings about his health."

He had, as a young man, a strong bass voice of good timbre, and used to sing in part music until ill health forbade the exertion.

When he began the composition of "First Principles" in 1860, he adopted the practice of dictating to an amanuensis. He was spending the summer by the shore of a Scottish loch. His habit was to dictate for a quarter of an hour, then row for an equal period with the object of so stimulating the circulation of the blood as to carry him through another 15 minutes' dictation, and so on throughout the forenoon. Neither then nor afterward did he work in the afternoon.

Ten years later, at times when his health fell to a low ebb, he would go to a racket court in the north of London, play with the man in charge, and dictate in the intervals of the game. One of the most abstruse portions of his *Psychology*, the *Argument for Transfigured Realism*, was composed under these unpromising circumstances. His usual program as he wrote the volumes of the "Synthetic Philosophy" was to leave his house soon after 9 in the morning, and direct his steps to Kensington Gardens. There he walked until nearly 10 o'clock, his head slightly bent, his pace somewhat rapid, his mind evidently in meditation.

Ever since [1855] he has been a sufferer from insomnia, and for 18 months after the completion of his book [the *Psychology*] he could do nothing. Then in his impatience he one day resumed work, to discover, as George Sand and others in like case had done, that his strength gradually came back to him. He slowly regained vigor enough to accomplish a large amount of toil, but never with perfect security; it was always touch and go with him. At such times he threw up his work and hurried away to his native Derby, or to Brighton or Tunbridge Wells. There he went about killing time as best he could, feeling thoroughly bored and miserable. In three or four weeks he would return, apparently restored, and without an effort take up his work at the point where he had dropped it; in a moment the bow of Ulysses was bent as easily as ever. As time went on these relapses grew less frequent, and at the end of 15 years' work on the "Synthetic Philosophy" he found himself, in 1875, in much better health than when he began. In 1897 he underwent a serious collapse, followed two years later by a marvelous restoration, attributed to the use of meat cooked in a particular way. This rejuvenescence disposes him to believe that nervous troubles may be assuaged with advancing years.

He often went to the theaters and the opera, usually in company with friends. He set much store by his annual outing in Perthshire or Argyshire, where he fished for salmon with the thoroughness which went into everything that he did. His flies were always of his own design. Indoors, when in London, to get through the long, dull evenings when he had no engagements, he played whist at first and then billiards, at which his game was steady rather than brilliant. He often dined out, less from choice than for distraction from toil.

The magazine article of Iles has a full-page portrait of Spencer reading without spectacles, and entitled, "He reads without glasses at eighty-one." It has the stiff, retracted appearance of presbyopes reading within the easy limit of their near-point.

When Spencer visited America in 1882 his address to his friends at Delmonico's was a chapter from his gospel of relaxation and rest. This was drawn from personal experience. In early life he was told by his physician that his health would never improve while he worked so hard and lived alone in lodgings. From the sixties onward . . . his recreations became varied and of inestimable benefit. When lawn tennis was revived he took it up eagerly; he was always ready to join a picnic or excursion, when he was as active and sportful as the youngest.

He first dictated his correspondence, often rebelling at its onerous demands. Then he turned to his systematic work, soon rising to the full tide of dictation; usually he went on without a break till close on 1 o'clock, when he hurried away to luncheon. If his health was out of order he would stop abruptly at any moment and leave the house, saying that his head felt queer. When fairly well he would smoke half a cigar, finding that it promoted the flow of thought.

Considering the difficulty of his subjects, the solidity of the

matter and his finish of style and treatment, his rate of composition was not slow. On good mornings he would produce 1,000 words. This was reduced by the time occupied in revision, the arrangement of materials and relapses into ill health to a daily average for the year of 330 words. In 1879, when he was recovering from a serious illness, sitting under the trees of Kensington Gardens, he dictated his autobiography to an amanuensis.

Spencer has never been much of a reader; he was wont to say that if he were to read as much as other people he would know as little as they. He has never bought many books, nor borrowed from circulating libraries or other sources, and yet he has managed to accumulate enormous stores of knowledge. He read but little in the forenoon, and he dared not read at all in the evening through dread of insomnia, but for all that he seemed to miss nothing in print that bore on his work. Almost all his reading must have taken place at odd moments, just after breakfast, after luncheon, and in the afternoons regularly passed at the Athenæum Club. A little time went a long way with him—five minutes over an article, half an hour over a book, availed him as much as half an hour or half a day to another man. Much was communicated to him by friends of eminence in science, etc.

Naturally of a robust build, he preserved his bodily vigor till past 60; it was in 1884 that he became unable to take his accustomed long walks. In that year he began to drive to the Athenæum Club in the afternoons.

So far as we may draw conclusions from the interesting but, medically speaking, extremely vague suggestions of Mr. Iles, it is at once evident that the symptoms, and their causes, in Mr. Spencer's case are not essentially unlike those of the five already¹ studied. When published, the autobiography may bring more definiteness of detail, and could the case records of his physicians, if he has consulted any, be added, there would be still more certainty elicited in the diagnosis. Of especial service would be the report of the refraction and muscle-balance of his eyes, if such data could be obtained. The early "misgivings about his health," the ill health as a young man that interdicted the exertion of singing—of these we should like details. Unlike all the others Spencer early learned the wisdom of dictating to an amanuensis, and of breaking up his periods of literary work by alternations of rest, exercise, or amusement. These periods of work were sometimes so short in duration as 15 minutes. The intellectual labor itself, of course, could not and did not tire in so short a time. Like all the men whose clinical biographies I have studied,² Spencer used up his ability to do literary work in the few morning hours, and could not carry it on afternoons. He did not use his eyes in such labor evenings because if he did so he was afflicted with insomnia. There was the same necessity as in the others of "killing time," and of being "bored and miserable" in doing so. Only late in life was he unable to take the "long walks" which had been his necessary and saving custom during his life. These long walks, as in the other cases, demonstrate that no organic disease existed, and his 83 years, still well borne, is another proof that the lifelong "nervous troubles" were of a clearly functional nature, that the "always touch and go with him" was dependent upon a temporary, slight, subtle, and easily overlooked cause. In a few minutes "his head felt queer," with near use of the eyes, is one of the most definite hints Mr. Iles gives us, and almost all patients with severe eyestrain make the same complaint.

That Spencer has not been so great a sufferer as De Quincey, Carlyle, and the others mentioned, seems due to several wise habits early formed and always carried out during his life: 1. He dictated all his works. (It should not be forgotten that even in his dictation there was probably use of the eyes at near range, in the consultations of notes, references, etc. An average of 330 words a day is a very small result so far as amount of product is concerned.) 2. He availed himself of the literary labor of assistants hired for the purpose, or given by friends. 3. He learned, as few literary workers do, to gather his data from the books, etc., which he consulted, with a fraction of the ocular labor that is required by others. 4. He read little, and, plainly, not at all works of a light or popular nature. 5. He practised the art of rest and relaxation when he became "nervous" and "his head felt queer," even if 15 minutes' labor brought on these symptoms. Mr. Spencer's "rejuvenescence" in old age, and his belief that "nervous troubles may be assuaged with

¹ De Quincey, Darwin, Huxley, Carlyle, and Browning.

² See *Biographic Clinics*, P. Blakiston's Son & Co., 1903.

advancing years," are but the philosophy of the presbyope who has never heard of the relief that always comes to the eye-strain patient when accommodation effort has become impossible, or when presbyopia has been fully established.

In 1882 Mr. Youmans said of his friend, Mr. Spencer, that he broke down completely from overwork in 1855, and that since then he had not had a night of sound, refreshing sleep. "A victim of overwork" is another expression of Mr. Youmans. Again he says of him in 1882, "The distress of his life for 20 years has been insomnia." At this time Mr. Spencer was 62 years of age, and hence the beginning of this period of great sleeplessness began when he was about 42 years of age—precisely at the beginning of the presbyopic failure, when eye-strain is greatly increased. In 1855 Mr. Spencer was 35 years of age, at which time Youmans says he broke down from overwork. How much of a "victim of overwork" Mr. Spencer was at 35 and 42 appears plainly in Mr. Iles' article. His speech at Delmonico's was in reproof of our American overworking, and in praise of his own lifelong devotion to the doctrine and art of "rest and relaxation." Of all literary men that ever lived, Mr. Spencer was least accurately described as one who overworked. The explanation of Mr. Youmans is an echo of the old error that when the health of an intellectual man or writer fails, it is because of "overwork." The cerebral function of a philosophic or literary man is not more exhausting than that of a business man, engineer, or physician. Then there are millions of people in our strenuous world who "overwork" without insomnia or breaking down, and who work five or ten times as much as Spencer ever did. But they do not have compound myopic astigmatism, and they cannot "read without spectacles at the age of 81." Insomnia, neurasthenia, and breakdown are common results of eyestrain.

That Mr. Spencer is able to read without spectacles at his advanced age is a perfect proof that he is, and has been, myopic. There is nothing in the fact to be proud of, but rather to be sorry for. Such patients, if they have not suffered thereby from nervous or digestive disorders, have at least denied themselves one of the greatest pleasures in life, that of seeing the world. They do not know how anything a few feet away looks to normal eyes. But the two myopic eyes of a person are not once in a thousand instances alike in their refraction, nor are they without astigmatism. The symptoms from which Mr. Spencer has suffered, at least from early manhood, show that he has always had compound myopic astigmatism, probably anisometropic. There are thousands, even millions, of literary workers, bookkeepers, seamstresses, clerks, students, and professional persons, who are able to work for ten or more hours a day at near-range ocular labor without "queer feelings in the head," "nervousness," headache, insomnia, or digestive troubles. There are other thousands who are able to do so only by the use of spectacles or eyeglasses correcting the "error of refraction" of their eyes. Without such lenses they have some or many of the symptoms complained of by DeQuincey, Carlyle, Darwin, Huxley, Browning, and Spencer. Mr. Spencer has been compelled to adopt the devices described by Mr. Iles in order to obviate, poorly and temporarily, the cerebral and nervous disorders following the use of his eyes even for a few minutes. At any time during his life lenses properly correcting his ametropia would, I think, have enabled him to avoid wasting his superb intellect in boredom and "killing time," and would have permitted him an ability to read and work, as well as a freedom from nervous troubles, which would have been to himself the source of the greatest satisfaction, and wherefrom the world would have enormously profited.

Sea Air in the Treatment of Tuberculosis.—It is asserted that several physicians and a number of associations in Berlin will test the value of sea air on a number of patients suffering from tuberculosis. As ordinary steamers, owing to the noise, unpleasant smells, and want of proper accommodation, are unsuitable, it is proposed to build a large floating sanatorium, with roomy, open-air wards, medical supervision, and a complete equipment for scientifically testing the effects of the sea air. The cruising ground is to be the northeastern Atlantic, in the neighborhood of the Canary Islands. Should success attend the effort, further floating sanatoriums will be built. The voyages will last about six weeks.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

February 28, 1903. [Vol. XL, No. 9.]

1. The Improvement of General Anesthesia on the Basis of Schleich's Principles: With Special Reference to Anesthol. WILLY MEYER.
2. Some Notes on Aural Vertigo. B. ALEX. RANDALL.
3. Transillumination of the Nasal Accessory Sinuses During Acute Coryza. CAROLUS M. COBB.
4. An Unusual Case of Nasal Syphilis in a Child and a Consideration of Syphilitic Nasal Tumors (Syphilomata). CLEMENT F. THEISEN.
5. Perforation of the Normal Intestine by an Ascaris Lumbricoides. LOUIS C. AGER.
6. The Clinical Application of Some Thyroid Gland Experiments. L. BREISACHER.
7. The Chest-pantograph: Its Physiologic Significance and Its Clinical Application. WINFIELD S. HALL.
8. Nerve Nostrums and Their Dangers. WILLIAM P. SPATTLING.
9. Hypnotics, Analgesics and Resultant Drug Addictions. SMITH ELY JELLIFFE.
10. A Further Study of the Influenza Bacillus. F. ELDREDGE WYNEKOOP.
11. The Fly as a Carrier of Typhoid: An Inquiry Into the Part Played by the Common House Fly in the Recent Epidemic of Typhoid Fever in Chicago. ALICE HAMILTON.
12. Pneumonia: The New "Captain of the Men of Death." Its Increasing Prevalence and the Necessity of Methods for Its Restriction. ARTHUR R. REYNOLDS.

2, 3, 4.—See *American Medicine*, Vol. III, No. 25, p. 1059.

5, 7.—See *American Medicine*, Vol. III, No. 25, p. 1062.

6.—**The Clinical Application of Some Thyroid Gland Experiments.**—Breisacher briefly refers to his experiments in keeping dogs on a diet of milk or milk and eggs for a number of days before extirpation of the thyroid gland, and noting the subsequent influence of a milk, egg, boiled and raw meat and beef broth diet; 30% of those fed on milk or boiled meat remained entirely healthy, but died when put on raw meat or beef broth. All animals fed on raw meat from the beginning succumbed to the operation. These experiments have resulted abroad in the recommendation of a milk and vegetable diet in myxedema, cachexia strumipriva, and Basedow's disease. American clinicians, however, have paid little attention to the question of diet in these troubles. [H.M.]

8, 9.—See *American Medicine*, Vol. III, No. 25, p. 1061.

10.—**The Influenza Bacillus.**—Wynkoop calls attention to some atypical manifestations of this bacillus. During the past five years hundreds of cultures made from inflamed throat and nasal mucous membranes, eyes, etc., have been examined, and many local disorders found dependent on the influenza bacillus and not in pyogenic bacteria. Laryngitis, pharyngitis, and tonsillitis and apparent diphtheria are among these. The conjunctivitis caused is characterized by suddenness of onset, rapidity of development, and shortness of duration. The severer cases suggest blenorhea or conjunctival diphtheria. The symptoms disappear quickly under antiseptic treatment. [H.M.]

11.—**The Fly as a Carrier of Typhoid.**—Hamilton describes Chicago's water supply and sewage conditions, presenting maps and diagrams showing the distribution of the disease. She also reports the bacteriologic studies made in relation to the agency of flies. The concentration of the epidemic in the Nineteenth Ward from July to October, 1902, can not be explained by contamination of drinking water, or of food, or on the ground of ignorance and poverty of the inhabitants, for this ward does not differ in this respect from several other parts of the city. The sewers are too small, only 48% of the houses have sanitary plumbing, 7% of the remainder have defective plumbing, 22% water-closets with intermittent water supply, 11% have privies connected with the sewer but without water supply, and 12% have privies with no sewer connection. The streets in which the sanitary arrangements are worst had the largest number of cases. Flies caught in two undrained privies, on the fences of two yards, on the walls of two houses, and in the room of a typhoid patient were used to inoculate 18 tubes, and from five of these the typhoid bacillus was isolated. [H.M.]

12.—**Pneumonia: "Captain of the Men of Death."**—Reynolds gives many statistics showing its greatly increasing prevalence and reviews the suggestions of other writers in regard to individual prophylaxis and the placing of it on the list of notifiable diseases in regard to the importance of clean

streets and of thorough ventilation of places of public assembly and dwelling houses. Every precaution used in a case of diphtheria should be employed in a pneumonia case. [H.M.]

Boston Medical and Surgical Journal.

February 26, 1903. [Vol. CXLVIII, No. 9.]

1. A Few Remarks on Blood-pressure. JAMES MARSH JACKSON.
2. Intestinal Obstruction Below the Ileocecal Junction. THOMAS H. MANLEY.
3. The Treatment of Hemorrhoids. JOHN O'CONNOR.
4. The Use of Cargile Membrane in the Nose in Order to Prevent Adhesions. HARRIS PEYTON MOSHER.
5. Gonorrhoeal Urethritis Without Symptoms. ARTHUR L. CHUTE.

1.—**Blood-pressure.**—Jackson has experimented for three years with Gaertner's machine and believes it sufficiently accurate for all practical purposes. In arteriosclerosis the readings of the latter were higher, the brachials being more affected by the disease than the smaller vessels of the finger, and he believes the Gaertner machine was nearer right. All records of blood-pressure should be accompanied by the name of the instrument used. He has found exophthalmic goiter cases (women) with a pressure of 120 to 160 not diminishing on improvement in symptoms. In five out of six cases of chronic nephritis with decapsulation of both kidneys there was rise of pressure even with marked improvement. In one the pressure rose from 125 at the time of operation to 210 at the end of two weeks. Pressure in a young healthy man ranges from 106 mm. to 130 mm. of mercury, but it is frequently as high as 150 in the perfectly sound. In young women it ranges from 90 to 110. Elderly persons have an elevated pressure due to arterial changes, and one should not be disturbed if it reaches 175. Low pressures are uncommon except in shock and collapse. Pressures of 200 are dangerous, of 250 very dangerous. He records that five patients in one year with pressures over 190 died of apoplexy. As an aid in diagnosis blood-pressure is fast taking an important place. [H.M.]

3.—**Treatment of Hemorrhoids.**—John O'Connor, of Beunos Ayres, gives his results in 150 operations for hemorrhoids, after Whitehead's method. In the whole series of cases there was no fatality. Five patients suffered from some after-contraction at the seat of operation, and six were annoyed by a "weeping bottom" as a sequel to operation. The latter result and the contractions occurred in his early cases, and are attributed by him to encroachment upon the skin-margin of the anus. He now never allows his circular incision to come nearer than one-sixth of an inch to the skin-margin. The average time consumed in the last 26 operations was 12½ minutes. The pile-bearing area being removed, the upper cut end of the mucous membrane tube is brought down and sutured to the lower cut margin by a continuous catgut suture loosely applied, all hemorrhage having previously been carefully controlled. Mr. Jacobson, in "The Operations of Surgery," devotes half a page to a criticism of the Whitehead operation. For this he is censured by the writer. A terse, unique description of the operation is given which should be read in the original. He condemns the usual practice of "stretching the sphincter." [A.B.C.]

4.—**Cargile Membrane to Prevent Adhesions in the Nose.**—Mosher has tried cargile membrane in operations within the nasal cavity to prevent postoperative adhesions. His results have been satisfactory. It here cannot be used in one flat layer as within the abdomen, but it is rolled or folded together and wedged between the opposing denuded surfaces. He has used it on turbinates after cauterizing, and on raw surfaces after the removal of spurs. It is considered appropriate for the following additional conditions also: On the septum after operation for the correction of deflection; a sleeve for a packing which has to be left in the nose some time; to hold down flaps of mucous membrane after the submucous dissection of cartilaginous spurs; as a guide and stimulant to the growth of epithelium to prevent the formation of a perforation, and in order to help toward the closure of perforations after refreshing their edges; and as a dressing for the cartilage of the septum whenever it is found to be exposed. [A.B.C.]

5.—**Gonorrhoeal Urethritis Without Symptoms.**—Chute

reports the case of a student who two years before the present trouble had chancroids. He knew of no other venereal trouble. He had had numerous exposures but was wholly unaware of any trouble until there was an onset of unilateral epididymitis. About this time a rash appeared on the body. The other epididymus was soon involved. There were no urethral symptoms for several days, when a slight discharge appeared. The finding of scales accounted for the rash, which disappeared after the use of sulfur ointment. Stained secretion from the urethra showed gonococci. The combination of symptoms as above recited had led another physician to make a diagnosis of syphilis. Another case, that of a youth of 18, is recited. Sixteen days after exposure and without any previous symptoms whatever he suffered from retention of urine. This was relieved and the prostate was found swollen, painful and tender. Expressed secretions showed the presence of gonococci. The author questions whether some strictures and other unaccounted for complications may not arise from an unrecognized attack of gonorrhoea. [A.B.C.]

Medical Record.

February 28, 1903. [Vol. 63, No. 9.]

1. Remarks on Achylia Gastrica and Pernicious Anemia. MAX EINHORN.
2. Recent Researches on the Voice. E. W. SCRIPTURE.
3. Doctrine of Survivorship in Case of Two or More Deaths in a Common Disaster. THEODORE SUTRO.
4. The Etiology and Prevention of Senile Cataract. J. WILKINSON JERVEY.

1.—**Achylia Gastrica and Pernicious Anemia.**—Einhorn reports three new cases of achylia gastrica in which there was return to normal secretory activity and others in which there was abrupt development of achylia gastrica in pronounced hyperchlorhydria with return to normal secretion after the achylia had persisted for years. These cases cannot be compared with nervous dyspepsia in which a varying condition of secretion is present. In cases of carcinoma with achylia it is difficult to decide whether the cancer causes the achylia or not. Cases in which diagnosis of cancer is difficult are rare. He describes the clinical and pathologic findings in cases of pernicious anemia, his own observations speaking against the assumption that it is caused by atrophy of the stomach. In most cases of achylia gastrica a nearly normal condition of the blood is found. In one case in which total atrophy of the mucous membrane was found pernicious anemia did not exist during life. We occasionally observe gastric juice in pernicious anemia, sometimes even in increased amount. The two diseases sometimes occur together. These cases are, however, in the minority. [H.M.]

4.—**Etiology and Prevention of Senile Cataract.**—A case with paralysis of the sphincter papillæ and a clear lens on one side, with a normal iris and cataractous lens on the other side, has suggested to Jervey that senile cataract is caused by irritation of the capsule from the movements of an iris stiffened and roughened by the nutritional changes common in old age, and due to arteriosclerosis, rheumatism, gout, Bright's disease, diabetes, etc. Efforts to prove the development of permanent cataract by extraction or imbibition of water or abnormal ocular solutions have terminated unsatisfactorily. There is much evidence to support Schoen's views that all simple and senile cataracts commence as capsulitis. The effect of trituration of the lens capsule for the hastening of cataract falls in with this theory. The impossibility of obtaining full dilation in the majority of cases is accounted for by the thickening or stiffening of the iridian fibers, and not by atrophic conditions. By interrupting the iris and preventing its activity in cases in which opacification is beginning, the process may be arrested. Mydriatics would be necessary in younger persons, but in the senile are superfluous. Jervey advises the making of a minute nick in the pupillary border sufficient to break the continuity of the sphincter. This will result in partial dilation and cessation of hippus. If continued use of a weak atropin solution seems to assist in control of iridian movements, there is no objection to its use. Constitutional treatment and proper glasses are also important. The measures indicated must be used early. [H.M.]

New York Medical Journal.

February 21, 1903. [VOL. LXXVII, No. 8.]

1. A Critical Review of Some of the Recent Literature of Tuberculosis. (Second Paper.) JONATHAN WRIGHT.
2. Pulmonary Anesthesia. W. A. BRYAN.
3. A Case of Intussusception in a Baby Five Months Old. LOUIS FISCHER.
4. Pyemia and Exsection of Part of the Lower Jaw Following a Fracture Due to Tooth Extraction. J. A. HOFHEIMER.
5. The Prophylaxis of Appendicitis. H. ILLOWAY.

1.—Recent Literature of Tuberculosis.—Wright has made a critical review of some of the recent literature of tuberculosis. Koch, in a recent article, unsparingly reviews the vulnerable evidence, entirely circumstantial, of the actual transmission of bovine tuberculosis to man. He regards the fact not only as unproved, but as highly improbable. By his observations on dust in air currents drawn through moistened tubes, Saenger concludes that dust particles floating in the inspired air cannot penetrate very far into the bronchioles. Still further experiments lead him to assert that it is impossible that tubercle bacilli floating in the inspiratory air current should penetrate with this into the pulmonary alveoli. The author conceives that the tubercle bacillus is carried to the alveolar regions of the lungs only by blood or lymph vessels into which they enter either directly through the surface epithelium of the upper air tract or from lymph nodes and other foci of infection or lodgment. As to experiments with the inoculation of animals with human tubercle bacilli, the tendency in the very numerous articles which are appearing is to deny the absolute insusceptibility of animals to large doses, but at the same time to support the essential claims of Koch. As experimental observations multiply and are more carefully controlled, they are coming to be more in accord with clinical experience. The author calls attention to Massei's paper on tracheal hemorrhage, and to the observations of Donelan, and says it is possible that many so-called cases of early tuberculosis have been merely recoveries from tracheal hemorrhage occurring as a sequel of influenza. He is not in favor of artificial abortion in cases of tuberculous laryngitis complicated by pregnancy. He believes pregnancy more frequently retards than hastens the march of tuberculosis in women. The author refers to the statistics of Mircoli as quoted by Bronstein and Fränkel, covering 2,897 cases treated by serum therapy. Out of 250 cases of limited apyretic tuberculosis 95 were cured, 110 improved, 30 remained stationary, and in 15 the process ran its course. Of 932 phthisical patients with fever with circumscribed tuberculosis 168 were cured, 511 improved, 163 stationary, and 98 who grew worse. Bronchopneumonia without mixed infection: out of 655 patients there were 192 cured and 301 improved. The same complicated by the invasion of other bacteria, 332 cases, among which 31 were cured, 142 improved, 61 grew worse, and 98 remained stationary. Of 712 cases of bronchopneumonia with cavities, 281 improved, 290 grew worse, and the others remained without change. [C.A.O.]

2.—Pulmonary Anesthesia.—Bryan presents some useful facts concerning the administration of anesthetics, the action of patients under their influence, the signs that are of value to the anesthetist, and the means to be used in emergencies that may arise during anesthesia. The author also gives a report of some recent work with ethyl chlorid, which has been very satisfactory. [C.A.O.]

3.—Intussusception.—Fischer reports a case in a baby of 5 months. The most marked symptoms were pain, continued vomiting, abnormal distention of the abdomen, tympany and fecal impaction, the gut being so obstructed that no feces passed for more than ten days. There was absence of all inflammatory symptoms, such as rise of temperature, until two days before the death of the patient, when temperature rose to 101° F. and the pulse to 160. During the first two or three days not only was clear blood passed by the rectum, but large masses of jelly-like mucus, tinged with blood, were frequently expelled from the rectum until the end. The mass of gut could be felt in the rectum about 2½ inches from the anus, and a catheter could be passed outside the intussusception as well as inside it some 14 inches, without reaching the limit of the invagination. Operation was refused and the child died. [C.A.O.]

4.—Pyemia Following Tooth Extraction.—A case is

reported in detail by Hofheimer of a boy aged 9, whose lower jaw was fractured by a dentist while extracting a tooth. General pyemic infection with multiple abscesses followed. Several operations were necessary to drain these abscesses. A gradually increasing necrosis of the lower jaw posteriorly to the point of fracture also appeared, necessitating the removal of the ascending ramus; this was done by the intrabuccal method, thus avoiding a large, unseemly cicatrix on the face, and leaving but a slight deformity. [C.A.O.]

5.—The prophylaxis of appendicitis is discussed by Illoway. He holds that this disease is in the majority of instances provoked by constipation, either temporary or habitual, and that by removing this condition we will greatly obviate the risk of appendicitis. In constipation the residual matter accumulates in the cecum and distends it; the orifice leading into the appendix is thereby opened. Feces can now pass into this part, or rather are driven into it. Complete return into the cecum is prevented by fecal matter in the cecum. Bacteria enter and give rise to an inflammatory process, or concretions may form. To illustrate this point, cases are reported in which appendicitis has been cured by relieving the constipation. [C.A.O.]

Medical News.

February 23, 1903. [Vol. 82, No. 9.]

1. A New Use for Thyroid Extract: A Cure, or at Least a Complete Control of Hemophilia Through Its Administration: Its Effect also on Another Form of Hemorrhage. EUGENE FULLER.
2. Cortical Hemianopsia and Sector Defects of the Visual Field. EDWARD JACKSON.
3. Ossiculectomy. EDWARD B. DENCH.
4. The Discrepancy Between Clinical Manifestations and Pathological Findings in Appendicitis. NATHAN JACOBSON.
5. The Treatment of Typhoid Fever. G. WYTHE COOK.
6. Aseptic Surgery on the Niger Delta. FREDERIC GRIFFITH.
7. Remarks Upon Adherent Pericardium. GEO. MONTAGUE SWIFT.
8. Hyoscin in the Treatment of Morphinism: Its Office and Value. GEORGE E. PETTEY.
9. The Scope of Vaginal Section. EGBERT H. GRANDIN.

1.—Thyroid Extract in Hemophilia.—Fuller reports that a Hebrew youth of 15, four of whose uncles and two of whose brothers had died from hemorrhage, a result of circumcision, was brought to him suffering from constant hematuria and swollen joints. The boy was much emaciated and anemic. The usual styptics afforded no relief, and it seemed death was imminent. As an experiment 5-grain doses of thyroid extract were given three times daily. After only a few doses the hemorrhage ceased, and within two weeks the swelling of the joints had subsided. Nine months after the initial treatment there had been no return of the hematuria, the boy had gained much in weight, and his health was better than ever before. Another was the case of a man of 55 who had been under treatment for nephritis for a year, the usual symptoms being present. Two months before the writer saw him he began suffering from hematuria, which persisted. Examination showed the hemorrhage came from the prostate. Perineal cystotomy and drainage failed to relieve the condition. Again 5-grain doses of thyroid extract given three times daily controlled the hemorrhage completely, though of course the nephritis persisted. The writer hopes the drug will be given a trial in other cases of hemophilia. [A.N.C.]

2.—Cortical Hemianopsia and Sector Defects of the Visual Field.—According to Jackson sector defects occur almost as frequently as complete lateral hemianopsia, generally remaining an enigma to the patient and too often to the physician also. In half-blindness the straight line of demarcation often shown in charts does not exist. The finding of irregularities in this line does not negative the idea of a hemianopic lesion, but supports it. An absolutely straight border may be taken as evidence of malingering. The significant thing is that in the two eyes the indentations and extensions of the blind area correspond to each other sufficiently to identify portions of the retina having connection with the same part of the visual center. Almost invariably the seeing field encroaches on the blind part at the region of the fixation point. The writer reports cases interesting from the definiteness of the lesions involving the visual cortex in the occipital lobe, giving additional support to the view that the upper portion of the cortex has to do with the lower parts of the fields. He also shows charts in

which the contraction of the field in tabetic atrophy and a sector defect in detachment of the retina simulate hemianopsia. While the part played by hemianopsia in the diagnosis of a given case is most frequently that of a localizing symptom, its recognition may throw the first light as to the real cause of obscure cerebral symptoms. [H.M.]

3.—Ossiculectomy.—Dench says this operation is indicated in three classes of cases: (1) chronic nonsuppurative otitis media, with intact membrana tympani, operation for improvement of function or relief of subjective noises, vertigo, etc.; (2) chronic suppurative otitis media; and (3) previous suppurative process which has resulted in the ossicular chain being bound down by adhesions with impairment of function. An exhaustive and highly instructive paper deals with these various conditions, the treatment indicated, together with descriptions of operations. Of 88 cases of chronic nonsuppurative otitis operated upon for the improvement of function, 76 were improved, 10 were unimproved, 1 grew worse after the operation, and in 1 the result was unknown. Of 92 cases operated upon for the relief of suppuration, 53 were cured, 25 improved, 2 unimproved, and in 12 the result was unknown. In most of the cases the hearing was improved, and in no instance was the hearing made worse. In 9 residual purulent cases, in which the 2 larger ossicles were removed for the improvement of hearing, 7 have been improved, 1 unimproved, and 1 case is still under treatment. Most of the cases of this character were operated upon by synechiotomy of the stapes. [A.B.C.]

4.—Discrepancy Between Clinical Manifestations and Pathologic Findings in Appendicitis.—Jacobson, of Syracuse, recites a number of cases illustrative of the paper's title. He then sums up the points he wishes to make emphatic: We must not depend too much upon finding the so-called classic symptoms of the disease; we are not to be misled by apparently mild constitutional manifestations; local signs are to be regarded as more significant, and can be relied upon to a greater degree than can constitutional manifestations; the persistence and the aggravation of any manifestation is to be viewed with alarm, and strongly suggests progression of the disease; the diagnosis of catarrhal appendicitis, because of the apparently mild symptoms presented, is often unwarranted; true conservatism, if by that we mean the conservation of life, is along surgical and not medical lines in every case of progressing appendicitis. Every case in which the diagnosis of appendicitis can with positiveness be made, demands surgical rather than medical care. [A.B.C.]

6.—Aseptic Surgery in the Niger Delta.—F. Griffith reports that a native was attacked with a machete and wounded as follows: Amputations of both cheeks; lacerations of scalp and forehead; shattering of the left shoulder, requiring an excision of the outer half of the clavicle to be made; incised wounds of both hands, flapping the palms; and penetrating, incised wounds of the abdomen, allowing the protrusion of intestines enough to fill a pint measure. Happening in the bush, this patient walked 10 miles before reaching assistance, and had completely recovered at the end of six weeks' time. The wounded condition of a woman is described, the weapon being the same. Wounds consisted of gashes of the hands, severed and shattered clavicle, slashes in the abdomen which opened the peritoneal cavity. The woman, a native, walked 10 miles to find medical aid. Appropriate treatment resulted in complete recovery. [A.B.C.]

7.—Adherent Pericardium.—Swift has found adherent pericardium a not unusual condition. The points for diagnosis are the great irregularity of heart action, the patient not appearing correspondingly ill; the indraw of the intercostal spaces with systole, the marked dyspnea and consequent apprehension, the great enlargement of the liver with or without ascites. In hospital cases the prognosis has been invariably bad. It may be good if the patient can have an abundance of nitrogenous food to supply the extraordinary heart demands, especially great in a growing child; and if the adhesions which have formed do not pinch too closely the nutritive vessels, inducing atrophy; and if one can arrest the rheumatic condition. [H.M.]

8.—Hyoscin in Morphinism.—Petty replies to the con-

demnation of the use of hyoscin by Crothers and Mathison. The effects of hyoscin are very little, if any, more lasting than those of other narcotics. Delirium, delusions, etc., from its use are of short duration. Instead of hyoscin and bromids causing dementia, each of these remedies has made a greater reputation in the treatment of insanity than any other two in the materia medica. After the use of hyoscin in morphinism the perfect recovery of all the mental faculties has been one of the most uniform and striking features. It not only occupies, but fills, when properly used, as important a place in the treatment of morphinism as does chloroform or ether in the practice of surgery. [H.M.]

9.—The Scope of Vaginal Section.—Grandin thinks that although experience may yield the deftness which will enable one to operate on any intrapelvic and many intraabdominal conditions through vaginal section, yet far too frequently these attempts at surgical legerdemain result in incomplete and faulty work and prolonged anesthesia with immediate or remote effect on kidney, heart, and lungs. These considerations outweigh the charges brought against the man who prefers to do his work through the abdominal incision, whereby not alone touch, but also sight, assists him in rapid work, in knowing work, and in complete work. The vaginal incision commends itself for diagnosis and for palliative treatment. It may also be used for curative purposes in certain conditions. As regards tumors, it may be used for their removal when they can enter the pelvic brim. If they cannot enter this brim, although it is possible to drag down and cut out gradually, this he calls not surgery but butchery, and they should be ruled out from the scope of vaginal section. The same remark applies to tumors surrounded by adhesions or complicated by pyosalpinx or ovarian abscesses. These conditions may alone be treated from above. Diseased appendages when readily accessible and only slightly adherent may be removed by vaginal section. In Grandin's view the symptomatology of uncomplicated uterine displacement is dependent on the amount of downward sagging of the organ, and not on the mere version, hence these cases do not fall within the scope of vaginal incision. The uterus must be drawn up and held up, and not merely fastened anteriorly to the vagina. The shortening of the round ligaments also can best be done by abdominal incision. [W.K.]

Philadelphia Medical Journal.

February 28, 1903. [Vol. XI, No. 9.]

1. Tropical Diseases: Sixth Lecture in a Course on Tropical Diseases, etc.; Abscess of the Liver. CHAS. F. KIEFFER.
2. Diseases of the Biliary Tracts. JOHN B. DEEVER.
3. Rupture of the Urethra; Pyosalpinx; Excision of Tumors of the Neck. THOMAS H. MANLEY.
4. Is Nephroptosis Hereditary? JOHN G. SHELDON.
5. A Case of Trigeminal Neuralgia Complicating Typhoid Fever. CHARLES J. ALDRICH.
6. The Toxemia of Pregnancy. WILLIAM H. WELLS.

1.—Tropical Diseases.—Kieffer discusses the treatment of abscess of the liver. In the treatment of this disease prophylaxis plays a very important role, the most important step of which is the prompt and energetic treatment of the amebic dysentery. At a recent meeting of the Egyptian Medical Congress, Kartoulis advocated the routine treatment of amebic dysentery with abundant lavage, twice daily, with a 0.5% aqueous solution of tannin; if such treatment is thoroughly instituted liver abscess need not follow amebic dysentery. He further claims that when liver abscess does occur, it is due to the improper treatment of the dysentery. Kieffer firmly believes this to be incorrect, that in a certain percentage of cases, no matter how thoroughly the dysentery is treated, even when the clinical cure is promptly obtained, abscess follows. Protargol has been used in the treatment of dysentery in injections of a 1% solution, with excellent results. Next to prophylaxis the most important part of the treatment is to relieve the chronic congestion of the liver. This is accomplished by the free exhibition of the saline sulfates, or active counterirritation applied over the surface of the organ. When these measures are unavailing and an abscess appears to be forming, hepatic phlebotomy is indicated. When pus has formed in the liver, the indication is for prompt and thorough evacuation just as in abscess elsewhere. Exploration of the liver for suspected pus must be thorough and searching,

and preferably under general anesthesia; always being prepared to complete the operation of evacuating the abscess cavity or cavities by any of the recognized procedures. The method with trocar and cannula is particularly applicable to deep-seated suppuration in the liver, especially when the pus is found posteriorly or in the dome. Kieffer believes that it is unwise to curet or irrigate the abscess cavity. If the sac is very large, making a counter opening is necessary, then washing the sac is safe. [F.C.H.]

3.—Rupture of the Urethra; Pyosalpinx; Excision of Tumors of the Neck.—Manley details the following cases: (1) Urinary extravasation into the perineum and scrotum, subsequent to a rupture of the urethra posterior to a stricture; (2) gonorrheal pyosalpinx in an unmarried woman of 27. The patient has passed through all the acute stages of pelvic peritonitis and there remains a large, tense, painful mass in her left groin, pressing well down behind the uterus. This was opened by way of the vagina; (3) female, 6 years of age, suppurating nodes in the submaxillary triangle of the right side of the neck. Manley is opposed to operating upon these latter cases until local and constitutional remedies have failed, because they never endanger life, and all the talk about their being the centers for the diffusion of sepsis is purely visionary; in most cases they tend toward spontaneous dispersion, and, except in an experienced hand, their operative removal is a highly perilous procedure. [F.C.H.]

4.—Is Nephroptosis Hereditary?—Sheldon believes that heredity is the most important factor in the etiology of floating kidney, and that an abnormally movable or a floating kidney never occurs unless the patient is congenitally predisposed to the condition. These opinions have been derived from the experiences and writings of students of the subject and from personal experiences. [F.C.H.]

5.—A Case of Trigeminal Neuralgia Complicating Typhoid Fever.—Aldrich reports a case of severe and persistent trigeminal neuralgia which developed in the convalescent period of a typical attack of typhoid fever, and which has continued for three years. In mapping out the area of pain it is strictly delimited to the distribution of the sensory portion of the third branch of the trigeminal. Whether this neuralgia is due to changes which took place in the nerve itself, due to nutritional disturbances or to toxic agents, or whether it is a pressure neuralgia from some swelling and tumefaction of the periosteum or other tissues along its course, it is impossible to ascertain. [F.C.H.]

6.—The Toxemia of Pregnancy.—Wells details at length the causes, diagnosis, pathology, prognosis and treatment of toxemia of pregnancy. This condition is not infrequently diagnosed as hysteria. In the majority of cases the prognosis of the toxemia of pregnancy, if not complicated by a preexisting or coincident nephritis, is good, providing the patient is under the careful observation of a competent physician. The diet is detailed. Those remedies which eliminate by the liver and intestines are of the utmost importance, the most valuable of which is calomel in 5 or 10 grain doses daily, combined with phosphate of sodium. When nausea a marked and constant symptom it is best to depend upon enemas to move the bowels, leaving the stomach free for nourishment. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

REVIEW OF LITERATURE

Infection and Immunity in Tuberculosis.—Beever,¹ contending that tuberculosis is but mildly infectious, states that we should educate the public in the matter, stating that the disease does not require isolation, and that only under certain quite exceptional conditions does it appear to be infectious at all. He insists that healthy people enjoy extraordinary immunity, that fresh air and open windows are the great armor against its attacks, and that the instruction of the young in the principles of hygiene will prove more valuable eventually than

the isolation of the unwilling artisan or the excommunication of the clerk. [A.O.J.K.]

Practical Thoughts on Pneumonia.—The increase in incidence of lobar pneumonia is attributed by Anders¹ to the prevalence of influenza and changed habits of the people. Various types of pneumonia are considered in detail, special attention being directed to the difference in the anatomic, clinical and etiologic peculiarities of pneumococcus and streptococcus infections. These two affections should be separately described, even though mixed cases are not uncommon. In pure streptococcus pneumonia associated with influenza we have septic manifestations and the looked-for irregular fever and sweats, with profound prostration. The patient is desperately ill of his pneumonia for days before the physical signs, which are those of bronchopneumonia, appear. Many of the so-called typhoid pneumonias are due to the pneumococcus, though a limited number are probably due to other organisms. In Anders' experience hemal leukopenia has not proved to be an unfavorable indication. Adiposity is unfavorable to recovery. Disinfection of the sputum should be employed. Emphasis is given to the fact that urgent indications for treatment during the course of pneumonia may develop with great suddenness. For this reason no physician who pays one or two calls daily can possibly give his patient all the benefits of medical art. In other words, the situation demands the constant presence of either a very skilled nurse or competent physician. [A.G.E.]

Acute Syphilitic Nephritis.—Waldvogel² reports a case of undoubted syphilitic nephritis. The patient was a man of 31, who, three weeks after the appearance of a number of condylomas around the rectum, presented among other secondary lesions general edema, dyspnea, and dysphagia; within the next week an extensive thoracic and abdominal effusion appeared, and he had to go to bed. His heart was considerably dilated, the urine scant, and contained albumin in large quantities and many casts. Mercurial inunctions were ordered, and the patient began to improve at once. Within a very short time the quantity of urine increased, the amount of albumin diminished, and all the symptoms improved. Three weeks after his admission into the hospital, the patient receiving no treatment but mercury, was free from edema, of pleural and abdominal effusion. He voided a normal amount of urine which contained neither albumin nor casts. [E.L.]

The Etiology of Acute Rheumatism and Allied Conditions.—Beaton and Walker,³ as a result of experimental investigations, state that they agree with those observers who maintain that a particular microorganism is constantly associated with acute rheumatic lesions; that this microorganism can be cultivated on artificial media outside the living body; that on inoculation into animals it gives rise to the characteristic lesions of the disease, and can again be isolated from those lesions; and that culturally the microorganism resembles a streptococcus, but it is specifically different from the ordinary streptococci, according to the test of Marmorek. Accordingly it is concluded that the bacterial specificity of acute rheumatism has been satisfactorily established; its toxic specificity remains to be investigated (at present under examination). [A.O.J.K.]

Errors in the Estimation of Urea by the Hypobromite Method.—Elliott P. Joslin⁴ considers that this method is usually satisfactory, but errors of nearly 100% may occur. Such errors depend upon the fact that ammonia, acetone, and B-oxybutyric acid are readily decomposed in the performance of the test, yielding products which act in the Squibb's apparatus quite the same as urea. Ammonia acetone and B-oxybutyric acid occur chiefly in diabetes. Reports of large quantities of urea in this disease should therefore be closely scrutinized, and if these bodies are present, such estimations are useless. [F.H.C.]

Gastric Disorders in Old Age.—Washburn⁵ holds that special instruction regarding the diseases of old age should

¹ Medicine, February, 1903.

² Deutsche medicinische Wochenschrift, October 30, 1902.

³ British Medical Journal, 1903, 1, 237.

⁴ Annals of Gynecology and Pediatrics, January, 1903.

⁵ Wisconsin Medical Journal, February, 1903.

have a place in the medical curriculum, as gradual progressive alterations in tissues and functions make the anatomy and physiology of the aged differ from that of either the adult or child. Some of these alterations are depicted. Dilation of the stomach is an important cause of gastrointestinal disturbances in the aged. Three cases are cited to illustrate points in treatment. In the way of dietetics old people should eat often and little at a time of a dry, varied diet. Special forms of food are not needed. Medication in the dyspeptics referred to consists of creosote, strychnin, aloin and hydrochloric acid. Antiseptics are of great importance, and if creosote be not tolerated others should be substituted. [A.G.E.]

Phosphaturia.—A disease under this name has been described by a number of authors of late. Its symptom-complex shows many clinical variations, but it has one constant symptom: a urine already cloudy at the time of micturition, due to the large amount of its phosphates. Soetbeer¹ reports such a case, which characterized itself by attacks of abdominal colic, catarrh of the large intestines, nutritional disturbances, and phosphaturia. To determine if possible the cause of the latter, which he believed to be due to diminished acidity, he made a number of observations, comparing the excretions of the patient with those of a normal individual under exactly the same conditions of life. He found a great difference in the amount of lime excreted through the urine of the two patients, the sick individual excreting 269% more than the other. This excess coming from his food found its way into the kidney, instead of being excreted, as is usual, by the large intestine. The amount of phosphates did not show any variation from the normal. The author believes that the intestinal catarrh is the cause of the phosphaturia, and that the other symptoms, as the pain, indigestion, etc., are a variety of kidney colic, brought on by excess of lime passing through the renal tubules. [E.L.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

REVIEW OF LITERATURE

Transthoracotomy.—Newbolt² reports that a female child of 12 years gave a history of impaired respiration, pain and tenderness in the right hypochondrium, and general discomfort. There was marked distention in the region of the liver, where dulness extended from the third rib to three fingers' breadth below the costal border. A tentative diagnosis of hydatid cyst of the liver was made. Under chloroform a needle was thrust through the eighth interspace and mid-axillary line, which withdrew yellow, foul fluid. The same was true in a thrust through the ninth interspace. The lung was found healthy and retracted, and the wall of the cyst in the liver bulged up at the lower part of the wound. Aspiration drew off eight ounces of pus. The cyst wall was drawn up and sutured to the soft tissues of the wound to cut off the chest cavity. A number of small cysts were found. The large cyst wall was removed and drainage instituted. The patient made a perfect recovery. Another case was that of a man aged 37, who complained of slight tenderness on the right side of the chest with impaired movements, wooden dulness extending upward to a level with the right nipple, breath sounds were diminished, and there was skodac resonance at the right apex. The patient had the appearance of profound illness. The liver extended below the costal border, and was tender. Under general anesthesia a needle was thrust through the ninth interspace and midaxillary line and the pleural cavity opened. It was plainly evident that a large abscess of the liver existed. It was packed with gauze to shut off the pleural cavity and freely incised; the pus evacuated. The chest cavity was shut off, drainage instituted, and the patient made a good recovery. Examination showed the cyst to be of hydatid origin. [A.B.C.]

The Use of Wet Dressing in Surgery.—Eisendrath³ writes on the above subject because the profession in general has not yet learned the lesson of simplicity in surgery. Free

incision in infected wounds is necessary and general anesthesia is always preferable. Freezing mixtures render the parts so hard to cut that they should be limited to cases in which a single small incision suffices. Gauze drainage and wet dressings are recommended and weak antiseptics are better than strong ones. In an experience comprising 2,000 infected wounds a 1:1,000 salicylic acid solution has been used in every case with satisfactory results. The parts involved must be kept at rest and the kidneys, liver, and intestines kept in good eliminatory condition. The conclusion reached is that the wet dressing is the most logical treatment in infected and accidental wounds. They must be saturated with mildest solutions and frequently changed. [A.G.E.]

Further Report on the Use of Ethyl Bromid as a Primary Anesthesia to Ether.—Emery Marvel¹ claims the following advantages of anesthetizing by this method over that of the administration of ether alone. The lesser time required to secure anesthesia; the reduction of the discomfort to the patient taking ether shown in the absence of the bronchial irritation, with the increased mucous secretions and consequent coughing; the diminished dangers by injury to the violence from the more marked and longer-lasting excitation in the muscular contraction that frequently takes place in the first stage of ether narcosis; and the lesser amount of ether required, with the consequent more rapid regaining of consciousness and the diminished tendency to postanesthetic vomiting. [F.C.H.]

Suture of the Brachial Plexus for Birth Palsy.—Kennedy² states that many of these cases recover without treatment; many, however, fail to recover, and he is doubtful as to the efficacy of electrical treatment in birth palsies, though electricity is of undoubted value for diagnostic and prognostic purposes. He holds that the only rational way to treat birth palsies is that of injuries to peripheral nerves in general. No operation should be attempted until sufficient lapse of time has occurred to determine whether electric reactions will indicate an approaching recovery of the muscles. By the time the child is two months of age ordinary electric reactions of the child's muscles are sufficiently stable to determine whether the nerve and muscles properly respond. If after this age there be no response to the faradic current, although of course the galvanic current evokes good contractions, it is safer to proceed with operation than to put it off in the further hope of recovery. Comparatively few secondary operations on the brachial plexus are reported, and in most of these the subsequent history of the cases is not given. The author has operated on three cases, but in only one has sufficient time elapsed for recovery to be well advanced. In this case commencing restoration was first noticed about 12 weeks after the operation, and now after nine months recovery is almost complete. The operation is described in detail. The author advocates exposing the cords of the brachial plexus, following them in the region where injury is probable, breaking up all adhesions. If masses of cicatrices have occurred in the injured nerves these should be resected and the severed cords approximated by sutures. [A.B.C.]

Hypertrophy of the Prostate and Galvano-Cautery Treatment After Bottini-Freudenberg's Method.—Bierbaum,³ at 62, reports his own case of enlarged prostate, which annoyed him since early manhood. Three years ago urinary retention resulted and catheterization had to be resorted to. Under local anesthesia, which only lessened the pain, he had a Bottini operation performed on himself and was at once able to void urine spontaneously. Six days later the catheter showed no residual urine and he has not had to use it since. He had some discomfort for a month, but since then has been a well man. [E.L.]

Appendicitis from a Physician's Standpoint.—Castelli⁴ argues against surgical interference in every case of appendicitis and says that the necessity of surgical intervention within 24 or 48 hours depends in a greater degree upon the physical constitution of the patient than upon his apparent condition.

¹ Jahrbuch für Kinderheilkunde, Vol. lvi, p. 1, 1902.

² British Medical Journal, January 24, 1903.

³ Wisconsin Medical Journal, February, 1903.

¹ Annals of Gynecology and Pediatrics, February, 1903.

² British Medical Journal, February 7, 1903.

³ Münchener medicinische Wochenschrift, November 25, 1902.

⁴ Washington Medical Annals, January, 1903.

In a strong individual the inflammatory process has a tendency to reach its final stage and it is quite impossible to stop its course. In these cases the only chance of recovery is by immediate operation. In weak individuals inflammation progresses more slowly and it may be checked by the resistance of the patient and rational medical intervention. If the physician believes in operating all cases he had better in the latter class wait until the period of recovery, when operation, even if useless, will not be dangerous. [A.G.E.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

EDITORIAL COMMENT

Thyroid Extract and Hemophilia.—Despite our empiric acquaintance with certain pathologic phenomena due to failure of glandular function—as in myxedema—and the effect of supplementing such deficient function by the administration of appropriate substances derived from the lower animals—as thyroid extract—we have but little exact knowledge of the physiologic function and therapeutic action of animal secretions and extracts. Every addition to empiric knowledge in this field should therefore be welcomed; and from analysis and comparison of all the data gathered by experience there may result eventually not only a definite understanding of physiologic and pathologic problems now obscure, but also and in consequence the establishment of sound therapeutic principles from which further practical advances may be made. These remarks are suggested by the report of Dr. Eugene Fuller's experience,¹ abstracted elsewhere in this issue, with the administration of thyroid extract as a hemostatic, especially in hemophilia. The results are evident; there are the facts, reported by a trustworthy observer. The recoveries may have no logical connection with the treatment, it is true, but this proposition is much more improbable than the supposition that the treatment produced them. Knowing so little of the actual pathology of hemophilia—absolutely nothing of its etiology—it would be rash to dogmatize as to the rationale of the cure. Speculation is at least as likely to be wrong as right unless one is willing to deceive himself by repeating words such as "metabolic alteration," "nutritional change," "somatic chemistry," "molecular vibrations," "organic harmonies," etc., etc., which sound well enough but as applied to this problem mean nothing in particular. Certain it is, however, that the role not only of the ductless glands and their secretions, but of many other of the structures and fluids and products of the animal body is but little, if at all understood; and that every fact bearing upon these important questions should be noted and held in mind. Dr. Fuller has therefore not only served his immediate patients and perhaps many others by his new use of thyroid extract, but has added one more drop to the stream that shall finally wear away the stone of our ignorance concerning the physiology, pathology and rational therapy of the thyroid gland and allied structures.

REVIEW OF LITERATURE

Pulmonary Tuberculosis Treated with Lime and Tuberculin.—Rudolph² treated five cases of pulmonary tuberculosis, two of which were very far advanced, with the following combination: Every night he gave from 150 to 200 grams (5 to 7 ounces) of limewater, diluted with an equal quantity of warm water, by rectum. The patient retained it very well, and prompt absorption resulted. They were given a powder of carbonate and calcium phosphate three times daily. The lime was given to increase the lime of the blood and aid in the calcification of the tubercles. This was associated with graduated injec-

tions of tuberculin to set up renewed inflammation. In one of the cases, all symptoms, even the tubercle bacilli, disappeared, the other four improved more than any cases ever under his treatment. [E.L.]

Pyranum.—Schlesinger¹ describes a new antipyretic analgesic formed by a combination of benzoic acid, salicylic acid and thymol, being chemically benzoylthymol—sodium benzoyl oxybenzoate. It is a white crystalline powder, soluble in water in the proportion of 1 to 5. Experiments upon the lower animals showed that it has a very low toxicity. Studies made upon the blood-pressure in human beings by a Basch sphygmomanometer showed that large doses cause a slight fall in the pressure, so small, however, as to be within possible physiologic limits. Schlesinger has employed the drug in 146 cases, including such diseases as acute rheumatism, chronic rheumatism, gout, bronchitis, pneumonia, neuralgia, etc. His conclusions are as follows: In various forms of neuralgia and symptomatic pains the remedy shows itself possessed of very marked analgesic powers. In acute rheumatism it lessens both the fever and the pain, exercising an action similar to that of salicylic acid, but without the drawbacks of this remedy, such as depression of the heart, too free sweating and disturbance of the stomach. It was used in a few cases of bronchitis and bronchial asthma with apparently good results, although the number of observations was too small to allow of positive conclusions. Pyranum may be given either in a solution or in gelatin capsules, the preference being for the latter mode of administration. After its administration in capsules the salicylic acid reaction was demonstrated in the urine within 20 minutes. The dose is from ½ gram to 2 grams (7 to 30 grains) two or three times a day, according to the individual indications. The effect of the drug is greater than would be the corresponding effects of any of its three components in equivalent dose. The results of its administration may, therefore, be attributed to the peculiar combination. [H.C.W.]

Treatment of Varicose Ulcers.—A. Robin² directs that the ulcers be covered with compresses which have been dipped in a mixture of 1 part of Labarraque's solution to 3 parts of water, and these covered with oiled silk and held in place by a bandage. The strength of the solution may be increased ¼ or ½ if the application causes no pain. The dressing should be renewed every morning. If this treatment fails, skin grafts may be tried. The patient should be kept at rest and the limbs massaged daily. Internally, small doses of hamamelis have proved beneficial. [L.F.A.]

Paraldehyd and Hyoscin as Somnifacient and Quiescent Drugs in Disease.—Bumke³ has used paraldehyd in a large variety of diseases and refers to it as being a drug which, when properly prescribed, always produces sleep, and even when continued for a long time is never dangerous, not even carrying with it unpleasant after effects. On account of its strong odor and taste it should be given highly diluted in very sweet tea or other liquids, but never in beer, wine, cognac, etc. Its dose varies from 3-6 grams (45-90 grains). Natural sleep follows within 3 to 15 minutes and lasts from 5 to 8 hours. Cases of paraldehyd poisoning and habit have never been observed by him. In only a few cases of violent mania and other forms of insanity have the results been disappointing, and in such cases hyoscin hypodermically has had to be resorted to. It produces sleep by diminishing the excitability of the brain. Its after effects are mydriasis and diminution of the secretion of saliva and sweat. Death due to poisoning with it has never been reported. [E.L.]

FORMULAS, ORIGINAL AND SELECTED.

Massage Cream.⁴—

White wax	15 grams (½ oz.)
Spermaceti	15 grams (½ oz.)
Cocoon oil	30 cc. (1 oz.)
Lanolin	30 cc. (1 oz.)
Oil of sweet almonds	60 cc. (2 oz.)
Melt in a porcelain dish, remove from the fire and add:	
Orange-flower water	30 cc. (1 oz.)
Tincture of benzoin	3 drops

¹ Medical News, February 28.

² Münchener medicinische Wochenschrift, December 2, 1902.

³ Therapeutische Monatshefte, 1903, xvii, p. 32.

⁴ Journal des Praticiens, Vol. xvii, No. 1, 1903, p. 8.

⁵ Münchener medicinische Wochenschrift, November 25, 1902.

⁶ Bulletin of Pharmacy, December, 1902.

NERVOUS AND MENTAL DISEASES

J. K. MITCHELL

F. SAVARY PEARCE

EDITORIAL COMMENT

Lunacy and the Law is the title of an address delivered by Sir William R. Gowers, M.D., F.R.S., before the Medico-Psychological Society of Great Britain and Ireland. This address, which is a modern criticism of some of the methods now in vogue for the treatment of the insane, is worthy of comment. In presenting this very important topic in mental medicine the author first criticises the stone wall about the asylum at Hanwell, and then discusses the things which have prevented to some extent a just appreciation of the advancement already made in the treatment of this class of patients, the greatest factor in this probably being the indignation of the public over the alleged ill treatment of imbeciles, and the incarceration in insane asylums of certain persons who have been proved sane at the time of their commitment. The author emphasizes strongly the importance of distinguishing between the different forms of mental derangement and deplors the tendency to use the same restrictions for the various types of insanity. He believes the present English law is faulty, as in certain cases in which it is not considered necessary to confine the patient to an asylum, the patient is branded as insane the same as those whose cases demand commitment to the asylum. In this connection he states: "This is compulsory (upon the physician) under heavy penalty irrespective of the character of the malady from which the patient is suffering and without the least regard for any necessity for it; without the least regard for the harm to the sufferer which may ensue, and which does and must result in a large number of cases." He dwells on the injustice of a such a course, particularly in a certain class of "border line" cases, in which the two Commissioners are very apt to take opposite views, and also of its workings in many cases of mental alienation in which the patients quickly recover. "To compel every person of unsound mind to be certified cannot secure that no sound person shall be certified." Many measures are discussed that bear the broadest humanitarian aspect. Reference is made to a patient with tumor of the brain who was partially paralyzed in the legs and arms and bedridden, and who was sent to an asylum because the Commissioner knew she had delusions, her doctor being fined for not certifying that his patient was insane. To our minds one might as well commit a patient having typhoid fever with delirium to an asylum. It is very evident, as Dr. Gowers suggests, that the mere advancement in psychiatry has been misinterpreted by those who, having a limited knowledge as to the therapeutics of mental disease, would claim the insane asylum to be the proper habitat of every person of unsound mind.

The Relation of the Medical Expert Witness to the Lawyer and the Court.—There has been much just criticism by the legal profession regarding the so-called medical expert witness and his testimony. There can be no doubt that expert testimony is at times lacking in accuracy, speaking, of course, of the honest witness. The subject is not finished when the medical profession has been thoroughly overhauled and placed in the direction of rectitude; and we would therefore emphasize the fact that scientific evidence alone should be tolerated. Also a better sense of justice toward medical men is needed by the lawyer, who has great advantage when the expert is placed upon the stand. There seems to be a tendency among legal minds to assume knowledge of medical matters which we have learned only through years of research. An example is that of a judge in one of the courts of Philadelphia, who presumed and did support his own theory that the "previous history" of a case of mental disease bore no

relation to the mental status of the criminal some months before his coming to trial, when he had committed a murder. It is needless for us to call the attention of the medical profession to the desirability of holding together in the endeavor to teach the judicial man that when an expert is called there are matters of evidence that should be admitted which the judge is not able to decide upon, and that, therefore, if the expert is put upon the stand he should be given the right to explain why a previous history bears upon the case, especially when the defendant's insanity is questioned. It is by no means entirely the fault of medical witnesses that damage suits and murder cases do not always receive full justice. An astute lawyer may juggle scientific data of which he knows absolutely nothing; and by superior excellence in declamation may induce a jury to assume that his wordy opinion should be the final judgment. There are many lines in which the medical guild should be at one, and not the least is that in training themselves as experts and in seeing also that our worthy professional brethren, the lawyers, do not trespass upon truly medical matters any more than they will tolerate the doctor-lawyer.

REVIEW OF LITERATURE

The Criminal Responsibility of the Epileptic.—John Punton gives a brief summary defining the demarcation between empiricism and scientific knowledge in the study of epilepsy. He holds that the modern conception of epilepsy is based on cerebral localization and that epilepsy is a symptom of brain disease whose continued presence tends to mental deterioration. The mental responsibility of the epileptic depends largely upon the extent to which the brain and its functions were impaired. The fallacy of legal tests as applied to epilepsy is noted and criminal irresponsibility is not incompatible with a true knowledge of right from wrong. Hence the criminal responsibility of the epileptic should be based upon his power of self-control. Punton holds that the opinion formulated by Justice Stephen, of London, is eminently proper and should be universally adopted. It is as follows: "No act is a crime if the person who does it is at the time when it is done prevented either by defective mental power or by any disease affecting his mind from controlling his own conduct *unless the absence of the power to control has been produced by his own default.*" Epilepsy may be congenital or acquired, hence the importance of its etiology and the relation it bears to crime. None doubts that alcohol and syphilis are potent factors in causation and promote the development of homicidal acts so common in epilepsy. When murder has been committed by an epileptic the law should hold the criminal epileptic under medical surveillance the rest of his life. Careful discrimination should be made between punishment and medical treatment. No insane criminal epileptic should be punished unless his epilepsy was brought about by his own default and even then his pitiable condition appeals to medicine rather than law. The question of mental responsibility should be decided by a medical commission appointed by the court; and their report returned to the court prior to the trial should be the basis of adjudication independent of the lawyers engaged. Suitable compensation should be allowed by law for such service. The following deductions are offered: Epilepsy is a symptom of some brain disease; its continued presence tends to mental deterioration; the mental responsibility of the epileptic depends upon the extent of self-control; the legal test of insanity is not sufficient, as mental irresponsibility is not incompatible with a knowledge of right from wrong; epileptics are to some degree at least responsible for criminal acts, more especially when the epilepsy is produced by their own default; criminal acts of epileptics appeal to medicine rather than law for their proper adjudication; in case of murder where epilepsy is proved the law should permit life commitment to an insane hospital rather than a penitentiary; the mental responsibility of the epileptic should be referred to a medical commission appointed by the court which again may be referred to the local county or State medical organizations; a just recompense

should be legally allowed for such medical service. [It might well be added to these recommendations that the epileptic criminal and the insane criminal should be confined in institutions especially devoted to them and not in general insane hospitals. In this State at least a verdict of guilty but insane frees the criminal instead of carrying with it as it properly should a condemnation to a place of detention until cured and surveillance afterward. An even better summary of the test of responsibility than that of Mr. Stephen may be thus stated: If the accused person could refrain from the act he is responsible; if the disorder of mind has so injured his power to inhibit his impulses that he cannot control them he cannot be considered responsible. But neither of these formulas will suffice to include all possible cases. Mr. Stephen is defective in making an epileptic answerable for his epilepsy, for though he may have acquired it by his own fault, vice or ignorance, its presence may result in the destruction of his inhibitory control.]

Paramyoclonus Multiplex.—Langdon¹ reports a new case with further history of a case reported in 1896, which has since recovered. The new case was a girl of 13, generally delicate; no gross defects physical or mental. There was onset of muscular spasms in paroxysms shortly after being frightened in play. The spasms were shocklike and clonic in character, typical in distribution, affecting muscles of trunk and those connecting trunk and extremities. The face, hands and feet were not affected. There was no paralysis, no anesthesia, no contraction of visual fields. The reflexes were highly exaggerated, both cutaneous and muscular. There were no sphincter defects. Ankle clonus and Babinski's sign were absent. The mental state was not emotional. The frequency of shocks was from 30 to 100 per minute. Paroxysms lasted during waking hours as a rule, and always ceased when the patient slept. The sense of excessive fatigue was constant. Temperature normal. Pulse 72 to 108, low tension. Heart and lungs clear. Urine normal. The treatment was by antispasmodics, tonics, and rest in bed, with full feeding. The child remains well to date (four months after last paroxysm). The case reported in 1896, male, age 48, presented practically the same distribution of spasms following mental worry and a light attack of la grippe. Duration of shocklike contractions about 14 months, with occasional intervals of comparative freedom for a few days. Patient remains well to date (about five years).

Pathogenesis and Surgical Treatment of Exophthalmic Goiter.—A. E. Halstead² thinks the thyroid is the seat of disease on account of the remarkable antithesis that seems to exist between the symptoms of exophthalmic goiter and struma-thyropriva when the functioning gland does not exist; also in the effect of struma operations since the improvement following removal of the vascular gland is most notable. The bad effect of administering thyroid in Basedow's disease is another point as regards etiology. The author does not approve of exothyropepy as practised by Jabaulay since symptoms of acute thyroid intoxication are frequently noted. Partial resection of the cervical sympathetic, including both unilateral and bilateral resections, is the most favorable operation. Balascescu reports nine cures, eleven greatly improved, and two unimproved. There were five deaths but not due to the operation.

Treatment of Epilepsy.—P. Jarnot³ writes a short paper approving the use of bromids in treatment. He claims that the general irritability of the nerve centers in epilepsy, both in the paroxysmal and interparoxysmal states, is best allayed by the use of this drug, though without specific action. Granting the cortical origin of epilepsy, he refers to most all the classic writings of Locock (1851), Voisin, Damourette, Relvis, Legrand du Saule, Charcot and others, and considers the bromids, therefore, the most rational remedies to allay such irritability. Potassium bromid he considers in the first rank. The dosage should be uniform and regular as possible—60 grains per day up to 150 grains a day, depending on the effect. He particularly dwells upon the careful continuous dosage and the very remarkable results in some cases.

Mental Dissolution the Result of Alcohol.—Robert

Jones⁴ goes carefully over the statistics of the general effects of alcoholism and of alcoholism and insanity in which claim is made that 21.8% in men and 9.5% in females in the yearly admissions as prepared by the Lunacy Commissioners are of insanity due to alcohol. Special effects of alcohol is also dwelt upon, such as degeneration of nervous and nonnervous tissues, due to disturbed metabolism. He claims convulsive symptoms are more prone to occur from absinthe and of analgesia from wines. Inheritance of insanity or nervous disorders is found in from 25% to 33% of insanity induced directly by alcohol. Desiring to avoid the "fallacy of extremes," the author is of the opinion that the best working hypothesis for the prevention and cure of all forms of alcoholic disorders, whether mental or physical, must be that based upon the practice of total abstinence.

Tube-like Field of Vision in Hysteria.—R. Greff⁵ refers to the central limitation of the field of vision being very reliable in the diagnosis of hysteria. The patient in such cases says he sees objects as through a hollow tube. The writer has found it present in no other disease, hence he considers it a positive diagnostic mark of hysteria when present. Acuity of vision in such patients is, however, normal. The ophthalmoscopic findings are of course normal. Also when the distance of examining is increased the patient's field of vision does not increase in proportion, a valuable sign that when present simulation is thus ruled out. A definite venous and arterial pulse was also seen in the papilla in the case reported, due to abnormal irritation of the entire vascular system, as no arterial disease was found to exist.

Pseudomeningitis of Psychological Origin.—Starck⁶ reports upon this class of cases. Symptoms of meningitis existed, and yet at postmortem no lesion was found. Schultze first described the condition. Krannals, Cohts, and Strumpell have all reported cases of similar nature. The toxic process is the theory which alone explains the symptomatology. There is another class of cases somewhat similar to the above, first described by the French in 1870, but in which the patient invariably recovers. This last class is supposed to be entirely of psychic origin. In the latter an important point in diagnosis is that the disease runs its course without fever. The patient the author reports gave a history of headache and vertigo lasting eight days. There developed pain in the back, vomiting, chills, and contraction of the muscles of the neck. The man was immovable in bed, passive movements producing great pain. Every few minutes there were tetanic convulsions accompanied by cries of pain. The eyes were closed, but no ocular palsies existed. All reflexes were much increased. No fever. Hypnotism was resorted to, and with suggestion all the symptoms disappeared.

Alcoholic Epilepsy.—T. D. Crothers⁴ says alcoholic epilepsy is increasing rapidly in this country. It is a neurosis which should be recognized, having distinct symptoms, the recognition of which is imperative in treatment. When the toxic symptoms are convulsive and explosive and come on suddenly the future of the case is very ominous, and the warnings from these symptoms should be heeded. The connection between mixed drinks and these spasmodic symptoms are traceable and should be considered in the prognosis and treatment. The treatment and curability of these cases can be carried on with great hopefulness, and undoubtedly in the future will become a prominent part of the work.

Feigning of Insanity by a Traumatic Lunatic for Personal Damage Reasons.—Kiernan⁵ speaks of the lack of appreciation of the fact in forensic neurology or psychiatry, and that this bias, foreign alike to science and the spirit of common law, too often exerts a baneful influence in thus taking a "danger to society" viewpoint as proof alone of insanity. The simulation test of sanity by the insane is recorded as long ago as the sixteenth century. At the time when Shakespeare wrote "King Lear," feigning insanity by the insane was a familiar street sight. But still records show comparatively

¹ The Lancet, October 25, 1902.

² Berliner Klinische Wochenschrift, No. 21, 1902.

³ Deutsche Zeitschr. f. Nervenheilkunde, Nos. 5 and 6, 1902.

⁴ Journal American Medical Association, December 13, 1902.

⁵ Medicine, July, 1902.

¹ Journal of Nervous and Mental Diseases, September, 1902, p. 541.

² Medicine, September, 1902.

³ Gazette des Hôpitaux, November 13, 1902.

few cases in which insanity has been feigned by the insane for self-interest alone; usually it is to avoid the consequences of violation of the law. Simulators are apt to manifest a loss of memory which is so great as to render it practically impossible that it should be real. When the insane answer questions at all they usually answer with some degree of sense, whereas if he is simulating this phase of an insane person he may manifest an entire absence of relation to the question. Kiernan wishes to demonstrate that the case reported shows that simulation *per se* is not positive evidence against actual mental disease.

The Tics in General.—E. Noguès¹ goes carefully over the subject of tics and decries the confusion of the subject brought about by the improper use of the term *tic* which applies to movement. Hence *tic douloureux* he considers a misnomer. Also with Meige and Feindel the author insists on the difference between *tic* and *spasm* which latter is a motor reaction the result of imitation within a reflex spinal or bulbospinal arc and due to some pathologic cause. *Spasm* to no degree is under the influence of the will, while *tic* is (Charcot). There is definite relation therefore between *tic* and the mental state. The general characteristics of *tics* then are of involuntary movements modified by the action of the will, which may *arrest, transform or avert*. A *tic* is also periodic.

The Rational Treatment of Locomotor Ataxia.—Curran Pope² considers only the medical treatment. The first and most important thing to decide is whether the case demands antisyphilitic drugs. Spinal syphilis must be carefully differentiated from tabes. He denies the excessive use of iodids and mercury. In the use of the latter the patient's color, hemoglobin, and weight should be watched. Silver nitrate, grain $\frac{1}{2}$ to $\frac{1}{4}$ after meals, is the drug he has found most useful. The tonics of value are iron, arsenic, quinin, cannabis indica, and the phosphates. Strychnia is apt to produce nervous erythrmism, and increases the pains. The serums can not be recommended. The symptomatic treatment used for pain is acetanilid, caffeine, camphor monobromate, and cannabis indica combined; or phenacetin or salophen, but general treatment helps most. Morphia in the cases should be used with caution. For vesical retention and incontinence, the catheter is best used. Internally, hyoscyamus, buchu, and boracic acid are of benefit. Faradic electricity gives good results. For amaurosis hypodermic injections of strychnin, gr. $\frac{1}{30}$, cautiously increased, or of a cyanid of gold and potassium. Mechanical measures: Hydrotherapy is first begun by means of the half bath, the patient being seated in a tub of water, 12 to 14 inches deep, at a temperature ranging from 70° to 85°, of two minutes' duration, gradually increased. This is followed by a hard rub with a Turkish towel. The use of the spray or rain bath at 104° for two minutes following the use of electric light bath until sensible perspiration occurs is of value. Static electricity in the form of heavy sparks to spine, extremities, epigastrium, and bladder, followed by bead shower is a valuable agent. Massage and suspension are mentioned as valuable adjuncts as is the method of reeducation as outlined by Fraenkel.

Secondary Traumatic Insanity.—S. A. Dunham³ speaks of etiology, symptomatology and pathology in a paper giving the report of a case 18 years after injury, and recovery after trephining. He confirms in this reported case the statement of Theodore Kellogg, viz.: "There are cases in which we find intervals of weeks and months or years between the cranial injury, which may have caused slight depression of the skull, and the attack of mania or melancholia, which may manifest a recurrent tendency." Head injuries as a physical cause of insanity attract attention because of the possible opportunities offered for cure. In some cases even concussion of the brain alone may produce insanity. In the case reported there was no traceable hereditary or acquired neuroses to predispose the patient to insanity. Gradual change in disposition, loss of memory, confused ideas, which later developed into hallucinations, delusions and periodic attacks of mania, were all in the initial stage of the case. The man suffered from headache and vertigo, with various disturbances of the special senses. He

was 42, and had been struck upon the head at 24 by a club, and was unconscious for two hours. He could feel a soft spot on the vertex next day, but no physician saw him. He has never felt well since injury, and was unable to work more than half time during the two years previous to the insanity. Changes of character, such as impatience, apprehension, loss of memory, confusion of ideas then followed. At the time of trephining over the "tender spot" the man had just recovered from one of his periodic mental storms. During the past two years he had suffered from maniacal outbursts, followed by great mental depression. The button of bone (one inch in diameter) was removed from the anterosuperior angle of parietal bone of right side. The dura was a little thickened, but no adhesions. The bone was thickened on the inner table. He recovered promptly and has been well ever since.

The Depth of Sleep.—Sante de Sanctis and U. Neyroz.¹ This interesting communication on the depth of sleep in normal individuals and in psychopathic persons deals with the degrees of stimuli that are required to arouse the sleeping person. Instead of using auditory stimuli, as employed by previous observers, such as Kohlschütter and Michelson, Sanctis and Neyroz adopted tactile and pressure stimuli, using for the purpose esthesiometers with both sharp and blunt points, the pressure of which could be nicely regulated to a degree just sufficient to cause awakening. The experiments made upon each person lasted over six months, and were carried out at different hours on successive or irregularly alternating nights. Four were normal and five were abnormal subjects. Hourly oscillations in the depth of sleep occurred, although the greatest depth occurred within 1½ hours after falling asleep. A secondary deepening occurred during the middle period of total duration of sleep. In all five pathologic patients the depth of sleep was greater than in normal persons.

Cerebral Sclerosis and Focal Symptoms.—Seven years ago Gussenbauer² trephined a patient who presented symptoms of focal epilepsy; at the time he found no growth, but a localized induration of the brain. During the remaining years of the patient's life the epileptic convulsions became more and more frequent, the right side and later the left became paralyzed, and his intellect deteriorated until he was a pronounced idiot. At the autopsy the following lesions were found: Multiple sclerosis of brain and spinal cord; atrophy of brain, especially its left side, where the sclerotic areas were most numerous; chronic internal hydrocephalus and lesions of less importance in other organs. The disease probably began as an apoplexy, leading to a sclerosis of the ascending parietal lobe, and from thence the sclerosis with its secondary atrophy spread to its present dimensions. The absence of choked disc and the infrequency of headache excluded at all times the existence of a growing tumor or cyst. [E.L.]

The Treatment of the Crises in Locomotor Ataxia.—Hirschkron³ says that although we can scarcely count on a cure or a lasting cessation of the symptoms in tabes, the condition of the patient may be made much more comfortable and the progress of the affection retarded. If possible the diagnosis should be withheld from the sufferer. The patient must be taught to live a quiet life as if he were an old man, avoiding all excesses and excitement. He must also guard constantly against cold. Hirschkron deprecates the rest cure for tabes, as it only increases the muscular weakness. No drug has any marked effect on the progress of the disease. Only two exert any influence, ergot and sodium iodid. Hirschkron has not seen any beneficial results from either antiluetic treatment or organotherapy. The aim of the physician therefore should be to ameliorate symptoms. One of the most urgent of these is the lancinating pain, for the relief of which Hirschkron prefers the coal-tar antipyretics, and has had especial success with citrophen in doses of two or three grams daily. The long continued use of the bromids is also beneficial. Salicylates are sometimes of value, especially in cases following exposure to cold. Very frequently the pains are reflex from irritation of the anus by a chronic eczema. In this condition he recommends a proprie-

¹ Gaz. hebd. de Méd. et de Chirurgie.

² American Practitioner and News, September 15, 1902.

³ Buffalo Medical Journal, November, 1902.

¹ Psychological Review, May, 1902.

² Wiener klin. Wochen., September 18, 1902.

³ Therap. Monthly, April, 1902, p. 127.

tary ointment called Analon, composed of astringents, antiseptics and ichthyol. Various external measures are useful for the relief of ataxic pains. Wet pack at a temperature of 18° C. or a half bath at 28° C. are of value in different cases. Sometimes the local use of ethyl chlorid spray will check the pains. A very valuable mode of applying heat is by the use of ichthyol mud. The patient is laid on an old blanket, a piece of mull wrung out of a warm 30% ichthyol-glycerin solution is placed over the aching spot and the whole part wrapped in a sort of poultice made of ichthyol mud between two sheets, and the whole well covered to keep it warm. In the visceral crises the only thing of value is a hypodermic injection of morphin, which is better given in a single dose sufficiently large to control the pain than to be forced to repeat it. A combination of morphin with the bromids, as in the following prescription, is very useful:

Sodium bromid	40 grains
Potassium bromid	40 grains
Morphin hydrochlorate	½ grain
Syrup	4 drams
Distilled water, enough to make	6 ounces

One tablespoonful every 2 or 3 hours. [H.C.W.]

Prognosis in Neurasthenia.—The observations of Bradley¹ are based on the study of 104 cases of neurasthenia occurring in a total of 424 cases of nervous diseases of all kinds. Of the 104 patients 64% were females and 36% males. Prognosis, based on the etiology of the disease, is as follows, beginning with those most amenable to treatment: External toxins, overwork, following childbirth or lactation, toxic, sexual excesses, worry, metabolism. The writer calls attention to a point in neurasthenia (applying also, though to a lesser extent, in other neuroses) that he has never seen mentioned in literature, viz., the depressing or inhibitory effect of coffee on the reflexes. Series of tables show that in neurasthenics using three or more cups of coffee daily the knee-jerk was normal in 34%, diminished in 43%, increased in 23%. In those using less than three cups, 54% were normal, 34% increased, 12% decreased. This fact, if coffee causes the greater number of diminished reflexes, may help explain why those cases make more rapid and permanent recovery, the toxic substances present being rendered more soluble by the coffee. [A.G.E.]

State Care of the Insane.—Hurd² discusses the present method of treating the insane in Maryland, and shows that although the county almshouses and county receptacles are in a better sanitary condition, and that the insane therein confined are better cared for than they were five years ago, still these institutions present great defects, and the methods employed are very imperfect. He says that it should be the effort of every physician in Maryland to promote State care, and that there is every reason to believe that the insane of Maryland will not be properly cared for until all the dependent insane are gathered into State institutions. A reception hospital for the reception and treatment for a limited time of alcoholic and nervous border-line cases, and insane cases, is advocated for Baltimore. When the character of the case has been ascertained, the patient may then be removed to the proper institution. Hurd says that the colored insane of Maryland, especially, do not receive good treatment, and that these patients are constantly increasing in numbers. He advocates their treatment in a separate institution in the center of the colored population of the State. In speaking of the criminal insane, a separate building should be erected for the criminal insane and for those who are dangerous. Colonies are recommended for the chronic insane, the epileptic, and the feeble-minded, where they may have manual labor, open-air life, and agreeable environments. [C.A.O.]

Disadvantages of Active Mercurial Treatment of Syphilitic Spasmodic Paraplegia.—E. Brissaud and Pierre Marie³ believe that active mercurial treatment should not be instituted in syphilitic spasmodic paraplegia when at the end of 18 months or 2 years it has become chronic. If used at this time, patients who still walk with difficulty sometimes lose this power and are forced to be confined to their beds, the move-

ments of flexion of the lower limbs becomes worse and sometimes are totally lost; parasthesias and paralyzes of the upper extremities at times appear and the general nutrition of the patient is decreased. At the very beginning of the affection, when there is still only slight difficulty in walking and slight feebleness in flexing the legs, active treatment may be employed. [L.F.A.]

The Diagnosis of Neurasthenia.—The diagnosis of neurasthenia is frequently made in cases of paralytic dementia, dementia præcox, mild mania, and melancholia, and to prevent further errors of this kind, Kraepelin¹ carefully discusses the differential diagnosis of these diseases. He considers neurasthenia a chronic exhaustion of the nervous system, brought on by long continued overwork, either mental or physical, by accumulations of the poisons of fatigue, alcohol, morphin, debilitating disease with incomplete recovery, sudden and violent mental shock. In many cases an inherited predisposition to it exists. [E.L.]

Some Mechanotherapeutic Measures Useful in Locomotor Ataxia.—Hirschkrone² believes that baths are very useful in tabes, not by producing any anatomic cure but on account of their sedative action. Highly concentrated salt solutions or excessive temperatures are to be avoided; the temperature should be from 30° to 32° C., and the time not over 15 minutes. Sweat and steam baths should be employed only in the early stages; brine and carbonic acid baths are useful when there is debility or anesthesia. The dry electric brush is also useful for the anesthesia or paresthesia. The results of the suspension treatment are not so brilliant as at one time claimed, although it sometimes affords considerable relief. True suspension, as recommended by Charcot, is often dangerous, and he has abandoned it. A useful means of applying the suspension principle is to place the patient on an inclined plane and employ weight traction, as in fractures of the leg. Another ingenious method is by bending the body forward. The use of corsets which support the shoulders from the hips is frequently grateful, perhaps by a sort of suspension effect. [H.C.W.]

Tumor of the Fourth Ventricle.—Bruening³ reports the case of a boy of 3 years, who two months prior to his death fell from a chair, striking his head, and from then complained of frontal and occipital pain, vomited frequently, and lost weight. He occasionally cried out loudly; a peculiar percussion note was elicited by striking over the occiput, and there was a slight general tremor. He held his head spastically to the left, and later downward on the chest; his gait was ataxic. Numerous other peculiar symptoms existed at times, but no symptoms seemed constant until toward the end of the disease, when an acute hydrocephalus developed, and all reflexes became increased; strabismus and nystagmus appeared. A few days later he became paralyzed and comatose; repeated attempts at lumbar puncture failed, no fluid being aspirated. A diagnosis of tumor was made, but neither its character nor location could be agreed upon. The autopsy revealed a degenerating ependymal glioma the size of a hen's egg springing from the floor of the fourth ventricle. The author has collected 33 cases of tumor of the fourth ventricle from literature, and but 6 were in children; 4 were boys and 2 were girls; none of them was tuberculous. In 2 cases traumatism was the exciting cause, 1 followed varicella; in 3 the cause was not determined. The most characteristic symptoms were the negative lumbar punctures, the tumor occluding the communication with the subarachnoid space of the spinal cord, and the spastic inclination of the head down to the chest. [E.L.]

Treatment of Infantile Epilepsy.—Méry,⁴ in discussing the treatment of infantile epilepsy, states that when the attacks are preceded by an aura they may sometimes be prevented by the application of a ligature or blister on the part which is the seat of the aura. When the attacks follow each other in rapid succession, an active purgation, by relieving cerebral congestion, at times lessens the severity of the attacks. These procedures, however, are only palliative. To prevent the return of the attacks, potassium bromid gives the best results, espe-

¹ Medical Bulletin of Washington University, January, 1903.

² Therap. Monthly, April, 1902.

³ Maryland Medical Journal, February, 1903.

⁴ Journal des Praticiens, Vol. xvi, No. 12, 1902, p. 188.

¹ Münchener medizinische Wochenschrift, October 7, 1902.

² Therap. Monthly, April, 1902.

³ Jahrbuch für Kinderheilkunde, 1902, Vol. lv, p. 647.

⁴ Journal des Praticiens, Vol. xvi, No. 10, 1902, p. 153.

cially when the chlorids in the diet are lessened to about $\frac{2}{3}$ of the normal amount. The average dose of potassium bromid for a child is from 80 to 75 grains daily, although this may be decreased when the chlorids in the food are diminished. [L.F.A.]

The Spasmodic Form of Syringomyelia.—Guillain¹ showed three cases of spasmodic syringomyelia before the Medical Society of Paris, and referred to two others on which he had made postmortem examinations. The following symptoms are peculiar to this form: The attitude of the patient is characteristic, the arms hang alongside the trunk, the forearms are flexed on the arms, the shoulders are elevated, the head depressed. The outer border of the trapezius projects forward, showing marked depression in front of it, the back is curved; the entire attitude gives the impression of rigidity. The last three fingers of the hand are flexed progressively in the palm; the index finger and thumb remain apparently normal for a much longer time, and are used by the patient in the manner of a pair of forceps. The patient's disturbances of motion and gait do not depend upon muscular atrophy, but upon the spasmodic and contracted state of his muscles. All the reflexes of the lower extremities are exaggerated; ankle clonus is easily demonstrated; the toes extend when the plantar surface is irritated. Disturbances of the bladder are present, such as painful contraction of the muscle, urinary retention, painful micturition, hematuria, cystitis, sometimes ulceration of the bladder. Death results from uremia, exhaustion, or intercurrent affection. In both studied cases, extensive destructions of the cervical cord, degenerations of the lateral pyramids of both sides along the entire cord, a condition which does not occur in the ordinary variety of syringomyelia, were present. Guillain says that it is impossible to clinically differentiate between cervical pachymeningitis and spasmodic syringomyelia. [E.L.]

Raynaud's Disease.—Souques presented to the Société Médicale des Hôpitaux, June 6, 1902,² a man of 28 years who for five years had suffered from crises characterized by local cyanosis of the extremities, particularly of one hand, sometimes of both. These crises, habitually provoked by the sensation of cold, were accompanied either by anesthesia or by sharp pain; during the paroxysm the local temperature was lowered from 1° to 5° C. Examination of the subject demonstrated the existence of hysteric stigmata, and a cure was effected by indirect suggestion, a pill of methylene-blue being prescribed and the patient told that the blue coloration of his hands would pass away in the urine, from which time the coloration and temperature of the extremities remained normal. [C.S.D.]

Treatment of Neuralgia.—Bernard³ states that he has cured many cases of neuralgia, and especially sciatica, by the subcutaneous injection of artificial serum at the level of the painful points. The following solution is usually employed:

Sodium chlorid	75 grains
Sodium sulfate	3 ounces
Distilled water	1 quart

This should be carefully sterilized and 1 dram of it injected daily beneath the skin at each painful point. In sciatica, when the pain is felt in the region of the buttocks, the injection should be given deeply into the tissues. The injection would should be closed by collodion to avoid infection. Good results have followed this treatment in intercostal and facial neuralgia. [L.F.A.]

Contribution to the Anatomy and Physiology of the Cerebellum.—Since the various investigators differ in the description of the degenerative process after cerebellar lesions, Probst⁴ seeks to verify their statements. Numerous experiments were performed by him on different animals, lesions being produced in different portions of the cerebellum. The animals were closely observed before and after the operation, and he describes their antemortem behavior as carefully as the postmortem findings. To determine the extent of the lesions, the anatomic and pathologic condition of the tracts leading to and from the points of lesion, and the terminal points of the

degeneration, very careful histologic examinations were made by securing uninterrupted serial sections. The stain used was Marchi's osmic acid stain as modified by him. The description of the details of the experiments is lengthy but interesting, and the conclusions are summed up at the end of the article. [E.L.]

Antipyrin in Chorea.—Comby¹ has had good results from antipyrin in chorea. It is necessary to give very large doses. For a child of 10 he uses a dram a day. To avoid accidents from the drug he enjoins rest and the free drinking of water. [We should think that despite these precautions such heroic doses would be very dangerous. H.C.W.]

Sodium Cacodylate in Mental Diseases.—Paulet² reports the use of sodium cacodylate in place of other arsenical preparations in 17 patients suffering from certain mental diseases. Of these 13 were personal observations. Of the 17 cases 2 have given absolutely negative results, 4 have given a good result from the physical point of view without mental improvement; 11 have shown more or less marked mental and physical improvement. In some cases the improvement may justly be called a cure. The cacodylate should be given in doses of not over 2 grains daily, preferably beginning with doses of $\frac{1}{2}$ of a grain daily and gradually increasing it. After giving the drug for eight days there should be a similar period of rest in order to avoid toxic effects. [L.F.A.]

THE PUBLIC SERVICE

Changes in the Medical Corps of the U. S. Army for the week ended February 23, 1903:

KENNEDY, Captain JAMES M., assistant surgeon, is granted leave for one month, with permission to apply for an extension of one month.
WOOD, HALSEY L., contract surgeon, will proceed to Fort Wright for duty, to relieve Contract Surgeon John C. Byrne, who will proceed to Fort Flagler for duty.
MASON, Major CHARLES F., surgeon, will rejoin his proper station not later than February 23.

Changes in the Medical Corps of the U. S. Navy for the week ended February 23, 1903:

FIELD, J. G., surgeon, detached from duty with recruiting party, and ordered to the Bennington—February 20.
HART, G. C., acting assistant surgeon, ordered to duty with recruiting party—February 20.
ROSS, J. W., surgeon, appointed medical director from February 5, 1903—February 21.
DEVRIES, J. C., acting assistant surgeon, appointed acting assistant surgeon, February 16, 1903—February 21.
MARSTELLER, E. H., surgeon, ordered to the Panther, via the Raleigh—February 24.
PRICE, A. F., medical director, detached from the Naval Hospital, Washington, D. C., and ordered to the Navy Yard, New York—February 24.
WILSON, G. B., surgeon, detached from the Panther and ordered to the Naval Hospital, Chelsea, Mass.—February 24.
STOKES, C. F., surgeon, detached from the Oregon and ordered home to wait orders—February 24.
WRIGHT, B. L., assistant surgeon, detached from treatment at the Army General Hospital, Fort Bayard, N. M., and ordered to the Naval Hospital, Pensacola, Fla., for treatment—February 24.
SCHWERIN, L. H., acting assistant surgeon, ordered to duty with recruiting party, No. 4—February 24.

Changes in the Public Health and Marine-Hospital Service for the week ended February 26, 1903:

KERR, J. W., assistant surgeon, to report at Bureau for special temporary duty—February 21, 1903.
WARREN, B. S., assistant surgeon, granted extension of leave of absence, on account of sickness, for thirty days from March 1—February 24, 1903.
ROSS, M. H., acting assistant surgeon, relieved from duty at Cairo, Ill., and directed to proceed to Los Angeles, Cal., and report to medical officer in command for duty—February 24, 1903.
SAMS, F. F., acting assistant surgeon, granted extension of leave of absence, on account of sickness, for thirty days from February 17—February 24, 1903.
RICHARDSON, S. W., pharmacist, granted leave of absence for seven days from February 21, 1903, under provisions of paragraph 210 of the regulations.
THURSTON, E. J., pharmacist, to report to chairman of board for physical examination to determine fitness for promotion to the grade of pharmacist of the first class—February 24, 1903.
MORRIS, G. A., pharmacist, granted extension of leave of absence for seven days from February 18—February 24, 1903.

¹ Med. Press, June 18, 1902, p. 653.

² Journal des Praticiens, Vol. xvi, No. 2, 1902, p. 23.

¹ Bull. de la Société Med. des Hôpitaux de Paris, 1902, Vol. xix, p. 350.

² La Semaine Médicale, June 11, 1902.

³ La Revue Médicale, Vol. v, No. 36, 1902, p. 463.

⁴ Archiv für Psychiatrie und Neurokrankheiten, 1902, Vol. xxxv, p. 692.

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Should Diphtheria Antitoxin, etc., be Inserted in the Pharmacopeia?—The Committee on Revision of the Pharmacopeia has under advisement the question, most difficult to decide, as to admitting diphtheria antitoxin, serums, vaccine, etc., to the new edition of the Pharmacopeia. In seeking a decision the fact is manifest that therapeutics has now entered upon a phase not contemplated by the materialistic medicine of the past. The Pharmacopeia is designed to establish standards of identity, purity, etc., in the drugs used in practice. So long as those drugs were inorganic or capable of chemie analysis, this was possible. Within a few years, however, we are using as therapeutic agents the products of living tissues, intensely unstable, and necessarily variable, which admit of no analysis, and almost of no tests of identity, purity, etc. What, then, shall be done? If they are excluded from the Pharmacopeia this work represents but a part of our therapeutic agents. If included, the fundamental principle on which the Pharmacopeia is built is destroyed. There is no doubt as to the value of the diphtheria antitoxin in the treatment of the disease, but a phial of it cannot be tested and then sold (except to be used immediately), and even if it could, the test of one phial could not be made to hold for another; and, lastly, there is no definiteness as regards the length of time during which the stability, etc., could be guaranteed. We think that the conclusion of the committee will be to exclude such products. If this is done, there seems no outcome except to place the testing and certification of antitoxins, serums, etc., in the hands of either the National Government or the State Boards of Health.

Abolish the coroners' office has been the command of the medical profession for many years, but like many other of its orders, it received but little attention, because there was no unity and organization to force the attention of the politicians and the people. At last Massachusetts did away with the coroner and has never regretted it. A year ago Buffalo, N. Y., did the same, and the abuses of the office at once ceased. The laughers of New York City have for a long time made merry over the continuous farce enacted by its "vaudeville quartet" of coroners. The serious-minded, however, who have been shocked by the failure of justice and the shamelessness of these unworthies, have finally united

and have a chance to rid the city of the blackmail and buffoonery coroner disgrace. A bill supported by the Medical Society, the Association, and the profession generally has been introduced at Albany to abolish the coroner's office and his useless jury in Greater New York. This, if it becomes law, will reduce the expense from \$150,000 to \$60,000 and transfer the duties to the Health Department. The charter of the city will be amended so as to provide a new bureau of the Department of Health, which shall have charge of the verification of the cause of death in suspicious cases. The chief of the bureau shall be a physician who is a skilled and practical pathologist, and who shall be appointed by the Board of Health after a competitive civil service examination. The board may appoint not over 17 medical examiners to be assigned to the districts in the five boroughs. The amended bill transfers the judicial functions of the coroners to the present city magistrates, whose duties are not mixed, but essentially those of judges. Their civil duties are transferred to the City Chamberlain, and the legal duties to the District Attorney, where they naturally belong.

Medical University Extension.—According to a press report from Berlin the country medical practitioner in Germany is to have an opportunity to learn the latest developments in surgery and general medicine from a traveling university that will bring postgraduate instruction to the nearest large town in his vicinity free of charge. Emperor William gave his signature Monday to the plans for this work, which will be paid for by the government and by small contributions from medical societies. Great specialists, such as Professors Lassar, Bergmann, and Rumpf will charge small fees for their services. Professor Lassar already has contributed 1,000 specimens of skin diseases to the museum, which will be carried from place to place with laboratory appliances. The country doctor can thus come to his neighboring city for a week or two once a year and hear the leaders of his profession explain the latest processes for treatment or see celebrated surgeons operate. The idea of the traveling university appears to have originated with the late Empress Frederick, who used to talk with Professor Renvers about it. The Bavarian Government already has made a limited use of the suggestion. In our country there has been a vague attempt to meet this

need in two ways—by the postgraduate school, and through the growing custom of asking leading practitioners to visit and lecture before the medical societies of the smaller towns. It must be confessed that neither nor both of these methods meet the want so effectually and admirably as this of our German colleagues. The country physicians are often, indeed, fully as capable and instructed as their city confreres, but the majority of them, of course, are not so, and there are many reasons why it is impossible for the distant and busy practitioner to attend postgraduate schools. Why should not the medical Mahomets go to the mountains? Is not the plan an excellent one? Would not the profession by these scientific and social meetings profit greatly? And would not the public and the patients also profit?

The medical sanction of marriage has been long demanded, and in several of our States bills have been introduced to make it the law. In only one, so far as we know, North Dakota, is a medical examination demanded to prohibit the marriage of those suffering from venereal disease, tuberculosis, epilepsy, hereditary insanity, and confirmed inebriety. Attempts at similar legislation have been made or suggested in Europe, and our contemporary, *The British Medical Journal*, says that the Spanish Minister of Justice recently mentioned the medical sanction of marriage contracts as a reform to be attempted. Sir Thomas More in his *Utopia* describes the custom of that land to be the exhibition to each other of "those chusing wyfes and husbandes," of the naked bodies of the "wowers," in order that physical blemishes, etc., may be detected before it is too late.

"Not long ago," says our contemporary, "a German physician suggested that the Röntgen rays should be employed to ascertain whether a bride was fit for the chief end of marriage—the reproduction of the species. There would, he says, be no indignity in such an examination, which would be the means of detecting any pelvic contraction that would make delivery difficult or impossible. With what we suppose to be Teutonic jocularity, he suggests that the bride should be required to supply such a radiograph to any suitor for her hand. He thinks this method would be invaluable to members of royal and noble families, to whom the birth of an heir is a matter of great importance."

We had supposed that the fashionable dressing of modish ladies had long since rendered the Röntgen method unnecessary for such ends. But neither jocularity, indifference, nor conservatism can do away with the propagation of the unfit if there are no medical restrictions imposed by the law. It has been gravely said that the medical man's advice privately given is wiser and will prove more effective than any attempt at control by the law. The idea that physicians could exert any influence in this way upon the millions who care nothing for medicine or medical men, or who hate them, is calculated to arouse the derision of the cynical as we watch the unrestricted increase of the defective classes by defective parents. Certainly the law should and must direct such limitation as will stop the procreative *descensus Averni*.

The Nostrum Syndicates and Advertisers as Owners and Supporters of Crazy Literature.—We have lately been at great pains to secure sample copies of the periodicals devoted to fads and crazes, and after glancing over them we are astounded to find how completely they are under the control of the nostrum sellers. A few columns of wild-eyed trumpery serves as the so-called reading portion of the periodical and then follow pages of the moral and mental filth supplied by the advertiser-owner. And of all this stuff not a line would be allowed to appear in a newspaper that had any intellectual or social standing. Perhaps the worst of these frauds are the hypocritically religious ones. Mme. Humbert, it will be remembered, when establishing her insurance company in Paris, "capital ten millions," made her game sure by securing the help of the most vociferously pious of the theological newspapers. No one was so ostentatiously pious as Mme. Humbert while she was ruining her thousand poor victims. So fast as our better journals attain self-respect and exclude the horrors that fill the columns of the yellow newspapers and crazy journals, so fast are the advertisers driven to seek customers among the more degenerate classes. Hence the multiplication of a hundred kinds of cheap serials exploiting the monomanias and driveling follies of daft ignorance. In the reading columns there may be furious antimedicine or mad faddism, while in the intermingled advertising columns bombastic tales of miracles by means of patent medicines abound. That great world, indeed, would seem absolutely medicine-mad. There is some consolation in the thought that these hundreds of periodicals do not represent paying millions of insane subscribers, but only the new method of circularizing the depraved and savages among us to which a lot of "business" scalawags have been driven.

Medical Terminology.—An eminent practitioner recently remarked in a discussion of the problems of medical education that the mere matter of keeping abreast of the terminology of modern medical research is a task in itself; in Prof. Welch's recent Huxley lecture, for instance, he had counted 25 words about which he knew almost nothing. The multiplication of terms necessary to the development of the side-chain theory of immunity; to the new science of hematology; to the correlation of zoologic and embryologic data relating to the transmission of some hitherto obscure diseases, has certainly been unprecedented in the history of medicine. The advances in anatomic knowledge which followed the patronage of the medical sciences of the Italian aristocracy at Padua, Bologna, Pisa, etc., at the period of general scientific renaissance, led to the introduction of a series of eponyms marking the discoveries of Fabricius, Eustachius, Stensen, Malpighi, and others. In its turn the development of physiologic chemistry gave rise to numerous terms, many of which, such as the archæus of Paracelsus, remain only as milestones to the development of the biologic theory, while others, such as gas, introduced by Van Helmont, have become a part of the common property of mankind. There was abundance of time in the infancy of scientific medicine to acquire the verbal symbols necessary to mark the progress of

discovery and theory, whereas at the present time the annual crop of words is simply astounding. Many of these words are the legitimate and necessary accompaniments of new facts, but it is time to call the attention of medical writers to the importance of avoiding the coinage of synonyms. There has scarcely been a fact or structure recently elucidated which has not been buried under a drift of terms. An examination of those used to designate the ultimate physiologic units involved in the building of germ plasma, or those suggested for x-ray effects, for phototherapy, for the effect of cold on organic fluids, for the action of serums, lysins, etc., is sufficient to demonstrate the necessity of some philologic clearing-house, some academy which shall pass on the legitimacy of medical terms.

The Naming of the Synthetic Products.—The complete synthesis of a vegetable alkaloid has recently been accomplished. This alkaloid is *theophyllin*, discovered by Kossel in 1888 in tea leaves and shown to be isomeric with theobromin and to possess the most powerful diuretic properties of any alkaloid of the purin class. Owing to its therapeutic value many chemists became interested in attempts to discover some method for preparing it economically on a commercial scale. This has finally been accomplished, and the fact that the manufacturers have given the synthetic product a special name is a matter of interest, as it is in line with the policy adopted by manufacturing chemists in connection with a large number of products. In the first place the adoption of a copyrighted name in place of the real chemical name of a synthetic product makes it possible to distinguish readily the artificial from the natural product, there being some physicians who think that the synthetic products lack the efficiency of the natural bodies. Another reason for the coining of trade names for medicinal products is the cumbersomeness of the technical name, as for example, *phenylacetamidacetanilid*, and the greater ease with which such a simple synonym may be remembered. The chief object, however, undoubtedly lies in the protection afforded the firm which first exploits any given synthetic product, since, having established its use under a protected name, it becomes almost impossible to supplant it with the same product under its proper designation. This leads to further trouble in that competing firms hasten to put out the same drug under new copyrighted names until the practitioner finds himself puzzled by the many guises under which a valuable product may be paraded by rival medical concerns. From some standpoints there is little to choose between a medicine that is patented and a medicine the name of which is copyrighted. The professions of pharmacy and of medicine must some time grapple with this problem, however complicated it may be and however hopeless may at first appear its solution.

The "steady drinker" is the man against whom the temperance and the prohibition parties may and should unite their forces. There are many who think the scientific conclusions from Professor Atwater's experiments are scientifically true, and yet they do not

believe that steady drinking is either necessary or good. Alcohol may under some circumstances be a food, but the fact does not demonstrate that it is the best food, or even a good food, or that it is to be used every day. That kind of "science" which says that as to alcohol individuals must take care of themselves, learn wisdom and moderation, etc., is not true science because it leaves out of view many facts that modify or neutralize such a partial view. Sociologic and benevolent facts are as much scientific as are physical and physiologic ones. The French scientist, Berthelot, as regards legislation against alcoholism, said, "I do not see that much can be done until the human species becomes wiser and more master of itself." He should have recognized that he himself belongs to the "human species," and he might with profit have begun with himself. The steady degradation of his nation in many ways, largely consisting in and due to the "steady drinker," is a demonstration of the fallacy of M. Berthelot's contention.

The "steady drinker" in France, it seems plain, is bringing on himself and on his nation the inevitable ruin that comes from too steadily used and too much used alcoholic "food." It is a "far cry" from the use by physicians of alcohol temporarily and when wise, to the folly and sin of its use by the "steady drinker." In time he gets very unsteady. Witness France! Since 1874 no special license has been required for selling liquor, and the number in the trade has doubled. The elections depend upon the liquor dealers. A union of dealers entered suit in the courts against the Prefect of the Seine for an antialcoholic placard. The liquor unions get up placards on their side rehearsing the merits of alcohol as a food as proved by American scientists. In Normandy the baby is given alcohol at the christening, and thenceforward "to kill worms." When the worms no longer serve as an excuse the drinking goes on all the harder. In the Department of the Eure the adult citizen consumes 96 liters of brandy (50° alcohol) a year, *i. e.*, about 10 drinks a day. There is 1 liquor dealer to every 23 people. A well-paid workingman was found to spend 84 cents for drink and 22 for food. Before 1870 an equal population of the Eure consumed 20,000 hectoliters of drinkable alcohol; in 1880 the amount was 30,000; in 1890, 56,000. Per head of population the average consumption has mounted from 7 to 16 liters—alcohol at 100°. In the last century the average mortality of France fell from 25 to 23 per 1,000 inhabitants; in the Eure it has risen from 22 to 26. Fifty years ago there were 12 suicides to the 100,000 inhabitants in that country province; now there are 46 as against 22 for the rest of France. In other ways the progress—downward—is still more headlong. In 1890 there were 40 lunatics in the asylum of Evreux; in 1898, without any change of system, there were 200.

Convict Insane in Hospitals.—In his 1902 Report of the New Jersey State Hospital Dr. Evans renews his recommendation that the criminal insane should be removed from the State hospitals. It seems strange that such advice should be needed and that the Legislature should so long leave it unheeded. In how many States

does this most reprehensible custom obtain? In New Jersey at the end of 1902 there were 65 convicts and 33 criminals in the Mt. Morris Hospital, and in all 217 convicts and criminals have been transferred to the hospital by order of the courts. What a political and moral blunder! Dr. Evans wisely says that to those patients who realize that in their affliction and loss of liberty they are kept in the same building with convicts of the vilest sort, the effect is to bring about feelings of dissatisfaction, humiliation and resentment, and in many instances improvement and recovery are retarded if not made impossible. State hospitals are not so constructed as to make the detention of convicts secure, and many of them escape in spite of vigilance and the best efforts. They then return to lives of crime until again apprehended. It is therefore clear that in attempting to keep them in the State hospitals a gross injustice is done, not only to all other patients forced in some degree to associate with them, but the public generally suffers from the escape of dangerous criminals.

The Essential Life Substance.—The iatrochemist has ever sought to trace the phenomena of life to a single essential upon which might be shifted the responsibility previously imposed upon the anima, the archæus, or the blas of early writers. A Chicago savant recently elevated certain sodium salts to the supreme position in the determination of protoplasmic activities. Another writer finds abundant reasons for the belief that the *succus nervus* has been demonstrated to exist in an enzyme secreted by the pancreas, while Sacharoff hypothesizes a substance which he terms *bionuclein*, a combination of iron and nuclein, existing in all enzymes and essential to those decompositions of protoplasm from which all vital processes arise. It is to the iron in this combination that its potency belongs. All vital phenomena, according to Sacharoff, are due to the oxidation of iron. In general, the trend of such pseudophilosophies is to confound the means or instruments of the life-principle with that principle itself. There is a multitude of instrumentalities without any one of which the phenomena of life cannot be manifested—nutrition, carbon, heat, motion, etc. Put them all together and shake them to eternity and *omne vivum ex vivo* is not disproved.

EDITORIAL ECHOES

Professional Unselfishness.—It might almost seem to a philosophical observer as if the leaders in this movement had unselfishly made up their minds to prove to men and women that if they had more common sense they would promptly abolish the medical profession by taking away its *raison d'être*. One seldom hears of a lawyer exhorting his neighbors to avoid litigation so that they may not require his services. Yet every reputable physician is expected not only to cure diseases, but to give his patients such hygienic advice as may prevent them from needing him again. This is a good deal to expect of human nature in individual cases; but the problem which is at the present moment most strenuously attacked by the medical men of Europe and America is how to reduce the number of their patients and the amount of their own income by 10% at one fell swoop. At least one person out of every ten dies of pulmonary tuberculosis and other forms of tuberculosis,

and it is this disease that physicians are now striving with all their might to exterminate utterly, or at least to limit as much as possible. Since tuberculosis is rarely contracted by the medical practitioner, his labors in striving to eliminate it from his practice accordingly stand as a remarkable exemplar of humanitarian altruism.—[*N. Y. Evening Post.*]

A Case of Christian Science.—Dr. Lorenz, a member of the Medical Society of Vienna, Austria, having acquired fame in his successful setting of dislocated bones without the use of the knife, was called by a wealthy man in Chicago to come and restore to his crippled child the use of her limb. He came and performed the operation successfully and received presumably a very large fee for his highly appreciated service. He could doubtless in the few weeks of his stay in America have reaped thousands upon thousands of dollars in operating upon the crippled children of wealthy parents had he so chosen. Instead of this, he chose to go from one large city to another and offer to give free clinic operations on children of the poor, or any needing his help, for the benefit of the medical and surgical students who would come and learn, free of all expense, his bloodless method of cure. Courtied by the highest medical and civil authorities, and the recipient of unbounded praise and gratitude, Dr. Lorenz has in reply only modestly to refer to the excellent medical society of which he is a member, to the ease with which his method of cure may be learned and practised by others, and his great desire to use every opportunity freely to give relief to the suffering, and to impart this information to those who will use it to the same end. Is not this a case of true Christian Science?—[*The New Church Messenger.*]

The Medical College Statistics for 1902.—One hundred and fifty-six medical colleges, with 6,776 instructors, enrolled 27,501 students and graduated 5,002 students in the school year 1901-1902. In the year previous, 1900-1901, 156 colleges, with 5,958 teachers, enrolled 26,417 students and graduated 5,444. Twenty years ago there were 89 medical schools with 14,934 students and 4,115 graduates. The increase in the number of schools and students is far in advance of the increase in the number of graduates. The graduates twenty years ago were 4,115; in 1900, 5,314; in 1901, 5,444, and in 1902, 5,000. The attendance in twenty years has, therefore, increased nearly 200%, and the number of graduates has increased less than 25%. The decrease in the number of graduates in the last year is assigned to the increased length of course of study and increased requirements by State boards. It is considered by many a temporary decrease and one that will be changed to an increase as soon as the temporary check is overcome. The decrease in graduates is classified thus: There were 4,879 graduates from the regular colleges in 1901; 387 from the homeopathic; 148 from the eclectic, and 30 from the physiomedical and nondescript; total, 5,444. In 1902, 4,498 graduated from regular schools; 336 from the homeopathic; 138 from the eclectic, and 27 from the others; a decrease in every class. The increase in students is classified thus: There were 23,846 students registered at the regular colleges during the year ending July 1, 1901; 1,683 at the homeopathic; 664 at the eclectic, and 224 at the physiomedical and nondescript; a total of 26,417. During the year ending July 1, 1902, 24,878 students registered at the regular colleges; 1,617 at the homeopathic; 765 at the eclectic, and 241 at the physiomedical and nondescript; total, 27,501. This is an increase among all but the homeopathic schools. In the year the regular schools increased in enrolment 1,032 and decreased in number of graduates 381. The homeopaths lost in enrolment 66 and in graduates 51; the eclectics gained in enrolment 99 and lost 10 in graduates; all other schools gained 17 in enrolment and lost 3 in graduates.—[*Jour. Am. Med. Asso.*]

BOOK REVIEWS

International Clinics.—Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, U. S. A., etc. Vol. iv. Twelfth series, 1903. J. B. Lippincott Company, Philadelphia.

This volume well maintains the interest and standard of the series. So many and so varied contributions in one volume do not well lend themselves to critical review; we can only call a few titles. The first paper, on "The Sanitary Tent and Its Use in the Treatment of Pulmonary Tuberculosis," by Chas. Gardner Fox, is eminently sound and practical and describes a useful device. Perfect ventilation is its keynote. The last paper, a monograph of 96 pages, on "The Blood in Health and Disease," by Thomas R. Brown, gives a clear, definite, full and judicial presentation of the status at the moment of one of the most important questions of clinical and pathologic research. There is a short sketch of Dr. W. W. Keen. A paper on "Pernicious Anemia, with Extensive Pigmentary Changes in the Skin," exhibits the characteristic accuracy and painstaking, the erudition, and the sound judgment of its lamented writer, the late Frederick A. Packard. W. G. Spiller gives a masterly study of "Traumatic Lesions of the Brain in Their Relation to Operation." A. O. J. Kelly has well set forth some of the clinical aspects of thoracic aneurysm, and so we might go on mentioning good articles by good men.

Diseases of Infancy and Childhood.—By HENRY KOPLIK. Published by Lea Brothers & Co., New York and Philadelphia.

It cannot be denied that graduates of medicine go out from our best medical schools and even from the average hospital with far less accurate knowledge of the diseases incident to infancy and childhood than of those confined for the most part to adult life. Dr. Koplik has contributed to medical literature a splendid volume of almost 700 pages, which is especially designed for the student and the practitioner. In this work the author gives explicit directions and instructions, the results of his own experience together with that of the most advanced men in this branch of medicine in both America and the countries abroad. The reader is not befogged with numerous theories but is given information direct and succinct. The numerous illustrations and colored plates add greatly to the value of the work. All the diseases of childhood are arranged and discussed with that thoroughness and at the same time terseness which is characteristic of the author. Special consideration is given to the subject of infant-feeding. The whole work is a splendid discussion of the entire subject-matter under consideration.

Progressive Medicine.—Edited by HOBART AMORY HARE, M.D., of Philadelphia, assisted by H. R. M. LANDIS, M.D. Volume iv, December, 1902. Lea Brothers & Co., Philadelphia and New York.

This, the concluding volume for 1902, is fully abreast of the others of the series in literary merit and practical utility. It comprises a digest of the recent literature on diseases of the digestive tract and of the liver, pancreas, and peritoneum, by Max Einhorn; anesthetics, fractures, dislocations, amputations, surgery of the extremities, and orthopedics, by Joseph C. Bloodgood; genitourinary diseases, by William T. Belfield; diseases of the kidneys, by John Rose Bradford; physiology, by Albert P. Brubaker; hygiene, by Charles Harrington; and a practical therapeutic referendum, by E. Q. Thornton. On the whole, inasmuch as important additions to the literature of each of the foregoing subjects is fully covered, the volume will doubtless command the approbation of those that have used its predecessors to advantage.

Physiology.—By THEODORE C. GUENTHER and AUGUSTUS E. GUENTHER. Edited by V. C. PEDERSEN. Published by Lea Brothers & Co., Philadelphia and New York.

This is a manual of some 240 pages, with numerous illustrations. It covers briefly, clearly and comprehensively the principal subdivisions in the subject of human physiology. It is especially adapted to the needs of students of medicine and to those wishing to make a hasty review of the essential points

in physiology. At the end of each chapter is a series of questions relating to the subject-matter just discussed. The authors make no claim to exhaustive and complete discussion, and the work is therefore eminently suited to those who desire to refresh their memories in the essentials of the subject discussed.

A Clinical Study of an Epidemic of Cerebrospinal Meningitis: With Special Reference to Symptomatology and Treatment.—By J. RUTTER WILLIAMSON, M.D. Thacker, Spink & Co., Calcutta, 1902.

This brief monograph of 27 pages, though not exactly what the title indicates, is a valuable contribution to the literature of the disease in question. It is made up of an amazing number of statements from other writers on the subject, interspersed with the author's personal observations. The arrangement into short paragraphs with definite headings makes easy both reading and reference. The articles may be summed up as a great deal of information well arranged but containing little that is new.

A Compend of the Diseases of Children.—By MARCUS P. HATFIELD. Published by P. Blakiston's Son & Co., Philadelphia.

This little volume of more than 200 pages contains in terse and succinct form a short discussion on the various diseases incident to childhood. It is especially designed for the use of students in medical colleges, and makes no pretense to a full and comprehensive discussion of the subject-matter. It is admirably adapted to the purposes for which it was designed, and as evidence of its continued popularity this, the third edition, is now put forth. We can heartily commend it to students of medicine.

BOOKS RECEIVED.

[Prompt acknowledgment of books received will be made in this column, and from time to time critical reviews will be made of those of interest to our readers.]

Surgical Diseases of the Kidney and Ureter: Including Injuries Malformations and Misplacements.—By HENRY MORRIS, M.A., M.B. (Lond.), F.R.C.S., Vice-president and Chairman of the Court of Examiners of the Royal College of Surgeons; Senior Surgeon to the Middlesex Hospital; Honorary Member of the Medical Society of New York. Two vols., 8vo, 600 pages each, with two colored plates and numerous illustrations. Cloth, \$12.00 net. W. T. Keener & Co., Chicago, 1903.

Therapeutics of Infancy and Childhood.—By A. JACOBI, M.D., LL.D. Third edition. J. B. Lippincott Company, Philadelphia and London, 1903.

Diseases of the Skin: Their Description, Pathology, Diagnosis, and Treatment, with Special Reference to the Skin Eruptions of Children and an Analysis of 15,000 Cases of Skin Disease.—By RADCLIFFE-CROCKER, M.D. (Lond.), F.R.C.P., Physician for Diseases of the Skin in University College Hospital; Honorary Member of the American Dermatological Society; late Physician to the East London Hospital for Children; Examiner in Medicine, Apothecaries' Hall, London, etc. Third edition, revised, rewritten, and enlarged. With 4 plates, 2 of which contain 12 colored figures and 112 other illustrations. Octavo, 1,400 pages. Cloth, \$5.00; sheep, \$6.00 net. P. Blakiston's Son & Co., Philadelphia.

Practical Hygiene: A Manual of Practical Hygiene for Students, Physicians, and Health Officers.—By CHARLES HARRINGTON, M.D., Assistant Professor of Hygiene in the Medical School of Harvard University. New (second) edition, revised and enlarged. In one octavo volume of 755 pages, illustrated with 113 engravings and 12 full-page plates in colors and monochrome. Cloth, \$4.25 net. Lea Brothers & Co., publishers, Philadelphia and New York.

Tuberculosis.—By ADDISON W. BAIRD, M.D. Popular presentation of the subject, with 30 illustrations. February, 1903. Publisher, James T. Dougherty, New York City.

Index Catalogue of Medical and Veterinary Zoology: Part 2 [Authors B to Buxton].—By CH. WARDELL STILES, Ph.D., Consulting Zoologist of Bureau of Animal Industry; Zoologist of U. S. Public Health and Marine-Hospital Service, and ALBERT HASSALL, M.R.C.V.S., Acting Assistant Zoologist of Bureau of Animal Industry. Government Printing Office, Washington, 1903.

A Textbook of Practical Medicine: For the Use of Students and Practitioners.—By WILLIAM GILMAN THOMPSON, M.D., Professor of Medicine in Cornell University Medical College; Physician to the Presbyterian Hospital, Bellevue Hospital, etc., New York. New (second) edition, thoroughly revised. In one octavo volume of 1,104 pages, with 62 illustrations. Cloth, \$5.00; leather, \$6.00; half morocco, \$6.50 net. Lea Brothers & Co., Philadelphia and New York.

Physical Chemistry for Physicians and Biologists.—By Dr. ERNST COHEN, Professor of General and Inorganic Chemistry in the University of Utrecht. Authorized translation from the German by MARTIN H. FISCHER, M.D., Instructor in Physiology in the University of California. Henry Holt & Co., New York, 1903.

Obstetrics: A Textbook for the Use of Students and Practitioners.—By J. WHITRIDGE WILLIAMS, Professor of Obstetrics, Johns Hopkins University; Obstetrician-in-Chief to the Johns Hopkins Hospital; Gynecologist to the Union Protestant Infirmary, Baltimore, Md. With 8 colored plates and 630 illustrations in the text. D. Appleton & Co., New York and London, 1903.

AMERICAN NEWS AND NOTES.

GENERAL.

Smallpox as officially reported in the United States from December 27, 1902, to March 6, 1903, amounts to 10,621 cases with 326 deaths, as against 20,054 cases and 616 deaths for the same period in the year previous.

Plague Abating at Mazatlan.—One or two deaths daily are reported from the disease, but for the past few days no new cases have occurred. The authorities are doing everything in their power to stamp out the disease, and have burned about 500 houses, with all their contents.

Revision of the Pharmacopœia.—The work of revision, which has thus far occupied three years, will not be completed before next October. Bacteriologists representing the State Boards of Health of Pennsylvania, New York, and Massachusetts, the Army and Navy, and two firms in Philadelphia and Detroit which manufacture diphtheria antitoxin met recently in Philadelphia to discuss the advisability of inserting the antitoxin in the Pharmacopœia. Since its discovery three years ago the proportion of deaths from the disease has been reduced from 35% to 5%.

The Committee on Prophylaxis of Venereal Diseases, appointed at the 1902 meeting of the American Medical Association, has organized as follows: Dr. Henry D. Holton, chairman, Brattleboro, Vt.; Dr. Ludwig Weiss, secretary, 77 East Ninety-first street, New York City; Dr. George M. Kober, 1600 T street, Washington, D. C.; Dr. W. H. Sanders, Montgomery, Ala.; Dr. L. Duncan Bulkley, 531 Madison avenue, New York City; Dr. Frank H. Montgomery, 100 State street, Chicago, Ill. The committee desires the support of the medical profession and solicits expressions and views editorially and otherwise. The committee would be glad of personal correspondence from those supporting the movement and who will contribute by papers, etc., in case the House of Delegates should favor the holding of a congress similar to the International Conference for the Prophylaxis of Venereal Diseases, which met in Brussels under the auspices of the Government of Belgium.

Communicable Diseases.—The Conference of the State and Provincial Boards of Health of North America has received the report of the committee appointed to prepare a list of diseases believed to be communicable and dangerous to the public, and which members of health boards may properly prevent or endeavor to restrict. The prepared list embraces the following:

Actinomycosis (lump jaw), ankylostomiasis (tropical anemia), anthrax, beriberi (epidemic neuritis), bubonic plague, chickenpox (varicella), cholera Asiatic (cholera, epidemic cholera), diphtheria (croup, membranous croup), epidemic cerebrospinal meningitis (spotted fever), epidemic dysentery, erysipelas, German measles (rôtheln), glanders, gonorrhœa, hydrophobia (rabies), influenza (grip), leprosy, malaria (intermittent, remittent, or pernicious fever), measles (rubeola, morbilli), mumps (epidemic parotitis), pneumonia (lobar or croupous pneumonia), puerperal fever (puerperal septicemia), scabies (iteh), scarlet fever (scarlatina, canker rash), smallpox (variola, varioloid), syphilis, tetanus, trachoma, trichinosis, tuberculosis, typhoid (enteric) fever, typhus (ship) fever, uncinariasis, whoopingcough (pertussis), yellow fever.

EASTERN STATES.

Korean Twins May be Separated.—After a Röntgen ray examination of the Korean twins with a view to ascertaining if it would be safe to attempt their separation, it has been decided by the medical scientists having the case under consideration that no vital structures prevent the separation of the twins. Each twin is normally formed so far as the integrity of his own body is concerned, and they have in common only the flesh and cartilaginous connection which unites them at the base of the sternum.

Epidemic of Diphtheria at Morristown, N. Y.—It is reported that an epidemic of diphtheria has prevailed for the past three weeks in Morristown. Twenty cases have occurred with five deaths, and many patients are in danger from the disease. Ogdensburg is furnishing assistance in the way of trained nurses and physicians. It is stated that children infected with diphtheria have attended the schools in which many pupils were present and it is probable that many more serious cases will result before the epidemic is under control.

Typhoid Disappearing in Massachusetts.—Vital statistics show that the number of deaths from typhoid fever in Massachusetts in 1901 is smaller than in any single year since the beginning of registration in 1842, when the population of the whole State was no larger than that of Boston and immediate suburbs today. Figured in percentage the deathrate, from this disease, in 1901 in 33 cities is only a trifle more than one-fourth as large as it was in the same cities 30 years ago. In the decade ending 1865, only 25% of the population used water over which the authorities exercised control, and the deathrate from typhoid fever in those years was 92.9 per 100,000 inhabitants. Ten years later 41% of the population had public water and the deathrate decreased to 80 per 100,000. Thus the deathrate decreased with the extension of the public water system

until in the year ending in 1901 90% of the Massachusetts people were supplied through well-kept public water systems and the deathrate was only 19.5 per 100,000. Water supply improvements still continue.—[*Boston Transcript.*]

Massachusetts State Association of Nurses.—An association composed of the graduate nurses of Massachusetts has been formed for their mutual protection and advantage and also for the protection and advantage of the public in securing good nurses for the sick. It is announced that strenuous endeavor will be made by the Association to secure through legislation State registration of nurses in the same manner that registration of physicians is required. It is proposed that all persons desiring to be recognized as thoroughly trained nurses shall be required to pass a prescribed examination before an official board of experts.

Low Birthrate in Massachusetts.—According to the *Boston Transcript*, Massachusetts has for some years had an extremely low birthrate, and the year just passed shows no improvement. The rate, calculated on the estimated population of 2,870,710, is only 25.07 to 1,000 of the living population, less than that of the previous year, and the least since 1882. The marriage-rate of 8.67 to 1,000 (or when reckoned by persons married, instead of by marriages, 17.34 to 1,000) is scarcely more encouraging, for it is less than the rate of the previous year, and shows a decrease of .42 below the average rate for the ten-year period just closed. The deathrate during the year (16.82 to 1,000) is the least since the year 1851, so that the excess of births over deaths (8.26) is favored by other conditions than increase in number of children. The following table shows the birthrate per 1,000 inhabitants of Massachusetts as compared with the same number in various European countries:

Massachusetts, 1900.....	26	Russia, 1897.....	52
Hungary, 1899.....	39	Belgium, 19 0.....	29
Austria, 1899.....	37	Norway, 1899.....	30
Germany, 1900.....	35	Sweden, 1898.....	27
Italy, 1899.....	34	Switzerland, 1899.....	28
Holland, 1900.....	35	Spain, 1895.....	35
Great Britain, 1900.....	29	France, 1898.....	22

It may be noted in connection with the foregoing table that in Massachusetts the children of foreign-born mothers are largely in excess of those of natives, so that were Massachusetts not helped by immigration the rate would be far lower. In 1890 the percentage of native born was 34.82, foreign born 44.10, and in 1900 the percentage was 31.45 for native, 49.30 for foreign born.

Marconi System in Medicine.—One calling himself "Professor John Newsome, phrenologist and chycopoedist," has been arrested in Fall River, Mass., on the charge of having violated the medical statutes in practising medicine without a license. Various witnesses were examined by the court and likewise by the "professor." The man is from Blackburn, England, and he says that he possesses the "gift of herbs," and also the rare faculty of "doping out what's the matter with a man," without resort to the ordinary methods of diagnosis. He says: "I get the disease from the body by putting my thumb on the patient's forehead, and by a kind of mesmeric telepathy, which I cannot explain, I feel all the pain that is experienced by the patient and in the same location of the body. Then I give herbs." He confessed that to one of the patients who testified in his behalf he gave 33 different kinds of medicine, and to another 43, and to still another 27, all mixed up in a bag. He says: "The herb business comes natural to me, and I can explain it no more than I can explain my system of diagnosis." He further said that by using a magic tube placed behind the ear of the patient he can determine whether he has kidney trouble, catarrh of the stomach, and this he explained by saying that he understood the head, and can therefore tell if a man clings to life, and that he can tell if the blood is rising without looking at the tongue or feeling the pulse. "In a sense it's wireless telegraphy." Various patients of the "professor" testified strongly in his behalf and that after consulting numerous "regulars" they found relief only in the medication administered by the "professor." The court held that although the "professor" was "harmless" he was at the same time guilty according to the statutes; therefore he was adjudged guilty, and the complaint filed on the payment of costs.

NEW YORK.

House Disinfection in Ithaca.—In accordance with recommendations made by Dr. Soper, who came to Ithaca at the instance of the State Board of Health, the Common Council has placed means at the disposal of Dr. Soper to combat the typhoid epidemic. Twenty men have been employed to make house-to-house visits wherever typhoid fever has occurred and thoroughly disinfect each house.

Home for Consumptives.—According to the *New York Sun*, the Arbeiter Ring, an organization of about 20,000 East Siders, composed principally of members of trades unions and social clubs, has decided to try to raise a fund to establish a home for consumptives. It has called a conference for the second Friday in May, at which the feasibility of such a project will be discussed. In the meantime committees are to be sent to investigate how far the working of people in sweatshops is responsible for the spread of tuberculosis.

Columbus Hospital, New York—This institution is to be enlarged shortly by the addition of new buildings, the ground for which adjoining the present property has already been purchased. The erection of these new buildings will increase the capacity of the hospital to 150 beds, instead of the present 98 beds. Funds for the erection of the buildings are available, which will be sufficient to provide for a modern equipment of the new wards. Dr. G. A. DeSantos Saxe has been appointed assistant pathologist to the hospital.

Two Additional Hospitals for New York.—A bill has been introduced into the New York Legislature to constitute the group of buildings of the Manhattan State Hospital at Central Islip a State hospital, to be known as the Central Islip State Hospital, and to constitute the buildings of the Long Island State Hospital at King's Park an institution to be known as the King's Park State Hospital. The bill increases the supervision of the State Commission in Lunacy over the State hospitals by extending it to business and financial management.

Sweatshops Closed in Brooklyn.—It is stated that 20 factory inspectors have made the rounds of 75 sweatshops in the Brownsville district of Brooklyn and closed most of them for violations of the law in regard to sanitary conditions. No arrests were made, but in every instance in which it was found that the law had been violated work was suspended in the shops by taking away the certificate without which they are not allowed to operate. Numerous complaints have been received by the department claiming bad ventilation and unsanitary conditions in the shops. The object of having the inspectors close the shops is to convince the proprietors that the letter and spirit of the law must be obeyed.

To License Trained Nurses.—A bill has just been introduced into the New York Legislature which provides that hereafter trained nurses shall receive certificates, to be given by a Board of Regents appointed for that purpose. Applicants must be over 21 years old, of good moral character and hold a diploma from an accredited training-school covering a course of at least two years. The successful applicants shall be styled registered nurses and be allowed to use the abbreviation R. N. after their names. The regents shall annually appoint a board of five examiners selected from the nominees of the New York State Nurses' Association, and shall make the rules governing the examination. A sufficient fee shall be charged each applicant to pay the expenses. Upon the recommendation of the Board of Examiners the regents may waive the examination of any person possessing the required qualifications who has graduated before or may be in training at the time of the passage of the act. It is said the trained nurses of the State are enthusiastic supporters of the measure.

PHILADELPHIA, PENNSYLVANIA, ETC.

Regulation of Child Labor.—A bill has been introduced into the Pennsylvania Legislature regulating the employment of children throughout the State. It is made unlawful to employ any child under 14 at any labor during the hours when the public schools are in session, and the working hours are limited to 10 hours a day and 55 hours a week. No child under 16 can be employed between the hours of 9 a.m. and 6 p.m.

To Stop Six-day Races.—A bill has been introduced into the Pennsylvania Legislature which makes it unlawful for any person or persons to promote or manage or participate in any athletic contest or exhibition held within the State of Pennsylvania which shall continue for more than 12 hours in each calendar day. The penalty imposed for violations of the act is a fine of not less than \$100 or more than \$1,000, or imprisonment not exceeding two years, or both.

Appropriations for Philadelphia Hospitals.—The bill for appropriations for Philadelphia hospitals has just passed its first reading in the House. The Medico-Chirurgical Hospital, which asked \$375,000, is allowed \$290,000; University of Pennsylvania, which asked \$350,000 altogether, is allowed \$100,000 for the University and \$110,000 for the hospital; Jefferson Hospital, which asked \$350,000, is allowed \$260,000. The least percentage of reduction, 23, is the Medico-Chirurgical's. Jefferson's is nearly 26. The heaviest, 40, is the University's.

Freak Legislation.—A member of the Pennsylvania Legislature, frightened by the prospect of "race suicide" as feared by Presidents Roosevelt and Eliot, has introduced into the Legislature a bill, which among other things, provides that any lawfully married woman who is the mother of 6 children shall receive \$10 in money and a ten-dollar gold medal. Any lawfully married woman who is the mother of 9 children shall receive \$20 in money and a gold medal of similar value. Any lawfully married woman the mother of 12 children shall receive \$25 in cash and a medal of equivalent value. Any lawfully married woman who is the mother of 15 children shall receive \$50 in coin of the realm and a medal of the same value. It is also provided that every seventh son or daughter of any lawfully married husband and wife shall be educated by and at the expense of the Commonwealth in any school, or academy, or college desired by said son or daughter, provided the cost shall not exceed \$500.

Prayer versus Vaccination for Smallpox.—A Philadelphia eddyite, after having been ill for a week in his home with a virulent attack of smallpox, and after having exposed his wife, children, and neighbors who shared his faith in the eddyite teaching to the disease, was finally taken forcefully from his home to the Municipal Hospital, where he is now under treatment. He absolutely refuses to take medicine prescribed by the physicians, claiming that it is so much poison, and firmly believes that the prayers offered by himself and his brethren will relieve him from the scourge of smallpox.

New Jersey State Hospital, Morris Plains, N. J.—The twenty-seventh annual report of the medical department of this hospital for the year ended October 31, 1902, states that during the year there were in all 1,742 patients under treatment, and the daily average for the year was 1,427. The proportion of recoveries, computed upon the number admitted, is about 28%. The deathrate, based upon the number under treatment, is 7.7%, and the average age at death was 64 years, showing that the average age of death was far above that usually given by statisticians. This reflects favorably upon the influence of properly regulated institution life, associated with good care and scientific medication.

Doctors to be Instructed in Tropical Diseases.—A number of the leading physicians of Philadelphia have met and formed a Philadelphia Society of Tropical Medicine, the object of which is to prepare students of medicine and physicians for their duties in the Philippine Islands and other tropical countries of the world. No society of this kind has previously been formed in the United States. The founders of the society include the following members of the medical profession: President, Dr. Fenton; vice-presidents, Professors James C. Wilson and James Anders; secretary, Professor Joseph McFarland; treasurer, Professor E. B. Gleason; Executive Committee, Dr. John V. Shoemaker, chairman, and Dr. Fenton, Professor Judson Daland, Dr. R. G. Curtin, Professor Orville Horwitz and Dr. Hobart Hare.

SOUTHERN STATES.

To Bar Eddyites.—Advices from Richmond state that after an exciting debate in the Virginia Senate a bill was passed forbidding the eddyites to practise the profession of healing in the State of Virginia unless they have been duly examined and licensed by the State Board of Medical Examiners. It was argued that lawyers might finally claim to be able to win suits by prayer if the thing was not nipped in the bud.

Washington to Fight Tuberculosis.—Leading citizens of Washington, D. C., have organized a propaganda against tuberculosis. Every effort will be made to spread intelligence which will tend to prevent and combat the disease. The work meets the approval and cooperation of the city health authorities, and its organizers embrace many prominent physicians, charity workers, philanthropists, and clergymen. Public lectures will be given, and reprints and scientific documents are to be published by the society in the dissemination of knowledge with the hope that the progress of tuberculosis may be arrested.

Antitoxin to Combat Cholera Infantum.—Dr. Hurd, of Johns Hopkins Hospital, is quoted as making the following statement with reference to antitoxin treatment for cholera infantum: "The new serum for dysenteric diseases is in such an advanced state of perfectness that it can be announced with absolute certainty that it will by the end of the year be in the hands of every up-to-date practitioner of medicine. It will be a specific remedy for cholera infantum, since the bacillus at the root of this trouble has been absolutely proved the same germ as that of dysentery and must yield to the same antitoxin. This antitoxin directly attacks and destroys the poisonous germs in the blood infected with dysenteric bacilli and recovery—unless complications have set in that cause death—is a scientific certainty."

WESTERN STATES.

To Study Tropical Diseases.—It is reported that the trustees of the Michigan College of Medicine and Surgery have established two new chairs in tropical diseases, with the object of preparing medical practitioners to deal with those affections in the Philippines and in Cuba.

Smallpox in Chicago.—The health department officials of Chicago have called attention to the virulent type which smallpox has assumed in all sections of the city. There existed a greater number of cases two years ago than at the present time, but the type was mild and but few fatalities resulted. Widespread vaccination is insisted upon. A feature of the epidemic is the number of small children who are affected.

High Mortality in Chicago.—The Bulletin of the Health Department states that the week ended February 28 broke all records of mortality for any single February week in the history of the department, while the total deaths are the highest in proportion to population since February, 1882. The 713 deaths recorded during the week represent an annual mortality

rate of 19.73 per 1,000 of population—a rate unpleasantly near that of the older eastern communities—and the 2,570 for the month give an annual rate for the 28 days of 18.30 per 1,000 of population. The only comfort to be gleaned from the situation is that found in a comparison of the deaths at given ages. As compared with February, 1902, there were 16.2% more deaths over 60 years, and 4.6% fewer under 5 years.

Repeal of the Former Statutes on Grave Robbing.—A bill recently signed by the Governor of Indiana it is believed will nullify the indictments against physicians said to be implicated in the late grave robbing scandal and will also free the prisoners who are now under arrest on that charge. The new law repeals all the existing statutes on grave robbing, creates a State board whose duty it will be to distribute unclaimed bodies among the various medical and dental colleges of the State, and requires that all such unclaimed bodies shall be turned over to the board by public institutions. The new law also contains sections defining grave robbing and providing punishment for their violation. In consequence of this new law it is now claimed that the indictments against those accused of grave robbing are invalid, as the laws under which they were found no longer exist. A number of lawyers, however, claim that the present law will not affect indictments returned under the laws that are repealed.

Birthrate of Chicago.—Figures lately compiled by the health officials of Chicago tend to prove that the percentage of infants to total population is gradually increasing. The results obtained are based on statistics concerning the enrollment of school children. In this connection the Bulletin of the Health Department states that in 1890 there were 135,541 children enrolled, of which number 20,175 were under 7 years of age. Those under 7 formed 1.83% of the total population—1,009,850—of the city in that year. In 1900 the total enrollment was 225,861, of which number 48,817 were under 7—a proportion of 2.87% of the total population—1,698,575—in 1900. These two sets of figures show an increase of 57.3% of children under 7 in proportion to total population, and of 141.9% in the actual number of children under 7 during the ten years. But a still greater improvement in the relatively better conditions for life which exist in more recent years is shown by the following figures from the same source: In the census year 1890 there were 21,856 deaths at all ages, of which number 9,884 were under 5 years, 45.2% of the total mortality. In the census year 1900, out of the total 24,941 deaths at all ages there were 8,283 under 5 years, or 33.2% of the total mortality.

CANADA.

Hospital for Detained Immigrants.—It is said that the Elder-Dempster Steamship Company, which brings the largest number of immigrants to St. Johns, is preparing to care for its own detained immigrants. A hospital will be opened at Carleton. Heretofore immigrants who had been temporarily detained for illness, pending their admission into the Canadian borders or those of the United States, have been cared for by the company at the General Public Hospital at the rate of \$1 a day per patient. The company has decided that less expense will be incurred in establishing a hospital of its own to care for afflicted immigrants.

FOREIGN NEWS AND NOTES

CONTINENTAL EUROPE.

Test for Canned Meat.—Dr. Giovanni Grixoni, an Italian bacteriologist, who has made a study of preserved meats, has found that when a can of meat gives forth a splashing sound on shaking it is due to the liquefaction of the gelatin of the meat by bacteria. From meats in this condition he was able to obtain many bacteria and to make cultures which when administered to animals caused death. Many meats, though not spoiled in the ordinary sense, were found to have been so deteriorated as to be wholly unfit for consumption. He recommends that legislation should make it compulsory to mark all tinned meats with the date of canning.

The Latest "Discovery" from Paris.—The *Revue des Revues* states that Professor Peter Stein has invented an apparatus which not only restores lost sight, but gives vision to those who have been blind from birth. Dr. Caze, who publishes the announcement, says that Professor Stein took him into a dark room and securely bandaged his eyes so that he could not possibly see. The lamp was then lighted and the apparatus was fastened around his temples when instantly he became conscious of a dim light. The light became stronger, and he was now able to count the professor's fingers when they were held up before him and to enumerate other things in the room. Just as he was feeling that his vision was clearing and he was convinced that he would soon see normally, the apparatus was suddenly removed and he was left in total darkness. Professor Stein rests his claim on the theory that man does not see with the eye, but with the brain, the eye only serving to receive the image, which the optic nerve transmits to the seat

of perception, and if, therefore, the image can be transmitted to the brain without eyes a blind person can see as well as anybody else.

Quackery in Berlin.—A man named Nordenskoetter was recently convicted and sentenced to three years' imprisonment for practising medicine in Berlin without a license. He had studied chemistry at a university for six semesters, and after that gained some medical knowledge by serving as a clerk in a drug store. He considered this sufficient training for the treatment of the sick, and by the means of widespread advertising he soon gained a lucrative practice. He was in the habit of mixing his medicines in a bathtub in which his wife "occasionally" took a bath. Before the trial ended he fled, forfeiting his bail of 15,000 marks. He is said to be worth over \$150,000. He was assisted by a regular practitioner named Kronheim, who was also up for trial, but who was acquitted.

OBITUARIES.

Charles H. Ohr, in Cumberland, Md., March 8, aged 93. He was graduated from the University of Maryland, Baltimore, in 1834. In the cholera epidemic of 1853 in Baltimore he introduced the use of strychnin, and, despite the great mortality of the time, he lost only 113 out of 600 cases. He wrote many books on medicine and was a contributor to medical journals. He was president of the Maryland Medical and Chirurgical Faculty in 1872. Dr. Ohr was for 10 years consulting physician to the Cumberland Board of Health, was a member of the city council, a former mayor of Cumberland, and a State Senator. He was also surgeon at the Federal Hospital of Baltimore. He was said to be the oldest past grand master Mason in the world.

Rafael Zaldívar, former President of Salvador and lately Minister of that republic at Washington, died in Paris, France, March 3. He obtained his degree in medicine from the National University in Guatemala. He began the practice of medicine in that city and soon gained prominence as a physician. He was one of the three members of the medical profession allowed by the laws of the country to participate in legislation.

John R. Casey, of Joliet, Ill., March 1, aged 68. He was graduated from the medical department of the Washington University, St. Louis, in 1857. He was for 10 years physician for the State penitentiary, and had been a member of the city council.

James E. Ferguson, in Bangor, Mich., February 16, aged 78. He was graduated from the Philadelphia Medical College in 1852 and from the Jefferson Medical College, Philadelphia, in 1870. He was twice a member of the State Legislature.

Charles McDonald Cameron, at Cobourg, Ont., February 28. He practised his profession for 30 years in Rochester, N. Y., and at the time of his death was one of the oldest graduates in medicine of McGill University, Montreal.

Ingham W. Donnau, of Pittsburg, Pa., died at Alken, S. C., February 13, aged 58. He was graduated from the Bellevue Hospital Medical College, New York, in 1871.

William J. Springfield died recently in Jolly, Daviess county, Ky. He was graduated from the Cleveland College of Physicians and Surgeons in 1874.

Peter V. R. Dafeo, of Tecumseh, Neb., February 17, aged 61. He was graduated from the University of the Victoria College, Cobourg, Ont., in 1864.

Hiram W. Alexander, in Muir, Fayette county, Ky., February 24, aged 73. He was graduated from the University of Nashville (Tenn.) in 1857.

Bishop B. Sudworth, in Ann Arbor, Mich., February 15, aged 73. He was graduated from the University of Michigan, Ann Arbor, in 1833.

Robert R. Dorsey, in Los Angeles, Cal., February 18, aged 43. He was graduated from the University of Pennsylvania, Philadelphia, in 1822.

Carlos R. Allen, in Vernon, Va., February 19, aged 83. He was graduated from the Dartmouth Medical College, Hanover, N. H., in 1838.

Herman S. Bisse, in Philadelphia, February 22. He was graduated from the University of Pennsylvania, Philadelphia, in 1880.

Benjamin R. Dostor, in Biakely, Ga., February 15. He was graduated from the Jefferson Medical College, Philadelphia, in 1853.

Henry Gifford, at Richmond, Ind., March 4. He was formerly an army surgeon and lately surgeon of the Vandalia Railroad.

Martin K. Gage, of Sparta, Wis., February 25, aged 78. He was graduated from the Geneva (N. Y.) Medical College in 1852.

Martin B. Cherrie, in Ankeny, Ia., February 20, aged 41. He was graduated from the Rush Medical College, Chicago, in 1888.

S. B. Lawson, at Camden, W. Va., February 24, aged 35. He was graduated from the Baltimore Medical College in 1894.

Alexander S. Hancock, of New York City, March 1, aged 65.

Alexander C. Peters, of Newark, N. J., March 1, aged 63.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

REPORT OF APPENDICITIS CASES.¹

BY

WM. M. ROBERTSON, M.D., B.Sc.,
of Warren, Pa.

During 1902 I had an opportunity to observe an interesting series of five cases of appendicitis, all early elective operative cases, and also to observe what conditions were present at operation. All of these cases occurred in boys and men in robust health. All were between the ages of 16 and 35. Three were less than 20, and two between 25 and 35. In three it was the first attack; two had had former attacks; all of the cases were severe. In the three boys under 20 the trouble was localized with commencing abscess. The other two patients had general peritonitis with pus formation.

Concerning the nature of the attack all were acute. As to time of operation two were operated upon the third day, or at the end of about 48 hours; two were operated upon within 24 hours after the onset of acute symptoms; one was operated upon 30 hours after the severe attack.

All of the appendices were intact, however, one had perforated and one had become partly gangrenous, while two were large, tumefied, and friable. The physical examination in all revealed great tenderness and muscular rigidity in the right iliac region; and in three cases there could be felt a distinct tumor. In only one case (No. 4) with general peritonitis was a rectal examination made, and this revealed the general extent of the inflammation in the pelvis. Four of the cases were distinctly fulminant in character and would probably have been beyond hope in a very short time had there not been early operation.

The leukocyte count in all was positive and, in these acute or fulminant forms, this is the earliest reliable indication for operation. It is positive for quite a number of hours before the pulse may indicate a grave condition. The highest count was 49,000, which occurred in Case No. 1, in which the appendix was partly gangrenous. The next highest was 40,000, in this case beginning general peritonitis from perforation was present. The other three cases had from 23,000 to 27,000 leukocytes, all being safely beyond the 18,000 limit of Dr. Tom R. Brown, of Baltimore, as the number sufficient to demand operation.

There was but one count made in three of the cases, which was but a short time before operation. Two counts were made in the cases of general peritonitis. Eight hours after the very severe symptoms following perforation in Case No. 2 the count showed 30,000 leukocytes, and six hours later showed 40,000; while the temperature, pulse, and general condition would have led many surgeons to delay operation. In Case No. 4 the leukocytes increased from 14,000 to 23,000 in six hours.

All of the patients made rapid and uninterrupted recoveries. Both patients with general peritonitis were operated upon by Dr. Eugene A. Smith, of Buffalo. In Case No. 2 the pelvis was filled with seropurulent fluid. After removal of the appendix the abdomen was irrigated with hot saline and closed without drainage. In Case No. 4 the pelvis and part of the abdomen were full of pus. The appendix was removed, the abdomen irrigated, and drainage made by placing a gauze wick to the bottom of the pelvis and a Mikulicz drain to the seat of the appendix.

In Case No. 1 there was pus formation amidst adhesions, with a gangrenous appendix. In this case the intestines were entirely packed away from the point of greatest infection—after removal of the appendix, breaking down the adhesions and irrigation—by a pack of washed-out iodoform gauze; this was removed after three days and a fresh small strip of gauze introduced.

In Case No. 3 only the Mikulicz drain was used, while in Case No. 4 wicks were left in the pelvis and to the site of the appendix.

Case No. 1, in which I operated January 21, 1902, assisted by Dr. J. R. Durham and the late Dr. W. V. Hazeltine, was the first case of appendicitis in Warren county in which the leukocyte count was used as an aid in determining the imperative-ness of operation; and was the first early elective operation for appendicitis performed in this county.

Taking into consideration the severity of these cases it is not putting the case too strongly to say that, without operation, four out of five of these patients would soon have succumbed to the disease. At least no one would contend but that two of the five would very quickly have been dead, and that chances of recovery were against the other three.

Altogether this plea for early prompt operation is a strong one. The rank and file of the profession, so far as practice is concerned, favors waiting in most cases, and it is humiliating to admit that there are many in the profession who will placidly allow the operative period to pass as though they carried no particular responsibility during that time, and then, when they see danger and destruction face to face, are perfectly willing to throw the case in the lap of the surgeon and place on him the responsibility. The time is past when there should be any dissension in the matter between physician and surgeon; the one trying how long a case may be withheld from the operative list, and the other seeking and begging for the early opportunity to remove the trouble while yet there is time. There should be one endeavor in both to bring the case to operation so soon as possible, provided the patient and the friends consent. In these as well as in other surgical cases, John B. Murphy recently said: "When will the medical profession fully appreciate the dangers of delay? When will they realize that the loss of a life by omission is as grave as a loss of life by commission?" In such cases Dr. Roswell Park says, "When in doubt, operate." It sounds well enough to raise the cry "do not operate till you have to!" but it is a fearful responsibility to wait until operation is too late. We owe it to ourselves and to our patients to be fair in such matters. We should ever hold our minds in a receptive attitude. There is too much of taking sides in such questions, and there are too many who can not be changed, who have not the mental aptitude to be able to change their views. It leads to dogmatism, and in medicine as a science "rationalism and progress" is the watchword, and that is entirely opposed to dogmatism and orthodoxy.

Lord Lister says that he worked for years with but little encouragement from his professional brethren. This is pathetic to think upon, especially when it is our professional brethren who are at fault. It is expected of the laity, but where it is true of the bulk of our profession, would it not be right to make the chief object of preliminary training for medicine that of training a rational and receptive mind?

CASE OF FIBROSARCOMA TREATED BY OPERATION, SERUM INJECTION, AND X-RAYS.

BY

J. P. TORREY, M.D.,
of Andover, Mass.

The following case is of interest because affording a pathologic examination of the site of a malignant growth which had disappeared under exposure to the Röntgen rays:

Mr. J. J. A., aged 43, a hack driver, having a good previous and family history, received a blow from a fall some weeks before noticing a tumor in the left side. The tumor was first discovered in September, 1901, as a painful, tender, movable, hard bunch about the size of a horsechestnut. Operation was refused until December 22, 1901, when a flattened nodule $1\frac{1}{2}$ inches in diameter and 1 inch thick was removed. The wound healed by first intention, but after a time reopened and discharged a bloody fluid. On February 22, 1902, a recurrent nodule the size of a cherry was removed, and on May 5, 1902, Dr. Charles L. Scudder, of Boston, resected a portion of the tenth rib and followed the growth down to the peritoneum. The wound was drained and the upper end healed, but the lower end granulated for some months. Dr. Whitney, pathologist to the Massachusetts General Hospital, reported the growth as fibrosarcoma.

Dr. William B. Coley, of New York, kindly advised regarding the use of his serum injections and Röntgen ray exposures.

¹ Read at the Warren County (Pa.) Medical Society, January 13, 1903.

Injections of the mixed toxins of erysipelas and *Bacillus prodigiosus* were begun May 10, 1902, and continued every other day until July 1, 1902, the dose varying from .03 cc. to .5 cc. (.5 to 8 minims), which produced a chill at four different times. During this period there was loss of weight and general decline, accompanied by a third recurrence.

Between July 1 and September 11, 34 Röntgen ray treatments were given from a small 8-inch Ruhmkorff coil, operated by eight storage batteries.

Treatments were given two or three times a week from 10 to 15 minutes at about 8 inches from the target of the tube. Injections of the toxins were also used once or twice a week. The general health began to improve, and the four tumor nodules which had developed diminished in size.

From September 11 until November 6 a 12-inch Heinze coil attached to a street current, transformed to 104 voltage, was employed. Improvement was very marked during this period, the skin became bronzed, then reddened, so that treatments were omitted October 28.

After this the two remaining nodules completely disappeared, leaving at the site of the granulating wound only an indolent ulcer the size of a dollar, which reopened after having nearly closed, and was doubtless a Röntgen ray burn. At this time the patient was feeling well, working every day, and weighed 190 pounds.

November 6 the patient developed typhoid fever, the only known exposure to the disease having occurred through lifting a convalescent typhoid patient into and out of his hack. After ten days of severe fever death occurred.

Postmortem examination of the side was allowed, and the entire scar with its underlying tissue to the ribs and peritoneum was removed for examination. No sign of newgrowth was found by Drs. Whitney and Simmons, who examined the specimen, nor was there any abnormal gross appearance about the stump of the resected rib, nor within the pleural or abdominal cavities, the viscera of which were palpated and exposed to view as far as possible through the incision in the left side.

Dr. Simmons, of Boston, writes: "All the specimen shows is normal skin and an old scar. I have looked up Dr. Whitney's specimen removed by Dr. Scudder, and have gone over both specimens with Dr. Whitney. In the specimen the tumor was without doubt fibrosarcoma, and shows best where it was invading the muscle. The ulcers are very chronic and might well have been caused by a Röntgen ray burn. I do not think that the specimen shows conclusively from a pathologic standpoint that the sarcoma was cured, although certainly there was none of it in the scar."

While complete autopsy by a competent pathologist would have decided the question of cure conclusively, yet the fact that subcutaneous nodules visible and palpable had completely disappeared, leaving no trace in the tissues upon microscopic examination, and that the clinical symptoms of malignant disease had gone also, render it quite probable that cure had taken place.

CHROMATOPSIA FOLLOWING LABOR.

BY

A. M. DAVIS, M.D.,
of Philadelphia.

Pathologist to the German Hospital.

The patient is R. W., a primipara of 26. Her family and previous history are negative. She is of good physique, well-nourished, and has always had excellent health. Repeated examinations of the urine throughout pregnancy gave invariably negative results. The position of the child was diagnosed as that of L. O. A.

Labor began at term and terminated normally, with the exception of a central perineal tear requiring three sutures, and which healed without suppuration. During the course of labor (which occupied about 10 hours) nervous symptoms were apparently absent. The second day after delivery, quarrelsome neighbors gave the patient a severe fright, and at the same time her nurse was unexpectedly called away. Complete insomnia ensued the following night, but no untoward symptoms were noticed the next day. At midnight of the next day I was called to see the patient. I found her in a condition of partial shock, the skin was cold and clammy, respirations sighing, with slightly subnormal temperature (98° F.). The pupils were widely dilated, and the patellar and bicipital reflexes were diminished. Upon questioning, she complained of great alarm because the white bedspread appeared a golden yellow, as did any light object about the room; dark objects appeared absolutely black. There was also an inability to concentrate the sight upon objects, which became dim and indistinct, but after closing the eyes they again appeared normal (except in color) for a few moments and then again become blurred. At the same time olfactory delusions appeared; a sudden and suffocating odor seemed to penetrate her nostrils, this being only relieved by inhaling some volatile substance, such as camphor or aromatic spirits of ammonia. The milk secretion (which

had appeared the second day after labor) was apparently normal, the lochia were entirely so, and the uterus seemed to be involuting nicely. An examination of the urine at this time showed it to be intensely acid, specific gravity 1.030, and to contain an excess of urates and uric acid, but no pathologic elements.

With the relief of the insomnia, the visual and olfactory delusions were relieved to a certain extent, although they persisted with varying intensity for at least six weeks after labor. At no time was there any disturbance of cerebration apparent. The child weighed 8½ pounds at birth, and at the age of two months was well nourished from the breast, and in the best health. The patient, notwithstanding her peculiar condition, insisted upon getting about the fourteenth day following confinement, and is now (two months later) able to resume her household duties, being fully recovered. At no time during the puerperium was there any rise of temperature.

AN IMPROVED ROUND POINT SURGICAL NEEDLE.

BY

HOWARD LILIENTHAL, M.D.,
of New York City.

Attending Surgeon to Mt. Sinai Hospital.

To the Editor of *American Medicine*:—In your issue of January 10 I note an article by Dr. George Erety Shoemaker, of Philadelphia, on "An Improved Round Point Needle for Intra-abdominal Use." Permit me to say that, without controversy as to priority, George Tiemann & Co., of New York, have for



Lilienthal's needle. Figure shows the eye a trifle too wide.

the past eight months or more made for me a full curved, round pointed, flat shanked needle much like the one described by Dr. Shoemaker. It will be noted that the eye of the needle has been made very large by slightly spreading the tip of the shank. This greatly facilitates threading and does not impede the needle in its passage through the tissues. I had these needles made especially for the insertion of the deep layer of sutures in the Bassini operation for the radical cure of inguinal hernia. The making of surgical needles, by the way, is not a particularly new industry in America, Tiemann having made them for many years.

CAUSES OF EPILEPSY IN THE YOUNG.

BY

F. J. CAMPBELL, M.D.,
of Fargo, N. D.

To the Editor of *American Medicine*:—In your issue of December 13, Dr. Jacobi makes the following statement in his article on "Causes of Epilepsy in the Young:" "I can say that I never in my life saw a recovery from paralysis, idiocy or epilepsy due to circumcision."

This statement, coming from such a high authority as Dr. Jacobi, leads me to put on record the following case of cure from epilepsy by the operation of circumcision. While I have considered the result a remarkable one I was not aware that it was so rare as seems to be the case, or that well authenticated cases of cure were seriously questioned.

Some time during the summer of 1892 a well developed boy of 13 was brought to me by his father, a farmer, to be treated for epilepsy. His father gave the following history: For several years he had had an occasional convulsion, and these had increased in frequency and in intensity till at the time of consulting me they occurred daily and often several times a day. The convulsion that I witnessed was a typical one of grand mal. They, of course, incapacitated him from farm work and rendered him entirely useless and an object of constant care. Noticing a marked phimosis with balanitis and irritating smegma, I circumcised him. He had one slight convulsion the next day. Over 10 years have passed and he called at my office last week and stated that he has never had another since. He is a picture of a healthy farmer. As I did nothing else but the circumcision I consider the case one of complete recovery from epilepsy by circumcision.

ARTIFICIAL RESPIRATION IN CARBOLIC ACID POISONING.

BY

WALTER S. CORNELL, M.D.,
of Philadelphia.

The value of artificial respiration in poisoning by carbolic acid seems demonstrated by the following case:

N. M., aged 58, a blacksmith, of heavy and powerful physique, was brought to the Presbyterian Hospital about 10 minutes after taking a quantity of carbolic acid. The patient was unconscious and slightly cyanosed. The respirations were 40 and stertorous in character. Pulse was 100-110. The muscles were not quite relaxed. A stomach-tube was at once inserted and the stomach thoroughly washed out with two quarts of water containing 250 grams (8 ounces) of Epsom salts and 125 grams (4 ounces) of sodium bicarbonate. A hypodermic injection of 5 mg. ($\frac{1}{10}$ grain) of strychnia and 1 mg. ($\frac{1}{60}$ grain) of atropin was also given.

These measures occupied about five minutes. The patient meanwhile had sunk rapidly into an apparently moribund condition—absolutely relaxed, the eyes opened, and the conjunctival reflexes lost. The cyanosis was more pronounced, the heart-beat was not palpable, and there was no radial pulse. A running, soft carotid pulse of 110 could just be felt. This slight pulse and the absence of respiratory movement brought to mind that carbolic acid kills usually by paralysis of the respiratory center. Artificial respiration was accordingly instituted at once. There was also given 30 cc. (1 ounce) of whisky hypodermically and 235 cc. (8 ounces) by rectum; only a part of the latter was retained.

Respiration was maintained by an operator on each side bringing the patient's arms down from the level of the head to the sides of the chest, the expiratory movement being finished by a heavy pressure on the anterolateral aspect of the thorax. A mouth gag was inserted, and oxygen administered by a rubber tube introduced into the nose.

At the end of 30 minutes, during a momentary rest of the operators, the patient was observed to make a single weak inspiratory effort. The movements were resumed with intermissions every few minutes. Inspections made during these resting periods showed returning respiratory power, the number of automatic movements being increased each time until they reached 10 continuously. This was 45 minutes after the beginning of the treatment. The conjunctival reflex returned and the cyanosis disappeared. The administration of oxygen was stopped. At the end of another half hour the patient was breathing feebly but regularly, and the artificial movements were discontinued. The patient was transferred to the medical ward and consciousness returned in the succeeding hour. Small doses of olive oil were given for the next 24 hours. Stomatitis and esophagitis, a diarrhea for three days (rather longer than the action of the salines would warrant), and a natural chest soreness, were the only sequels. Unfortunately no order for a special urinalysis was given, but the urine showed such quantities of free carbolic acid that the laboratory resident made a note of the fact.

The quantity of acid taken is uncertain, being between 7.5 cc. and 60 cc. (2 fluidrams and 2 fluidounces). An investigation showed that the patient had received 30 cc. (1 ounce) of Merck's pure carbolic acid from the druggist's boy, of which 22.5 cc. (6 fluidrams) remained in the bottle. The boy had disappeared, and the patient claims that the (4-ounce) bottle was originally half full. Allowing for the patient's misstatement, the boy's generosity probably raised the absolute minimum 7.5 cc. (2 fluidrams) to 15 cc. ($\frac{1}{2}$ ounce). According to Tyson's "Practice of Medicine" 3.75 cc. (1 fluidram) is the maximum dose followed by recovery.

NONSUSCEPTIBILITY TO VACCINATION.

BY

ARTHUR E. SWEATLAND, M.D.,
of Little Rock, Ark.

To the Editor of *American Medicine*:—In the past eight years I have used only fresh vaccine, the best to be procured, and the methods of application have been those of the best advocates of the process. I have endeavored to get a successful vaccination upon myself on an average of twice a year for the past eight years, not having been vaccinated in youth. Last September, while in a somewhat lowered condition physically, I was vaccinated and secured a most beautiful result. Experience in vaccinating my patients has convinced me that the

physical condition of the subject has much to do with results. Even a "bad cold" will lower the vitality of the organism sufficiently to allow the vaccine to perform its work when otherwise it would not have done so. Before ever having been successfully vaccinated I attended numerous cases of smallpox with impunity, being at those times in a robust condition. The failures in obtaining successful vaccination are numerous, but I believe these same persons some time, either by exposure, overwork or sickness, could be rendered susceptible to the virus.

COMMENT ON SOME QUEER THINGS IN MEDICAL JOURNALS.

BY

JAMES MOORES BALL, M.D.,
of St. Louis, Mo.

In *American Medicine* for January 17, 1903, is an article by D. H. Galloway, M.D., Ph.G., of Chicago. He writes concerning "Some Queer Things in Medical Journals." In his letter the following occurs:

"Dr. James Moores Ball, in an article in the *Tri-State Medical Journal* of October, 1898, speaks of sterilizing a slipper-elm tent in alcohol containing 1 to 4,000 mercuric chlorid solution. He fails to tell us how much of the 1 to 4,000 mercuric chlorid solution his alcohol contains. It is inferred, however, that the alcohol itself holds in solution one part of mercuric chlorid to 4,000 of the alcohol."

Now, the facts are:

1. I did not write the article in question or any part thereof.
2. It was written by Dr. L. L. Renshaw, of Monona, Iowa, and was credited to him ("Endometritis and its Treatment," by L. L. Renshaw, M.D., of Monona, Iowa, *Tri-State Medical Journal*, October, 1898, p. 505).
3. The objectionable quotation should be credited where it belongs, viz.: to Dr. Frank A. Glasgow, a professor in the Medical Department of the Washington University, St. Louis, whom Dr. Renshaw quotes. (See *Tri-State Medical Journal*, October, 1898, p. 505, twenty-fifth line from the top of page.)

RECOVERY AFTER LIGHTNING STROKE.

BY

A. F. MCKENZIE, M.D.,
of Monkton, Ont.

To the Editor of *American Medicine*:—In your issue of November 22, 1902, there is a communication on this subject from F. J. Bardwell. He says "It is not uncommon for people to be stunned by lightning but so far as I know this is the only person ever struck and marked by lightning who lived to tell the circumstances." An examination of available literature shows that although rare, the case he reports is by no means unique. In Taylor's Manual of Jurisprudence two or three somewhat similar cases are described. In the October (1901) issue of the *Dominion Medical Monthly* I reported a case occurring in my own practice. In this instance the patient was standing in an open doorway when struck by lightning. The last circumstance, before the accident, she could remember was that of laughing at some men who were running from the storm. The lightning mark extending from the left shoulder to the gluteal region was plainly seen nine weeks after the injury.

THREADBARE AND STILTED EXPRESSIONS.

BY

ARTHUR DEVOE, M.D.,
of Seattle, Wash.

To the Editor of *American Medicine*:—I have noted with interest and approval your editorial comments on the prevalent use in medical communications of various "threadbare and stilted expressions," and am moved thereby to call to your attention certain hackneyed formulas which I believe are not only bad English but misleading and unscientific.

First: It is a very common thing for medical writers of all

classes to refer to "diseased conditions" instead of disease conditions. Exceptionally the latter term is employed. Placed side by side it seems to me the two expressions show their inherent weakness or strength. Tissues and organs may be diseased. Conditions are the result of disease or the habit of health.

Second: Operations for appendicitis are recommended by authorities and others to be done "in the interval between the attacks," or simply and briefly "in the interval." Now, if the appendix be removed by operation there can be no after attack of appendicitis, hence the organ and the interval are alike cut off. The death of the patient under operation similarly terminates the interval idea even if the appendix be not cut off. The complete and final recovery of the patient without operation, a common occurrence, likewise vitiates the in-the-interval formula. What good and important surgical purpose is advanced by maintaining this fatuous surgical expression?

EYE-STRAIN AS A CAUSE OF CHOREA.¹

BY

ALBERT R. BAKER, M.D.,
of Cleveland, Ohio.

Doubtless many of you have met school children who wink incessantly, a habit for which the child is frequently punished. The winking is due to an error of refraction, and the effort made in accommodation reminds one of the boy who first attempts to do without suspenders, and as his trousers keep slipping down he hitches them up in sailor fashion; and so in a case of the hyperopic child kept at school tasks, he finds his ciliary grip on his lens sliding back until the page becomes blurred. He then winks and metaphorically spits on his hands, takes a new hold, increases his accommodative efforts and the letters again clear up. After reading a few words or lines the same blurring again occurs and the renewed effort at concentration is made and thus the habit of winking is acquired. Not infrequently sooner or later a spasmodic closure of the lid is added to the winking, and after a time the whole face participates in the act, accompanied by the peculiar grimaces and muscular movements characteristic of chorea. From numerous observations in my own practice I am thoroughly convinced that this is the genesis of many cases of chorea occurring in school children.

It may be there is a general neurosis back of this trouble; there may be rheumatism and valvular heart disease. Poorly nourished and anemic these children almost always are, but I am thoroughly convinced that the error of refraction is the exciting cause in very many cases. It is possible these are not true choreas and should be called habit choreas, in any event they are met frequently and often are not treated intelligently. I have so frequently met children who have been removed from school on account of chorea, and upon each return to school have had a recurrence of the choreaic movements until carefully fitted with spectacles, and subsequently have had no recurrence, that these observations have in my own mind the certainty of a scientific demonstration.

My first thought when the subject of this discussion was suggested was to report a number of cases; but it seemed unnecessary as I believe every one present can call to mind cases of chorea benefited if not cured by the use of lenses. The lesson I wish to teach is this: Send the patient to the oculist first and not waste valuable time in giving drugs. Give the spectacles first and follow up with your hygienic and medical measures if necessary.

The stereotyped letter I get is something like this:

DEAR DOCTOR: This little patient has been under my care for chorea for a long time. She has been better and worse. I am about discouraged and so are the parents, and we have concluded to try spectacles. Do the best you can.

Yours, etc.,

I prescribe spectacles, the family physician continues his general treatment, the child soon returns to school cured, and I sometimes doubt whether the oculist receives the credit he

deserves for the cure. It does seem sometimes that the profession as a whole are very obtuse in adopting new ideas and new methods. They will prescribe unhesitatingly an unknown and untried remedy that some smooth drummer recommends, but will ignore the most valuable remedies that are seen close at hand. Migraine, that typical eye headache which can almost always be cured with spectacles, is still doped, purged, and dieted, world without end, forever, until the patient takes the matter in his own hands and consults an oculist. So, too, in chorea I find the patients are beginning to come directly to the oculist, and not infrequently against the advice of the family doctor. Within the past year physicians on different occasions have ordered my patients with chorea to discontinue wearing spectacles; in each case the disease became worse, and the glasses were soon restored. I realize the disadvantage the general practitioner labors under in these cases, and I have no doubt but that he suffers in reputation and in pocket therefrom.

Specialists are not all saints, and even though they were, the general practitioner would suffer the most. So that I believe the remedy for this condition lies in all the profession preparing themselves to fit spectacles, and especially those who have to do with the treatment of children. Dr. Kelley has long held his clinics on the same morning in an adjoining room at the Cleveland General Hospital. Judging from the large number of children in attendance upon my clinic, it would sometimes be difficult to say which was the children's clinic and which the eye clinic, especially as so many of them in my service are suffering from headaches, chorea, and other nervous disorders of childhood.

What is true of my dispensary practice is even more so in private work, and I doubt not is so in the practice of every oculist. This condition will continue until the general practitioner prepares himself to do this work. The practitioner who thinks that because a child sees perfectly that the eyes are not at fault makes a most serious mistake. Often those who see the best suffer the most from eye-strain. It is not how much, but how we see that causes trouble. A patient may see perfectly without a mydriatic, but cannot see 20/20 with it. If the general practitioner used mydriatics more frequently, even though not fitting spectacles himself, he would not so frequently fall into error.

The interdependence between accommodation and convergence is a most prolific source of nervous trouble in children, as well as in older people, but I fear it would lead us too far afield to undertake its discussion at this time and place.

OPERATIVE TREATMENT OF RUPTURED URETHRA.

BY

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There are few things more difficult in surgery than the operation required when the urethra has been torn completely in two. Extravasated blood and urine in the bruised and torn tissues render the task of finding the distal end a very trying affair and I have known the search to be abandoned. Usually, with sufficient practice, the torn end can be found and in locating it pressure over the bladder will often cause a flow of urine which promptly solves the problem. In one of my cases, after making every reasonable effort, I was unable to locate the opening and I then made a suprapubic incision into the bladder and passed a catheter from the bladder along the urethra and in this way accomplished the object. The subsequent progress of the case was entirely satisfactory. When great difficulty is experienced, this will be found an absolutely certain method of overcoming it. The torn ends should be accurately stitched together, the permanent patency of the canal depending upon the healing together of the edges of the mucous membrane. If the edges are not approximated cicatricial tissue will result and a troublesome stricture develop. If the wound in the urethra is properly put together there should be no stricture. In one case in which there was an old stricture which was very tight, I dissected out the cicatrix and brought the urethral ends together with good results.

¹ Opening discussion of Dr. Dicky's paper on chorea before the Ohio State Pediatric Society, Toledo, Ohio, June 9, 1902.

ORIGINAL ARTICLES

OBSTINATE SUBACUTE RHEUMATISM.¹

BY

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of New York City.

We are getting farther and farther away from the idea of specifics in medicine. Time was when the principal effort of the medical man was the search for the specific drugs which would cure the ills that flesh is heir to and for which it was thought special remedies had been provided in nature. For a time quinin seemed to be one of them, and encouraged the old idea. Now we know that it is not a specific for fever, that it is only an antiseptic, which is not harmful to the tissues, and which makes short work of the parasite of malaria. We no longer believe that iron is a specific for anemia, since clinical observations have shown that corresponding doses of chemically similar metals, such as manganese, nickel, and cobalt will produce similar effects. Mercury remains as a specific for syphilis, but it seems probable that when we know more about the cause of the disease, we shall learn that it is probably because of the special susceptibility of the microorganism causing the disease to very dilute solutions of the mercurial salts that is the basis of its therapeutic effect. Such idiosyncrasy to certain chemicals is not unknown in bacteriology, and has been noted particularly in the relation of aspergillus to very dilute solutions of silver nitrate.

There remains in certain minds an idea that the salicylates are specifics for rheumatism. Any one who has seen patients with acute rheumatism treated with other coaltar products, such as antipyrin or phenacetin, soon realizes that the effects are practically the same from the various coaltar products, and that what the salicylates really do is to lessen the pain, lower the fever and make the patient more comfortable. There seems to be almost a consensus of clinical opinion, however, that the salicylates are the best symptomatic remedies for rheumatism. There are, in spite of this, a certain number of cases of acute articular rheumatism, however, which are not affected even by large doses of the salicylates. We know that certain specific affections as, for instance, gonorrhoeal rheumatism, so-called, or pyemic arthritis, which for a time may simulate rheumatism very closely, are not affected by the salicylates. There comes at once the thought that certain cases of rheumatism which are obstinate to the salicylates are really due to some other cause than true rheumatism.

In recent years it has been noted that affections of serous membranes, as for instance an ascending infection of the membranes of the cord and of the brain, may result from the presence of pyogenic cocci localized in some part of the body. Meningitis has been known to follow a localized abscess, especially in cases in which the abscess was due to a pure culture of the pneumococcus. It has been known to follow also even in cases of ordinary felon due to pyogenic cocci. There would then seem to be a tendency in certain irresistible tissues to permit the invasion of serous membranes whenever pyogenic cocci get into the circulation. Malignant endocarditis has been known to follow very simple and supposedly thoroughly localized purulent foci. It would not be surprising then if certain cases of supposed rheumatism were really due to an invasion of pus cocci whose virulence is rendered very much less by the fact that the supply of oxygen to be obtained in joint cavities is very limited.

There are certain cases, however, of so-called obstinate rheumatism in which hypothesis need have no place, and actual observation shows the reason for the

failure of the salicylates to relieve symptoms. I have seen within the year a case of rheumatism, so diagnosed by several physicians, in which the patient had had recurring severe attacks, each one of which, however, left some changes in the joints, the joints mainly affected being the fingers and wrists. In this case the diagnosis rheumatism was absolutely unjustified. The condition was evidently gout, and should have been treated as such. The salicylates used over a long period instead of doing good had done harm by increasing the destruction of red blood cells and adding to the patient's anemic condition. In this case suspicion of the nature of the affection should have been aroused by the fact that the patient's father had suffered from a similar condition and that the family was of English extraction. Personally, however, I feel that true gout is much more frequent in this country than has been thought. In a report from Dr. Osler's clinic made at the last meeting of the American Medical Association, it was shown by carefully-kept statistics extending over 12 years that gout was by no means infrequent in and around Baltimore. Compared with the statistics of St. Bartholomew's Hospital, London, the Baltimore report shows that gout is only one-fourth less frequent in this country than in England, though the general supposition has been that we were comparatively free from it, while our English cousins were especially prone to it. We would not have been surprised at statistics showing that gout was four or five times as frequent in England as it is here, instead of existing in the proportion of only four to three.

How difficult may be the recognition of some of these gout cases that now masquerade as rheumatism can perhaps be best realized from the confession frankly made that at Johns Hopkins one patient had been under treatment three times for rheumatism before the discovery, on admission for the fourth time, of tophi in the ears showed that the case had always been one of gout. Gout is especially liable to occur in those who indulge freely in malt liquors, or in those who have some habitual association with lead, as those engaged in the manufacture of white lead: painters, plumbers, tanners, and the like. Men affected with anomalous rheumatic conditions, having such elements in their history, should be suspected, and if the salicylates prove failures in the treatment of their symptoms, careful investigation should be made for the stigmata of gout.

In a certain number of other cases the obstinacy of rheumatic symptoms to the salicylates are due to a nervous element in the patient. Within the last year I have seen a patient who, after two weeks, was still suffering acute pain in various joints notwithstanding the fact that the salicylates had been used freely. In this case at the beginning the affection was almost surely acute articular rheumatism. Later on, as the result of the irritation set up in the joints by the rheumatic arthritis, a tendency to neurotic arthropathy or hysterical joints developed. The affection did not remain for any length of time in one joint, but skipped around. The swelling and tenderness was complained of in one wrist today, in the other wrist two days later, and then it skipped to the knees, occasionally even to the smaller joints. To continue the use of the salicylates in such a case is sure to do harm to the patient.

Of course, it is not easy to know just what to do for these cases. Hysterical affections of any kind are likely to be very capricious toward any treatment. If the patient is anemic, the effect of iron may well be tried, and will often be found of help, notwithstanding the fact that this drug is sometimes said to be contraindicated in rheumatism. Stimulant remedies of almost any kind are nearly sure to prolong the symptoms. On the other hand, any of the stronger sedative drugs, especially the bromids, are likely to have similar effects, and the hypnotics are not advisable. Usually valerian in some form will prove helpful.

Alcoholic patients are prone to have a prolongation

¹ Read before the Section on General Medicine, New York Academy of Medicine.

of their symptoms of acute rheumatic arthritis beyond what is noted in normal patients. The reason is not far to seek. Often before there is any distinct evidence of alcoholic neuritis—that is, before there is any loss of power—the nerves are affected. It has been frequently noted that after a sprain of the ankle an alcoholic neuritis asserts itself that had evidently been in preparation for some time. Alcohol affects the nerves, especially of the lower extremity. Before any disability is noted, nerve degeneration may have progressed so far that the vital reaction of the tissues of the joint is not sufficient to enable them to throw off the arthritic process.

The same thing may be noted with regard to lead. A man who works in lead falls on his hand, sprains his wrist, and then about the time the sprain is getting better has a distinct drop-wrist develop. There have been no signs before the accident of any affection of the nerves. It is evident, however, that a definite neuritic condition existed for some time before. Should a patient contract rheumatism under these conditions there often is a development of a subacute arthritic condition after the true rheumatic arthritis has subsided. In these cases it is important that the underlying condition should be treated, and that the use of the salicylates shall not be continued too long. In both alcoholic and plumbic conditions there is apt to be an associated low grade nephritis. Whenever the kidneys are in a condition so that they do not promptly excrete the salicylic acid administered there is danger of these drugs doing harm. As a rule, the kidneys should be watched, and if the urine becomes smoky early in the administration of the remedies the method of treatment should be changed. Rest, the alkalies, and other coaltar products must be depended on in these cases.

Anemic patients and those suffering from blood dyscrasias of various kinds, as scurvy and hemophilia, are prone to have painful affections of their joints occur almost spontaneously, and it is evident that these important structures, the tissues, which by the way have the hardest work in the body with the exception of the heart, are not receiving their due share of nutritious material.

Patients suffering from such conditions not infrequently have a continuance of their rheumatic symptoms beyond the time when they would normally be expected to have relief because of the administration of the salicylates.

In such cases to persist in the administration of the salicylates is almost sure to do harm. All the coaltar products increase the destruction of red blood cells, and the salicylates are no exception to this rule. Of course, the underlying condition must be treated, and such supporting and dietary regulations advised as may prove helpful. Here, as in hysteria, patients are capricious, and nothing sure can be prescribed.

Finally, there remains a class of ailments which are liable to cause a proration of relief from the symptoms of acute rheumatism by the administration of the salicylates. Most of the infectious diseases may cause passing painful conditions in the joint that show how sensitive these structures are to the presence of toxins in the circulation if the joints are much used, as happens when the patient moves around while the toxins are present. This tendency to affect the joint is well illustrated in influenza, which may itself cause joint pains, simulating rheumatism, and when it follows rheumatism after only a brief interval may cause what appears to be a relapse of the rheumatic condition. If influenza precedes rheumatism by only a short time the rheumatic arthritis usually runs a longer course than normal and is more obstinate to treatment.

Long ago Hippocrates pointed out that dysentery might be accompanied by joint pains, or even by some swelling, that is by effusion into the joint capsule. In conditions in which the digestive tract is seriously disturbed and toxins are being absorbed from it the pres-

ence of these in the circulation may interfere with joint nutrition. This makes the reaction to a process like rheumatism much less active than it would be under normal circumstances. If then there is any infection of the gastrointestinal tract some delay in the relief of the symptoms of rheumatism may be expected.

There are other chronic infectious conditions that may cause joint symptoms of themselves and may prolong the symptoms of rheumatic arthritis. Gerhardt pointed out a quarter of a century ago that patients suffering from bronchiectasis, especially those afflicted with offensive sputum, were liable to have coincident joint affections. In these cases the basis of the joint disturbance is the presence of toxins absorbed from the putrid material in the bronchial dilation. It is not impossible, however, that even microbial invasion of serous membranes should take place in such patients, for it has been often noted that purulent bronchiectasis may be associated with brain abscess, though the abscess may give no symptoms up to the very end of the disease.

Patients who are liable to suffer from urticaria not infrequently have some joint swellings and tenderness, evidently connected with the urticarial underlying condition. Urticaria is now generally considered to be a result of absorptions, usually from the digestive tract. Its frequent occurrence when the serum of other animals is injected into the body for therapeutic purposes, especially if considerable quantities are used, is well known. It has been known to occur, however, in diphtheria when no antitoxin was used and would seem to be sometimes a manifestation of the development within the body itself of a superabundance of antitoxic material.

I have reported a case like this in which, owing to objections on the part of the family, antitoxin was not used in a very mild case of diphtheria, yet urticarial symptoms were noted just as the temperature fell and the child became more comfortable.

In such cases there is a special sensitiveness of the joint structures to be acted upon by toxic material within the body, and it is not surprising that the symptoms of rheumatism remain much longer than in normal individuals. In these cases after the first decided relief of symptoms is obtained by means of the salicylates, careful supporting treatment with rather liberal diet is indicated, and if anemia be present, as is so often the case, an iron preparation.

In general, it may be said that most of the cases of obstinate subacute rheumatism are not simple rheumatic arthritis, but consist of the joint affection developing in the presence of a diathesis, such as gout, or some blood dyscrasia, or some toxemia, such as alcohol or lead, or a neurosis or a hypersensitive condition of the vasomotor system, all of which factors tend to hinder the normal reaction and prevent the prompt relief of symptoms that usually occurs.

ON TRANSPLANTATION OF TUMORS.¹

BY

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I.—ON THE RESISTING POWER OF EXCISED PIECES OF TUMORS.

In several former communications I reported the results of a series of transplantations of a cystic sarcoma and of a mixed tumor, a sarcomatous carcinoma of the thyroid.² In these investigations I used the method of transplantation (1) to determine experimentally the conditions of growth of tumors, and (2) to approach certain questions

¹A somewhat fuller report will appear later.

²(a) On Transplantation of Tumors, Journ. Med. Research, n. s. Vol. 1, No. 1, 1902. (b) Über Transplantationen eines Sarcoma de Thyroidea bei einer weissen Ratte, Virchow's Archiv, Vol. clixvii. (c) Further Investigations in Transplantation of Tumors, Journ. Med. Research, Vol. iii, 1902.

of the structure of tumors. I also reported some experiments in which I tried to determine the resisting power of excised pieces of tumors to unfavorable conditions.

Since then these latter experiments have been continued and I now wish to report upon the results obtained, mentioning also some previous observations. In these experiments I used in part tumors derived from the sarcomatous part of the mixed tumor of the thyroid; mainly, however, tumors derived from a third sarcoma of the thyroid of a rat, which was cystic, like the first sarcoma.¹

I. *Experiments to Produce Tumors by Transplanting Excised Pieces of the Sarcoma which had Previously Been Kept at a Temperature of 3° C. to 4° C.*—After I had succeeded in successfully transplanting pieces of tumor, which after the death of the animal had been kept at room temperature for 12 hours, I further extended the time of keeping the tumor outside of the living animal before transplanting it.

Pieces of a large tumor, which was infected in the center, having been kept on ice for 24 hours, were transplanted into seven animals, three of which developed tumors. One piece, kept at room temperature for the same time, only produced suppuration.

Tumors kept on ice for two days resulted, after transplantation, in the growth of two tumors. Pieces kept in the thermostat for the same time did not grow. Pieces kept on ice for five days produced, after transplantation, three tumors.

In the summer of 1902 a series of further experiments was made in which other parts of the third cystic tumor of the thyroid were kept from 1 to 28 days at a somewhat higher temperature, at about 10° C. Transplantation of such pieces, or an injection of a suspension of small particles of the sarcoma in normal salt solution, gave without exception no result. Control pieces, however, which were transferred at once, resulted in the majority of cases in the successful development of tumors. In one case, for instance, four out of five transplanted pieces, in another five of six transplanted pieces, grew.

The cause of the want of success in these latter experiments probably consisted either in the somewhat higher temperature at which these pieces had been kept, or in the fact that only very small pieces were transplanted. I had observed in my second series that under unfavorable conditions, in which infection of the piece is present, the size of the transplanted piece is of importance.

II. *Experiments on the Influence of Heat on Excised Pieces of Tumor.*—Experiments to determine the maximum temperature to which tissues can be exposed without losing the power to grow after transplantation have not to my knowledge been recorded. It was therefore of especial interest to try such experiments with sarcomas, it being *a priori* uncertain if they would behave like ordinary tissues. In these experiments pieces were cut out of transplanted tumors and either minced at once with sterile 0.7% sodium chlorid solution and then heated in a sterile dish on the water bath, or the whole piece was first heated and afterward transplanted as a whole or minced in salt solution and injected.

Pieces kept 40 minutes at a temperature of 43° C. to 44° C. and a piece kept for 25 minutes at a temperature of 43° C. and afterward 15 minutes at a temperature of 45° C., all grew, but pieces kept for 30 minutes at 45° C., as well as pieces exposed to a still higher temperature, up to 50° C., for 30 minutes, did not grow in a single instance. In all eight series of such experiments were made. Seven rats were inoculated with pieces of tumor kept at 43° C. for 30 to 40 minutes, and of these seven, four developed tumors. Of the other three cases, in one rat the inoculation was without success, in another the

tumor developed after inoculation, but later ceased to grow, in the other the microscopic examination showed only the presence of some doubtful nodules.

In the unsuccessful cases in which pieces were kept for 30 minutes at a higher temperature than 43° C. to 44° C., simultaneous control transplantations with the same, but not heated material, were to a large extent successful. On April 18, for instance of two control experiments one was successful; on May 27, of six control experiments, five were successful; on May 29, of four control experiments, three were successful; on June 13, of six control experiments, two were successful.

One might have expected that pieces previously heated would either have been made entirely ineffective by the heating, or if their power to grow had not been destroyed by the heating, would under the favorable circumstances in which they are situated after injection in a living rat, recover in a short time and grow just as well as the piece previously not heated. This, however, was not the case. All tumors formed after transplantation of pieces previously heated, were markedly weakened in their growth. They began to grow later than the control tumors, and after having started to grow, the rate of their development was slower; growth practically ceased after about five to eight weeks. The power of the transplanted pieces to produce tumors was therefore weakened by the heating. Three of these tumors were examined microscopically.

III. *The Influence of Glycerin on Excised Pieces of Tumors.*—Pieces which were kept after extirpation of the tumor for 17 to 24 hours in glycerin, either on ice or at room temperature, were transplanted after having been for a variable period washed with sterile normal salt solution. They were then minced in a 0.7% solution of sodium chlorid and injected in different experiments into seven animals. One developed a large and another a small tumor, while a third,¹ injected intraperitoneally, also developed a large tumor. (Injection of the material was both subcutaneous and intraperitoneal.)

For instance, in a successful series of this nature of July 7, of 13 control rats injected with fresh tumor seven developed tumors. Of the two pieces put into glycerin and implanted into rats one gave rise to a tumor.

Already in former experiments, in which the mixed tumor of the thyroid was used, pieces had been put into glycerin before transplanting them. These experiments could not be finished at the time; in two cases, however, when pieces had been kept in glycerin seven days and one-half day, respectively, they were transplanted into rats and taken out for microscopic examination one day later. Microscopically the nuclei of the cells showed in many places an irregular arrangement of the chromatin, otherwise the structure of the tumor was well preserved. In the piece put into glycerin for the shorter period mitoses were present, due perhaps to the migration of cells into this piece.

The number of positive results with glycerin being small, it will be necessary to continue these experiments further until more definite conclusions can be drawn.

IV. *Growth of Pieces of Tumor Which Before Transplantation Were Put Into Solutions of Potassium Cyanid.*—It was of interest to see whether pieces of mammalian tumors which had been kept in a solution of normal 1-700 to normal 1-1,000 potassium cyanid outside of the body were capable after transplantation of leading to the formation of tumors, it being known that potassium cyanid inhibits the growth of bacteria, and a tumor which has been transferred through so many generations of animals being usually no longer free of infection from saprophytic organisms. In several of the experiments the tumors used were too severely infected to give posi-

¹I am indebted for this tumor to the kindness of Professor Herzog, of Chicago. The experimental part of this work was partly done in the Gratiwick Research Laboratory of Buffalo in the summer of 1902.

¹In this case the possibility is not absolutely excluded that the animal in which this tumor developed had been previously inoculated with a piece of tumor which had been kept for 24 hours in chloroform water, their being a possibility of an interchange of animals.

tive results. In other cases the control experiments made with immediate transplantation of tumors did not give any positive results. In one control series five tumors grew, but the pieces previously kept in potassium cyanid did not grow. In two other cases, however, in which the control experiments were also positive, the pieces kept in potassium cyanid did grow. In one case a piece developed a tumor after having been kept for 24 hours in normal 1-1,000 potassium cyanid solution. Among three control animals two developed tumors, one did not.

In the second successful series four rats were injected with a suspension of minced tumor which had previously been kept for 40 hours on ice in a normal 1-700 solution of potassium cyanid, made up with physiologic (0.75%) sodium chlorid solution. In this last experiment three rats developed tumors. Among eight control transplantations six were positive.

In these cases again it was apparent that the pieces previously treated were not as efficient to produce tumors as the ones transplanted immediately; they began to grow some days later, and grew at a slower rate.

In all cases before the injection of suspension the potassium cyanid solution was removed from the piece by washing with normal salt solution.

2.—ON THE INFLUENCE OF BACTERIAL PRODUCTS ON THE GROWTH OF TRANSPLANTED PIECES OF TUMORS.

In my former experiments I made some observations on the influence of bacteria on the growth of tumors, and this series of transplantations has confirmed those former results. It could be shown:

(a) That excised pieces of tumor so much infected with bacteria that later on ulceration of the growing tumor and coagulation of the cystic fluid took place, can lead to the formation of tumors.

(b) That if the infection reaches a certain point of severity no growth takes place, or that, in other cases, if the infection was not severe enough to prevent the growth in the beginning it will do so later on, if the cell degeneration in the center of the tumor had further advanced.

(c) From tumors which have ulcerated at one place frequently small well preserved nodules of sarcomatous tissue are separated and afterward are found lying free in the surrounding connective tissue.

(d) That pieces of tumor, after previous ulceration, may be able, by sloughing off of necrotic parts, to become covered by healthy tissue and that, in this way, sometimes multiple spheric nodules are formed, and that under these conditions these nodules frequently do not grow at all, or only grow slowly.

3.—ON THE INJECTION OF TUMOR JUICE.

By injection of the cystic fluid of tumors derived from the first cystic sarcoma, into the peritoneal cavity of rats, I succeeded in four cases in producing the formation of sarcoma.

The second tumor, the sarcomatous of the thyroid, contained none or only small cysts. In several cases, however, during this series of experiments, a small quantity of tumor fluid was injected without any result.

The third tumor again, contained like the first one, many large cysts and the transplanted pieces also developed cysts. In several cases a few cubic centimeters of the cystic fluid were injected into the peritoneal cavity of rats but without any success. In this connection another fact might be mentioned which may have some relation to this result: In the first series of transplantations, at the place where the tumors were introduced into the subcutaneous tissue, or into the peritoneal cavity of animals, isolated nodules of sarcoma frequently developed. The mere contact of the transplanted piece with the surface of the wound, was evidently sufficient to bring about this result.

In the second series of transplantation such a formation of sarcomatous nodules after transitory contact during the introduction of a piece was very rare indeed.

In the third series it almost never occurred, although these tumors, again like the tumors of the first series, were cystic.

This is an experimental proof of the fact that different tumors of similar structure may have a very different faculty to infect other tissues by mere contact.

At various periods cases have been reported in which surgeons believed that contact metastases during operation had taken place. It is, however, difficult in any other than an experimental way, by transplanting the same tumor in many animals, to compare the faculty of different tumors to infect.¹ It is impossible at present to indicate with certainty the causes of the different behavior of different tumors. One difference between the cystic sarcomas of the first and the third series, consisted in the fact that in the first series cells dividing mitotically were found inside of the cysts; in the third series such cells were not present in the cysts. This fact may also explain the different results obtained by injection of cystic fluid in these two series.

4.—ON THE INJECTION OF FILTRATES OF TUMOR TISSUE PREVIOUSLY MINCED IN .7% SODIUM CHLORID SOLUTION.

An important question was if it would be possible to produce tumor formation after having excluded the injection of tumor cells by previous filtration. In one of my former papers I reported upon an experiment which consisted in the injection of minced tumor filtrate through a Berkefeld filter. The result was negative.² The new experiments had the same result as the former ones, no tumors developing after the injection of tumor juice previously filtered through a Berkefeld filter.

Equally unsuccessful was the injection of a tumor suspension filtered through ordinary filter paper. The injection of the supernatant fluid of tumor suspension proved, however, successful in several cases. It would seem that the implantation of small masses of tumor cells, or of an agency connected with these tumor cells, is necessary for the production of tumors.

After all these experiments, it can with great probability be excluded that some microorganism capable of existing outside of the cell, and so small that it can be filtered through a Berkefeld filter, is the cause of these sarcomas. Such microorganisms however are, as is well known, responsible for several other pathologic processes, and according to the just published experiments of Marx and Sticker, they are the cause of contagious epithelioma of the fowl, in which proliferation of epithelium is taking place.³

V.—ON THE INJECTION OF HYALINE BODIES TO BE FOUND IN PIECES OF TUMORS KEPT OUTSIDE OF THE BODY.

Pieces of sarcomas kept outside of the body for several weeks frequently show under the microscope many hyaline bodies of different sizes. These globules have been believed to be microorganisms causing tumor formation. I injected the fluid containing large numbers of these bodies derived from the sarcoma of rats, into healthy rats without any subsequent growth of tumors. It seems much more probable that these hyaline bodies are disintegration products of cells or nuclei.

The experiments recorded here only represent the beginning of a line of experimentation which is capable

¹ By "infection" is not meant that a microorganism must be at the base of tumor formation.

² My first experiments on the injection of filtrates of tumor juice in animals of the same species were made in 1899 in cattle affected by carcinoma. Here also the results were not followed by the formation of tumors. Simultaneous with my second series of transplantations of tumors, M. Herzog carried on similar experiments on the injection of filtered juice, equally with negative results (Journal of Medical Research, Vol. III, 1902).

³ Deutsche medicinische Wochenschrift, December, 1902.

of further extension. At the present stage of these investigations it is therefore not necessary to form conclusions of too definite a character. It may, however, be not without value to state in a preliminary way to what conclusions these experiments seem to lead.

(a) A microorganism living outside of tumor cells and passing through the pores of the Berkefeld filter is not, in all probability, the cause of the formation of sarcoma in rats.

(b) A microorganism living outside of tumor cells and resembling organisms like the tubercle bacillus, or belonging to the class of blastomycetes, is probably not the cause of the formation of sarcoma. Such a microorganism would probably not be made absolutely ineffective by heating to 45° C. for half an hour. A microscopic examination of tumors not secondarily infected does not show any bacteria or blastomycetes. No giant cells characteristic of granulomas caused by the tubercle bacillus or by the blastomycetes can be found in these sarcomas.

(c) The following possibilities remain: The formation of sarcoma is caused by an organism living outside the tumor cells, possessing however, a similar sensitiveness to heat as do the tumor cells themselves. Such organisms would have to be, as we may conclude from the foregoing experiments, larger than red blood-corpuscles as they seem to be unable to pass, at least under ordinary circumstances, through filter paper.

But since a careful microscopic examination of the tumors showed no structures other than tumor cells and their products of degeneration, and since also injection of the hyaline bodies referred to had negative results, the existence of such organisms would seem to be improbable. Still, further experiments ought to be made before these can with certainty be excluded.

The remaining possibilities are that a very small microorganism not capable of living outside of tumor cells is present; and lastly, that a microorganism is not the cause of tumor formation. It would therefore be impossible to produce tumors by the injection of microorganisms alone, if a microorganism incapable of living outside of tumor cells is present or if no microorganism is the cause of tumor formation.¹

Further, we may conclude from these experiments that no organism sensitive to cold can be the cause of tumor formation.²

Without going into any details here I may add some further results of these experiments:

(a) After transplantation of these tumors there does not exist any appreciable period of latency in the growth of the peripheral transplanted tumor cells. They begin to multiply in a very short time, almost at once. This period of latency, however, seems to be different in different series of tumor transplantations; it was short in Hanau's and long in Moreau's experiments. It is of importance to investigate the cause of the different behavior of different tumors in this respect.

(b) Serial sections have shown that apparently separate tumor nodules of sarcoma may be connected by rows of cells, just as Petersen showed the connection of apparently separated carcinomatous cell nests.

(c) Tumor nodules smaller than a pea which never did expand actively when examined microscopically after two months, showed an active mitotic cell proliferation which is in all probability neutralized by the corresponding destruction of cells. In my former investigations I have shown experimentally that by cutting out a piece of such nodules an active growth may be produced.

(d) Sarcomatous cells are phagocytic and may, for instance, take up extravasated red blood-corpuscles. These phagocytic cells may have an appearance very

similar to the phagocytes which I found in the cavity of the Graafian follicles in the first stage of atresia. The corresponding follicular cells therefore need not necessarily be leukocytes, but may, just as the sarcomatous phagocytes, be connective tissue cells.

(e) It is an important problem under what conditions transplantation of normal tissues succeeds; about the conditions under which transplantations of tumors are successful hardly any investigations exist. It is not improbable that transplantation of sarcoma will be shown to be more frequently successful than that of carcinoma, although transplantations of different varieties of carcinoma have been successful.

(f) The result of transplantation of tumor cells as compared with transplantation of ordinary tissues seems to be a conclusive demonstration of the fact that mere displacement of adult tissue, if it plays any role at all in the production of tumors (which however is not probable), is certainly quite an unessential factor.

(g) The fact that not infected, fresh pieces of sarcoma can be successfully transplanted into the majority of animals of the same species proves that a predisposition for the growth of tumor cells is not the main factor which prevents or favors the formation of metastases.

(h) Transplantation of tumor cells through so many generations would seem to prove that the life of ordinary tissue cells may, under conditions not realized in one organism, be able to live much longer than the individual to which they belong.

FIBROMA OF THE OVARY WITH ASCITES.¹

BY

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Cases of fibroma of the ovary are sufficiently rare to warrant the report of the following case:

The case was that of Mrs. N., aged 24. Puberty occurred at 13 years. Menstruation takes place every four weeks, the flow being painless and lasting four days. She has been married five years, and had one child four years ago; labor was normal, and the puerperium without complication. The menstrual periods reappeared when the child was 9 months old. The baby was nursed at the breast until it was 18 months of age, when the mother noticed that the menstrual periods became irregular in time, occurring every six to eight weeks, and the flow became scant. There was no increase in weight, nor did she experience any pain during menstruation.

In May, 1901, an abdominal enlargement was noticed, and although the menstrual periods were regular the amount of blood lost had become so small that she concluded she was pregnant. There was a continued enlargement of the abdomen, so that when seen with her physician December 22, 1901, the patient presented the appearance of a woman at term. The general health was good, although she was somewhat anemic. Examination of the heart and urine proved negative.

Examination.—The abdomen was greatly distended with free fluid, though the walls were not tense. A hard, nodular mass about the size of a cocoanut occupied the hypogastric region, which by combined examination was found to be freely movable and not connected with the uterus.

Diagnosis.—Solid ovarian tumor with ascites.

Operation.—This was performed December 28, 1901, at the Gyneccean Hospital. The abdomen was incised in the median line and several gallons of a clear straw-colored fluid was evacuated from the abdominal cavity. The pinkish-white, hard, lobulated tumor of the right ovary was readily delivered and ligated. The pedicle was very small and consisted of the thin broad ligament and tube. The fallopian tube was atrophied and spread out over the tumor. There was only one adhesion, this to the opposite ovary. The left ovary was small and quite hard and from one end projected a cyst about the size of a walnut; it was also removed. The uterus was small and the peritoneum appeared normal. The abdomen was closed without irrigation or drainage. The convalescence was normal.

The pathologic report by Dr. McLester is as follows:

Examination of two specimens: Uterine appendices of both sides, removed by Dr. Erck.

¹ Several investigators claim to have produced tumors by the injection of microorganisms alone.

² Schüller maintains for microorganisms described by him an extreme sensitiveness to a temperature lower than that of the body.

¹ Read before the Obstetrical Society of Philadelphia, October 2, 1902.

The larger specimen is a hard, tough, elastic mass about the size of a small cocoanut. It is lobulated and in appearance is not unlike a brain hardened in alcohol. A shrunken cord is attached to the surface at one point. The mass measures 10 x 8 x 8 cm. and weighs 200 grams. Sections taken from the surface and from the deeper portion of the tumor were imbedded in celloidin and stained with hematoxylin-eosin. The microscopic examination shows the specimen to be made up of dense, wavy bundles of typical fibrous tissue. The nuclei stain well. The bloodvessels are well formed but are exceedingly few in number. No other tissue is seen and there is nothing in the microscopic findings alone to indicate the source of the tumor.

Diagnosis.—Fibroma of ovary: The smaller specimen is hard, tough, and elastic. It measures 3½ x 2 x 1½ cm. and weighs 5 grams. A fibrous cord is attached to the surface. Sections from the mass were imbedded in the celloidin and stained in hematoxylin-eosin. The section consists largely of rather dense fibrous tissue, with here and there a small nest of cuboidal cells, the cells in the center of the nest staining very poorly. In one place there are strings of elongated cells, with intervening bundles of loose fibrous tissue, converging toward a central mass of fibrous tissue, a typical corpus luteum. Occasionally a large cyst is seen lined by cubic epithelium and containing in its cavity a homogeneous gelatinoid substance, in which are small masses and columns of cells similar to those lining the cyst.

Diagnosis.—Sclerotic and cystic degeneration of ovary.

The case is of interest from the standpoint of the association of ascites with solid ovarian growths. The etiology of the ascitic fluid in these cases remains obscure. It is singular that in fibroma of the uterus such a complication is rare, while in fibroma of the ovary it is common. This would lead one to suppose that neither the mobility of the tumor, nor its size, have any causative relation to



Fibroma of the ovary with ascites.

its occurrence, for, as is well known, both conditions are common in ovarian as well as uterine growths, and mechanic irritation can safely be ruled out as an etiologic factor.

It seems more likely that the ascites is due to something intrinsic in ovarian growths, perhaps a secretion. The almost constant presence of free fluid in malignant ovarian growths would appear to support this theory. On the other hand, the absence of free fluid in almost all cystic growths of the ovary would require explanation.

Dr. Reuben Peterson¹ found ascites reported in 40% of the cases; in 8 of the 84 cases studied by him, the fluid reached such large proportions that tapping was resorted to. One of his own patients had been tapped 65 times. Dr. William Osler² reports two cases in which the ascites was caused by solid ovarian tumors, both of which had been tapped, one many times, the other four times. Both patients recovered after operation. Dr. Hunner has collected the cases bearing upon this point from the gynecologic clinic of the Johns Hopkins Hospital. Among 9,400 cases there have been 10 patients with solid ovarian tumors, the ages ranging from 32 to 63. In six of these cases ascites was present on admission. Three of the patients had required repeated tapping. All of the patients recovered after operation.

¹ American Gynecology, Vol. 1, No. 1.

² Philadelphia Medical Journal, May 24, 1902.

ANALYSES OF THE FLUIDS FROM TWO CASES OF HYDROPS CYSTITIS FELLEÆ.

BY

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Introductory.—When the cystic duct becomes occluded, usually by a gallstone, the bile contained in the gallbladder undergoes very conspicuous changes. The bile acids and pigments disappear and the fluid becomes colorless, but remains viscid. These changes are commonly attributed to the absorption of the specific bile constituents, the bile being gradually replaced by the secretion of the mucous cells of the lining membrane. It sometimes contains an admixture of serous exudate, which is shown by the occasional presence of coagulable proteid. When stones are present these are usually also bleached.¹ The amount of pigment to be absorbed is generally so small and the absorption is so slow that there is no icterus. However, Gregor² reports an unusual case, in which the presence of a stone in the cystic duct caused jaundice. Neither the common nor the hepatic duct contained any obstruction. The fluid in the gallbladder was colored, and Gregor suggests that the stone formed a ball valve, allowing the constant inflow of bile into the gallbladder, but no outflow, resulting in the continued absorption of bile.

The only paper dealing at all exhaustively with the chemical examination of this liquid is by Winternitz.³ He refers also to examinations by Frerichs, 1861; Koehl, 1886, and Terrillon, 1890. Their results, as quoted by Winternitz, will be considered in connection with my analyses. They appear to refer to cases of occlusion from gallstone. This is also true of my second case. My first case, however, is one of congenital atresia of the cystic duct.

The fluids which I examined, as also the clinical history and autopsy records of the cases, were furnished to me by Prof. Wm. T. Howard. I take this opportunity of acknowledging my obligations to him. I am indebted to Dr. R. A. Hatcher for the analyses of the second case.

AUTOPSY RECORDS.

CASE I.—*Congenital Atresia of Cystic Duct* (autopsy 290): J. M., aged 56, died at 1 a. m., December 4, 1901, from carcinoma of the stomach with metastases and acute general peritonitis. Gallbladder was distended 8 by 3.5 cm. and contained about 50 cc. of the fluid. There were no stones. Common and hepatic ducts were patulous. Cystic duct was entirely occluded for .5 cm. about midway between the gallbladder and common duct.

CASE II.—*Occlusion of Cystic Duct by Stones* (pathology 311): Mrs. M. was operated upon by Dr. G. W. Crile November 7, 1902. Gallbladder was 8 by 6 by 4.5 cm.; walls were thin and it contained about 60 cc. of fluid and 115 stones, varying in size from a barley-grain to a hazelnut. Cystic duct was 6.5 cm. long. At the opening into the common duct there was a stone 2 by 1.5 cm.

RESULTS OF THE CHEMICAL EXAMINATIONS.

Quantity: Case I was about 50 cc.; Case II, 60 cc. (W.,* 145 cc.)

Physical Characters: The fluids were entirely colorless, opalescent, adhesive, and viscid (W. and most other observers). Fluid (I) contained a fair amount of white sediment, consisting of cellular debris, leukocytes, and few epithelial cells (as with W. there was no cholesterol). Fluid (II) separated on standing into an almost clear, yellowish fluid and a flocculent white precipitate.

Reaction: (I) was faintly acid; (II) fairly alkaline, to litmus (W. neutral).

Depression of Freezing Point: (I) 0.561°, (II) 0.536°. The freezing point was taken in lieu of determining the specific gravity, total solids and ash. It shows that the molecular concentration is about that of other body liquids. (W. found: Sp. g., 1.0067; total solids, 0.976%; ash, 0.883%; nitrogen, 0.014% cc.)

Proteids: Case I: Boiling of the acidulated fluid produces no precipitate; biuret test gives a very faint rose; xanthoproteic, a faint yellow color. Case II: Boiling gives a small precipitate. The faint color reactions of I, in the absence of

* W. refers to the results of Winternitz.³

coagulable proteid, is attributable to the mucin. W., in his case, lays it to nuclealbumin. The cases of Frerichs, Koehl, and Terrillon contained coagulable proteid, as my second case.

Reducing Sugar: Negative in both cases (also W.).

Amylolytic Ferment: Absent in I (digested at 40° C. for four hours with boiled starch). The ferment appears to have been absent in every case in which it was sought. Since human bile very often, although not invariably, contains this ferment (Neumeister,⁴ p. 200), it would appear that it is destroyed or absorbed in these cases.

Bile Pigments: These are excluded in both cases by the absence of color.

Bile acids are absent in both cases (as also in those of W. and Frerichs). Neither Plattner's crystals, nor Pettenkofer's test, nor Hay's test could be obtained.

Glycoproteid: The glycoproteid of human bile has been definitely proved to consist of true mucin, while the bile of cattle contains, instead, a nuclealbumin (Neumeister, p. 198). Winternitz claims, however, that the fluid in his case contained no mucin, but nuclealbumin. This interesting statement caused me to investigate the character of this constituent with great care. Both of my fluids gave identical results.

The following tests which are common to mucin and nuclealbumin gave positive results, and agree with Winternitz: Water gives a turbid solution; 1% Na₂CO₃ gives a perfectly clear solution; dilute mineral acids give precipitates which redissolve in an excess of the reagents; alcohol produces a precipitate.

Tests Characteristic for Mucin: (a) Acetic acid produces a turbidity, but not a precipitate (agrees with W.). An excess of the acid does not clear this, nor can the turbidity be removed by filtration (with W. the filtrate was clear). Neumeister states (p. 198) that mucin is insoluble in an excess of acetic acid, whereas nuclealbumin is soluble. The solution may, however, be prevented by the presence of bile salts. Since these were absent in our specimens, the test favors the view that we are dealing with mucin. (b) The positive proof of the presence of mucin was furnished by the formation of a reducing substance on boiling with a dilute acid. This succeeded very well with both of my fluids, while it was negative in the case of Winternitz.

Tests for Nuclealbumin: I applied the test given by Neumeister (p. 200). Some of the fluid was put with an equal volume of 0.4% HCl; a few drops of 5% HCl were added to clear the fluid. This was divided into two portions. An active pepsin solution was added to one of these, and both were placed in a bath at 40° C. for four hours. No separation of nuclein occurred in either specimen.

Examination of the Stones of Case II: The stones are lobulated. The surface is smooth, of a grayish or slightly greenish color, soft, and of a soapy feel. The section is grumous and brownish red. The chemic examination shows these to consist of 93% of cholesterin, with 1.5% of ash, traces of bile pigments, and no bile salts.

CONCLUSIONS.

The contents of the human gallbladder in cases of obstruction of the cystic duct, whether this is congenital or through a gallstone, consists in a dilute solution of true mucin, of the molecular concentrations of the serum, devoid of bile acids or pigments, of ferments and of sugar. Traces of coagulable proteid may be present. No nuclealbumin was found. The gallstones producing the obstruction consisted essentially of cholesterin.

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Medical Theory in India.—While in Pittsburg last week Dr. Bertha Caldwell, of India, told some good anecdotes on the doctors of that country. One day she was riding in the cars with a Mohammedan doctor. She asked him what kind he was—an allopathist, a homeopathist, or an osteopath. He answered: "I don't know." Dr. Caldwell asked him how he practised and what kind of medicine he gave. Opening up a box he carried he exhibited seven bottles containing liquids of all the colors of the rainbow. "You see," said the Mohammedan doctor, "fever makes the patient red, and then I give him red medicine. A cold makes him blue, and then I give him blue medicine. If he is bilious he is yellow, and then I give him yellow medicine." And thus he went on to the end. She remarked: "You must be a homeopathist." "Imagine my amusement," said Dr. Caldwell, "when, on walking down the street the next day, I saw this sign in front of the doctor's door:

"Gee-ul-whiz, Servant of God.

"Homeopathist."

—Pittsburg Dispatch.

EMPHYSEMA DUE TO INJURY OF THE UPPER AIR TRACTS BY VOMITING AND PROTRACTED HYSTERIC ERUCTATIONS FOLLOWING ETHER ANESTHESIA FOR APPENDICECTOMY.

BY

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Unusual complications following apparently trifling operations under anesthesia are of the greatest interest to the surgeon. The following case, which occurred under my own observation in the practice of Dr. Bayard Holmes, while possibly not unique, is rare enough to warrant its publication:

H. O., aged 23, is 5 feet 8 inches in height, weighs 160 pounds, and is a medical student of excellent habits, addicted neither to the use of liquor nor tobacco. He is a native of Chicago, was educated in the public schools, and began the study of medicine two years ago. He is a dark blond, with a heavy head of hair and a good growth of beard. He is athletic, of nervous temperament, a good conversationalist, a good dancer, and fond of the society of women. He is careful in matters of dress, but not over fastidious. He has an appearance of youth not wholly consistent with his years. He suffered lightly from the diseases common to children. For the past three years he has suffered from acne vulgaris, and at intervals has had attacks of vomiting and eructations, seemingly of an hysterical nature. Of this latter a history was obtained only after the present operation.

His present illness began in May, 1891, with a terrible attack of abdominal pain, coming on after a dance and a ride of 30 miles in the country. The pain was so intense that a physician was called, who made a diagnosis of appendicitis and sent him at once to his home in the city. He was confined to his bed for a period of two weeks, to the house for two weeks longer, and during the time of his convalescence and for some days after, walked with the aid of a cane, and with his body bent somewhat to the right side. A second attack occurred in June, 1902. It was much less severe than the former attack, and confined him to the house only two days. His third attack was of a similar nature, and came on in the latter part of the following September. His apparent recovery was again a matter of only a few days.

On October 4 I examined the patient with Dr. Holmes at the office of the latter. The patient stated that he thought he was fully recovered from his last attack, and that he had been eating heartily for the past few days. The abdomen was found to be tender only in the region of the appendix. The inguinal glands were not enlarged on either side, there was no jaundice, no rise of temperature, nor acceleration of the pulse. The history and the tenderness over the appendix seemed to warrant the diagnosis of recurrent appendicitis. On the day following the examination the patient entered the Mercy Hospital. Here an examination of a 24 hour specimen of his urine showed nothing abnormal either as to amount or constituents.

The operation was performed on October 6, at 3 p.m. Following the usual preliminary procedure, ether anesthesia was secured, the anesthetic being given by one of the hospital Sisters. An incision 1½ inches in length was made by Dr. Holmes over McBurney's point, the muscles were separated and the peritoneal cavity opened. The cecum was sought for and found without exposing any of the intestine. To find and draw out the appendix required one minute. A ligature was passed around the mesoecum, which was then separated from the appendix. It was not necessary to ligate any other vessels. The base of the appendix was clamped, a cuff of peritoneum was made, and the appendix amputated. After touching the cut surface with 95% carbolic acid, the stump was inverted, a purse-string suture was passed through the peritoneal cuff, and a second one, including the first, was passed, with a view to insuring greater security. The peritoneum was then sutured with catgut, and this followed by separate stitches through the fascia and muscles. The skin was approximated with silk-wormgut. The whole operation consumed 15 minutes. There was no sign of present infection in or around the appendix, although it showed distinct evidence of previous inflammation by a thickening of the muscularis and by a band of constriction 2 cm. from the distal end. The patient was taken from the operating-room in good condition, with a pulse of 80 and a temperature of 98°. Upon recovery from the anesthetic he had some vomiting spells, which were of the usual character. Later he grew very restless, suffered further attacks of vomiting, and eructated considerable gas.

On the morning following the operation he vomited frequently and eructated almost without intermission as many as 12 times in a minute. These eructations were exactly similar to those that are observed occasionally in hysterical and dyspeptic women except that they were more violent. The patient frequently complained of a choking sensation and he sat up in bed and threw himself around in so violent a manner as to alarm his nurse greatly. Several times in the afternoon he expectorated and vomited large quantities of bright red blood.

Once there was vomited as much as one and a half to two ounces which was collected by the nurse and kept for the purpose of demonstrating its character. The constant eructation and occasional vomiting persisted all night except for a few short intervals of sleep. Toward evening of this same day, however, a most interesting complication arose. The neck began to enlarge; the swelling was soft and there was no sign of any inflammation, the pulse ranging from 72 to 96, and the temperature from 98.6° to 100.4°. But even with these findings no suspicion of the true nature of the condition was aroused. On the second day the neck was greatly enlarged, and its character was recognized by the crepitation produced by pressure over the clavicle and left breast. It was a distinct emphysema. During this day the attending nurse noticed several periods of great cyanosis when the patient was sleeping or lying perfectly quiet. The pulse record showed a variation of from 80 to 100, and the temperature from 98.2° to 100.8°. The eructations continued in just as severe a form as on the day previous and almost without intermission, except for occasional periods, when they would be displaced by a severe form of hiccough, vomiting, or by short periods of conversation. Gastric lavage was administered by the house surgeon, Dr. Pirsons, but without apparent benefit. The patient continued to be in a very excitable condition, being extremely restless and unable to sleep except for a few minutes at a time. On the third day the emphysema had extended over the whole left chest and over the anterior surface of the right chest, including both cheeks as high as to the zygomas. On account of the extreme hysteric condition of the patient and on account of the threatening consequences which had followed his eructations, Dr. Holmes told him that if he did not stop eructating it would become necessary to cut around his trachea to prevent the spread of the emphysema. He also had him dressed as if for the street and walked him up and down the wards, hoping by this means to divert him from himself and thus quiet him. He was kept up for three-quarters of an hour, and after he was put to bed his abdominal wound showed no ill effects from the exercise. An assistant male nurse was put in charge of him, who attempted to restrain the eructations and hiccough by requiring him to breathe regularly and deeply with his mouth wide open. He was kept in a sitting posture and in this position he would occasionally sleep in a semihypnotic state. By this means he got considerable rest during the night. The next morning the change in his mental condition was marvelous; his hysteria had diminished to a marked extent. He no longer vomited nor eructated. He slept for half hours at a time. He was still troubled with cough, but not to so marked a degree as formerly, and from this time on it steadily diminished. The pulse on this day ranged from 70 to 90, and the temperature from 99.2° to 100°.

During the succeeding days the temperature gradually came down to normal, he slept better, the cough diminished, and the emphysema slowly subsided. His appetite improved and by the eighth day he was sitting up. He was dressed on the fourteenth day, and two days later was discharged from the hospital.

The only explanation that can be offered for this emphysema would be an injury to the larynx or upper part of the trachea, permitting the air from the normal air-passages to escape into the lymph channels, as it does in cases of fracture of the trachea, fracture of the petrosa and ethmoid and frontal bones, and opening the sinuses of the nose; also in cases of fracture of the ribs, perforating the lung. This injury might have been sustained during the operation, or it might have been produced by the violent and protracted eructations following his first attack of vomiting. The eructations appear to me to have been sufficient to produce a rupture of the trachea or the laryngeal tissues. The extent of the traumatism was shown by the repeated expectoration of large quantities of blood.

BRIEFS ON PHYSICAL TRAINING.

BY

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No. 5.

The Rational Aim of Physical Training Methods.

As already indicated, it is not my intention to discuss in detail, much less advocate, extremes in athletics. When I say extremes I allude to competitive athletics of various kinds—competitive in the sense of striving for records, medals or money prizes. It is obviously impossible to avoid discussing this subject incidentally and in

the way of warning against excess. When the individual desires to go into competitive athletics physiologic muscle training should be his foundation.

As I understand the subject, physical training should have four definite objects in view: (1) The acquirement of muscle command; (2) symmetric, physiologic muscular development; (3) and, this is a necessary concomitant of the foregoing, improvement in the general health, with all it implies in the way of normally increased metabolism, circulation, appetite, digestion, assimilation, and elimination; (4) specialization of muscular development in certain individuals, this specialization being necessary to attain symmetric proportionate development of various muscle groups, with due consideration of the individual equation.

The accomplishment of the first object of necessity brings with it the accomplishment of the second. The acquirement of muscle command soon enables the individual to bring about specialized muscular development where asymmetry exists. It is obvious that the fourth object is gradually attained without special effort as the other aims are being accomplished.

The first lesson that the subject should learn is the necessity of putting his brain cells in absolute volitional control of each of the various groups of muscles. His muscles should be educated to what may be termed a high degree of intelligence in order that the best results with the least strain may be accomplished. As an illustration of the principle involved I will mention the voluntary control which some individuals have over the muscles of the ear and the platysma myoides. These muscles, in the highest degree voluntary in quadrupeds, are but evolutionary vestiges and from disuse are, in the majority of individuals, practically involuntary, although their structure is of the voluntary type. In certain individuals these muscles may be readily moved voluntarily and the degree of control may be greatly increased by practice. It has been my observation that such individuals have an extraordinary degree of inherent voluntary control over the muscular system in general. It is noteworthy that even athletes who have not strived for brain-cell supremacy over muscle fiber during the early days of their training are usually devoid of control over the muscles mentioned.

The facility with which different individuals can bring the various groups of muscles under control varies widely. If what I believe to be the proper system of training is begun at a comparatively early period, it is, in my opinion, possible for almost any individual of even inferior physique to acquire the degree of muscular control absolutely essential to proper development. The length of time necessary for its acquirement varies with the degree of intelligence and persistence exhibited by the particular subject.

It is a noteworthy fact that the voluntary effort demanded for a physiologic system of muscle training has a marked developmental influence upon the brain itself. It is not possible properly to educate the muscles save through the medium of the motor centers of the brain. It is also not possible to educate the muscular system without developing the motor brain centers. This fundamental physiologic truth is too often forgotten.

The acquirement of volitional control over the muscular system demands (1) extreme concentration of the will, and the direction of the "thought current" to the muscle or muscles under immediate consideration; (2) the mutual antagonism of opposed groups of muscles.

One of the very desirable features of the system of exercises which I will suggest for the accomplishment of the foregoing objects is that it is absolutely devoid of danger.

An examination of each subject should be made to determine so far as possible the individual inherent muscular capacity and developmental necessities. A visceral examination is advisable, in case the individual should foolishly contemplate entering upon an athletic

career, and to determine the therapeutic necessities of the viscera in any given case, rather than to forestall possible dangers from the exercises themselves. When active exercises involving skill and endurance accompany or follow the system of muscle building a physical examination is a *sine qua non*.

The actual and relative development of the osseous system in any given subject is a point for very serious consideration. It must be remembered that the end and aim of physical training is, as already outlined, not the acquirement of phenomenal muscular bulk or strength, but symmetric muscular development and the acquirement of the maximum of strength and agility inherent to the subject. Mistakes in our estimation will inevitably occur, but it is better to fall far short of the ideal than to court the dangers of overstrain.

Attention is again called to the dangers of arbitrary estimates of the proportionate chest measurements in deciding the question of specialization in physical training. I would also again recur to the necessity of carefully estimating the probable capacity for muscular development of each subject. The relatively short-tendoned, bulky-muscled individual cannot be submitted to exercises tending to general muscle building without injury. He should have only such exercises as tend to promote agility and favor the acquirement of volitional control over his muscles, else he will become joint and muscle bound. The reverse is true of the long-tendoned, relatively long-muscled individual, in whom careful systematic muscle building is required.

In taking advantage of the normal muscular antagonism, the best example of which is the opposition of flexor to extensor, and *vice versa*, it is obviously impossible to inflict injury upon the muscular fiber. Powerful action of opposing groups of muscles is only possible after careful systematic training and acquirement of control of the brain cell over muscle fiber. By the time this has been acquired, although the muscles are immensely stronger than at first, and consequently are capable of exerting more power, their resistancy has become so increased that overstrain is a practical impossibility. In other words, the strain put upon any given muscle or group of muscles is never greater than the inherent capacity of resistance possessed by the opposing muscular group.

One of the paramount obstacles to the general adoption of physical culture has been the fatuous notion that a gymnasium or complicated home apparatus is necessary to training. The necessity of a simple system which can be practised without apparatus or by the aid of very few appliances is at once obvious. The question of time is a very important one and a successful system should give the maximum of developmental results with the minimum expenditure of time. Given a system which accomplishes the foregoing indications, and which at the same time is absolutely devoid of danger or overstrain, and the ideal method of physiologic muscle building is accomplished.

At the beginning of his training the average individual is likely to make the discovery that his muscle consciousness is very defective. He knows by experience in lifting or clutching at objects, perhaps, that he has muscles in his forearm. A consciousness of the presence of the flexors and extensors, pronators and supinators, he has never in his life experienced. It is well to begin educating the muscle centers of his brain and the muscle centers of the various groups of muscles by acquiring volitional control over the muscles of the forearm. This can be done by educating the muscle consciousness through movements of the fingers. The hand being placed and held in a position of extreme extension the movements of the fingers immediately discover the extensors of the forearm. The hand being held in the same position and the forearm rotated the supinator muscles are readily found. Movements of the fingers with the hand in extreme flexion demonstrate to the

subject the possession of the flexor group in the forearm. Rotation of the forearm with the hand in extreme flexion brings the pronators into play. It will, of course, be understood that in each instance the opposing groups of muscles are thrown into action to a sufficient extent to bring out of the muscles immediately under training the best that is in them. A certain amount of fatigue is experienced just as soon as the subject has acquired a certain degree of volitional control. Prior to that time little or no effect results. It is astonishing how rapidly the subject grasps the principles of this system of muscle building when once his muscle consciousness has been aroused in any given group of muscles. The acquirement of volitional control over the muscles of the forearm may thus be the foundation for the rapid education of the various groups of muscles. A number of weeks may perhaps be demanded in the acquirement of an intelligent idea of what is demanded, the time varying with different individuals, a single lesson being sufficient for some. Once the idea has been grasped, however, the progress of the subject is usually very rapid.

Once the control power over the various groups of muscles has been attained it requires but a short time to bring into subjection all of the muscles of the body. The pupil very soon learns so much of muscular physiology as enables him to determine the various opposing groups of muscles and to bring them into action. The same systematic play of the muscles should be brought about in each of the extremities in the abdomen, chest, back, and neck. Very little experience will enable the subject to exercise thoroughly all the important muscles of the body within a few minutes, from five to ten minutes night and morning being amply sufficient.

One of the advantages of the system of muscle movements outlined is that it not only does not require any apparatus whatever, but so soon as the subject has acquired a fair degree of muscle control it can be quietly practised at any time or place. I have repeatedly gone through the entire system of muscle training while standing on the front platform of a street-car, or taking an evening walk, without in the least attracting attention.

In instructing the subject in the *rationale* and method of this system of physical culture, he should be forcibly impressed with the necessity of concentrating his mind upon each particular group of muscles in succession.

There is another method that I frequently employ as an adjuvant to the foregoing which is very valuable. If the subject will concentrate his mind upon any given group of muscles, while at the same time setting the muscles rigidly, and expire vigorously and protractedly, he will find that the tension of the contracted muscles is thereby greatly increased.

This can be practised primarily with the muscles of the forearm until the idea is grasped. It can then be applied to any particular group of muscles, or to all the muscles simultaneously. Once the knack of the procedure has been acquired, this system of respiratory gymnastics is one of the simplest and most effective forms of physical culture with which I am acquainted. The subject should stand in the erect posture, maintaining as nearly as possible the normal center of gravity, with the abdomen well retracted; the arms should be extended, and the hands vigorously clenched. Every muscle should be rigidly set. The subject should now take deep inspirations, followed by vigorous, forcible, and prolonged expirations, his mind being concentrated on his muscles. A good way to accomplish the latter indication is to suggest to the subject that it is necessary for him to forcibly "blow his breath into his muscles" while contracting them with increasing vigor. This, of course, is a physiologic absurdity, but it enables the individual to concentrate his mind upon his muscles, and develops the muscle tension to an astonishing degree. The degree and rapidity of muscular development acquired in this manner is certainly surprising.

More surprising still is the slight expenditure of time and labor necessary to maintain the muscles in a physiologic condition when once it has been acquired. Ten violent expirations in the manner described, night and morning, are amply sufficient. It is, of course, better for the subject to indulge further in such muscle training at odd times, especially if he happens to be in the open air. If any particular group of muscles demands disproportionate exercise, because of asymmetry, it is a very simple matter to accomplish it by specializing voluntary movements and expiratory hypertension in the direction of the particular group of muscles demanding it.

A simple and effective method of muscular training is a combination of the foregoing with the use of a rubber cord of good size. This cord should be three feet in length and sufficiently strong to afford a pull of about five to ten pounds when put in extension. With a cord of this description, or, in lieu of it, even an ordinary towel or piece of rope, it is possible to exercise every muscle in the body, providing the individual has acquired a sufficient degree of muscle command. The individual who has acquired muscle control and a knowledge of the action of the various muscles will speedily learn the best movements and combinations of movements to accomplish muscular development by means of this simple device.

To add to the practicality of the suggestion, however, I will describe the principal movements involved in the thorough exercise of practically all the voluntary muscles. The first point to be borne in mind is the necessity of maintaining the normal center of gravity, with the abdomen well retracted, and all the muscles of the body set with moderate firmness. With the body in the position described, every movement of the arms tends to bring into action all the muscles. The play of the abdominal muscles is especially marked.

It is difficult for me to express without seeming exaggeration my view of the vital importance of training the abdominal muscles. Briefly, I believe that the muscles of the abdomen constitute the keystone of the athlete's body. Given a good, firm, well developed, abdominal muscle, and I believe it is hardly necessary to examine the rest of the muscular system, in order to estimate their condition. Any system of exercises which gives good abdominal development necessarily imparts, in my judgment, an excellent general development. A good condition of the abdominal muscles augurs well for the general condition. When the abdominal muscles are lax, the converse is true. Careful comparative measurements show that in a large proportion of cases abdominal protuberance in individuals out of condition is apparent, not real. The sagging down of the abdominal viscera and contained fat as a consequence of muscular degeneration and flabbiness of the abdominal walls, rather than an actual increase of fat or girth, is the usual explanation. I hold, therefore, that to attain the best results in exercises of a general character, for the purpose of muscle building, there should be a certain amount of specialization in the direction of exercise of the muscles of the abdominal walls. There is no danger of over-specialization, in the majority of instances, for, as has already been suggested, any exercises which are brought to bear with the body in proper position, and with the resulting tension of the abdominal muscles, is beneficial to the muscular system at large. So far as the specialization of the work in the direction of the abdominal walls is concerned, it is a very simple matter. All that is necessary is to retract the abdomen, thus putting the abdominal muscles on tension, and to practise subsequently any system of exercises that may be prescribed. A simple method of abdominal development is to walk a stated distance daily with the abdominal muscles in firm contraction. The building up of the abdominal muscular tone, and the reduction of abdominal fat is usually very rapid. Any individual who is not too lazy or too indif-

ferent to do so may accomplish a reduction of abdominal girth, and, more particularly, abdominal protuberance, simply by concentrating the attention on the abdominal muscles, and keeping them in contraction while walking about.

Another simple method of exercising the abdominal muscles, and one which gives speedy and excellent results, is the following:

The subject is instructed to sleep upon a hard mattress, without a pillow, lying upon the back. The arms are extended above the head, with the hands grasping the framework of the bed, although the latter is not absolutely essential. The best results are obtained by sleeping upon blankets spread upon the floor, when the subject is willing to tolerate the attendant discomfort. With the body in the position described, the abdominal muscles are placed in a state of tension, and each respiratory movement brings them fully but moderately into play without the exercise of the subject's volition. There is no possibility of undue strain, and the effect of this continuous moderate exercise of the abdominal muscles during the entire period of sleep is most salutary. The same position during sleep is an admirable method of securing chest development and straightening up round shoulders. I am aware that some physicians are opposed to the position described during sleep, claiming that it is injurious to health. I have never been able, however, to appreciate any rational objection to it, nor do I know of any evidence upon which such objection could be justly based.

The principal advantage of a rubber cord in practicing the exercises about to be described is that it gives a certain amount of elastic resistance to the muscles which is very stimulating to them when in action. Taken in conjunction with the resistance of the opposing groups of muscles, it constitutes practically "live resistance"—a very important factor in muscular training. The first essential in the use of this apparatus is to assume a correct position. The person should stand with his feet in the position ordinarily assumed in walking, so that the body is firmly placed, the heels being about four inches apart. This position enables him to use his muscles to the best possible advantage, this being especially true of the muscles of the lower extremities. The body should be held firmly erect, with the abdomen well retracted. The poise of the head is a very essential point, as upon it depends largely the tension of the muscular system in general. Excepting when the neck muscles themselves are to be exercised, the head and neck should be carried perfectly straight. In this position the trapezius and deltoid muscles can be best brought into play—a very important matter in connection with neck and shoulder development. A slight variation of the position of the neck forward, backward or laterally enables the subject to bring the various groups of neck muscles into action.

The correct position of the body having been assumed, the most effective movements are as follow:

1. The rubber cord is grasped in the hands, the length of cord between the hands varying with the length of the arms and the strength of the subject. Shortening the cord increases its resistance, and *vice versa*. Lengthening the cord increases the facility of movement of the scapulo-humeral articulations. The arms are now raised above the head in full extension, and the cord stretched in the hands by a pull of from 5 to 10 pounds, according to the age and strength of the subject and the progress that has been made in muscle training. The keynote of the system of training is the pull upon the cord. So long as this pull is continued, it is almost impossible for the individual to indulge in any limb or body movements whatever without bringing all of the muscles into play to a greater or less extent.
2. The pulling upon the cord being continued, it is brought down to the back of the neck. Care should be taken to keep the head in the same erect posture as in beginning the work. The arms are again extended above the head to their full capacity, and the movement slowly repeated a number of times proportionate to the experience and strength of the subject. Five or six times is usually amply sufficient, even after considerable progress has been made. With each movement full inspiration and expiration is made, the breath being held

at the end of inspiration, at a time corresponding with the greatest muscular effort, *i. e.*, in bringing the cord down to the back of the neck. This movement is especially valuable in developing the back muscles.

3. The arms being fully extended above the head, as before, the cord is brought down to the pectoral region, the number of times corresponding to the previous movements. It is well to systematize the various movements, so that the number of repetitions shall be the same throughout.

4. The cord being brought down to the back of the neck, the arms are fully extended horizontally, one after the other, the extension of one arm being resisted to a certain degree by forced flexure of the other. The amount of force necessary in extension is obviously regulated entirely by the amount of resistance afforded by the opposite extremity. This is entirely within the subject's control. This movement brings into play not only the muscles of the shoulder, back and upper arm, but also those of the forearm.

5. The arms being held horizontally at full extension straight in front of the body, the body is rotated, first, upon the hips, and, second, upon the thighs, as far in each direction as possible. The effect of this movement is much more general than might be supposed, for with the body in the proper position, *i. e.*, with the center of gravity properly maintained, practically every muscle in the body is brought into play.

6. The forearms are flexed upon the arms, the elbows brought well into the sides, the cord being stretched across the front of the chest at a level with the pectoral region. The arms are now alternately extended and flexed.

7. The arms being extended straight in front of the body, and the muscles firmly set, the cord is stretched by each hand in alternation. This movement brings the muscles of the arms and forearms into action in a manner to which they are unaccustomed, and is similar in this respect to some of the Swedish movements.

8. The forearms are flexed upon the arms, with the elbows to the sides, and the clenched hands in firm flexion. Maintaining the hands in this position, the arms are repeatedly extended in front of the body.

9. The foregoing movement is repeated with the clenched hands in extreme extension.

10. The arms are extended horizontally and the cord stretched and relaxed alternately, by rotating the arms and forearms.

11. The arms are placed in full extension behind the body, the cord extending across the thighs. Swinging movements of the arms forward and back, and from side to side, and pulling on the cord by separation of the arms, combined with rotatory movements of the arms, produces very powerful action of the arm extensors, and especially of the triceps.

12. The arms are held completely extended above the head, and the body flexed and extended from the hips, while the spine is held rigid. The hands are brought as far forward as possible in the forward movement, and as far backward as possible in the reverse movement.

It may be supposed that in the foregoing movements the muscles of the lower extremities are neglected. A few lessons, however, will convince the most skeptical that this is not true. If it is desired to specialize the movements in the direction of the lower extremities, all that is necessary is for the subject to raise and lower himself upon his toes, and rotate the body on the thighs while the arms are held in extension and the cord extended above the head.

One of the advantages of the foregoing system of muscle building is that it conduces to suppleness of joint and muscle fiber. Although the movements are not rapid, the quality of muscular fiber developed thereby is well qualified for rapid action, which depends upon the degree of muscle control and muscle sense, rather than upon muscle strength. The system differs in this respect from all other methods of muscle development which involve relatively slow muscle movements.

Mortality in Montreal.—The total number of deaths for Montreal during 1902 was 6,271, as compared with 6,915 of the year previous, a decrease of 644 deaths. This decrease is probably due to the cool summer of 1902, which affected the infant mortality to a great degree, but it may also be partly attributed to the general improvement in the health of the city.

SPECIAL ARTICLES

THE MODERN MATERNITY HOSPITAL: ITS CLINICAL MATERIAL, EQUIPMENT AND INFLUENCE UPON SPECIALIZATION IN AMERICAN SURGERY.¹

BY

BARTON COOKE HIRST, M.D.,

of Philadelphia.

Our maternity hospitals have been designed and conducted heretofore for the sole purpose of housing a woman during her parturition and a short lying-in period. Their management, both lay and medical, has ignored the fact that almost all the diseases of women are the direct consequence of childbirth and could be cured or prevented by appropriate surgical or other treatment during or at the close of the puerperium, and that all of them, with one or two exceptions, are complications of childbirth. What are the results of this practice? As one example, the most dangerous and interesting complications of the child-bearing process, such as neoplasms of the genital tract, cannot receive proper treatment in the very places that should be designed for their reception. Many of these institutions, presided over by professed experts in obstetrics, have discharged numberless women with unrepaired injuries of the genital tract, displacements of the uterus, subinvolution, endometritis, the pelvic inflammations of infection, diastasis of the recti muscles,



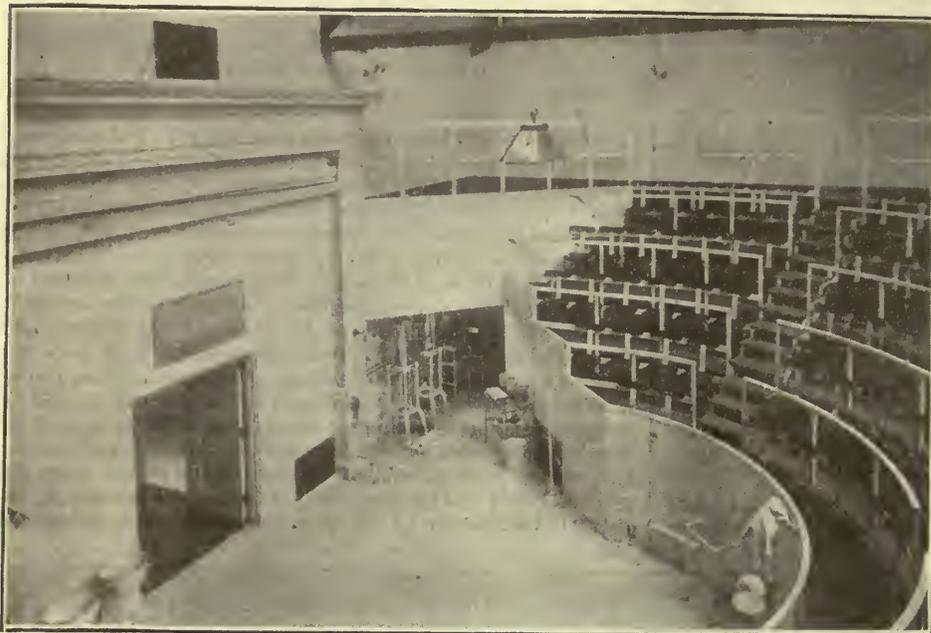
Maternity Hospital of the University of Pennsylvania.

splanchnoptosis, and lacerations of coccygeal joints, so that the sins of omission and commission on the part of one set of specialists have developed another set to do the work properly belonging to the first. Many of us have seen a more logical system. We have been compelled to complete our special education in Germany. We have seen there the maternity hospital as the basis of the department of gynecology, in the proper sense of the word, including both the diseases of women and obstetrics, and the professor of obstetrics in all of the great medical schools of Europe in charge of the department for diseases of women.

We began a movement here some years ago, which is becoming general in America, and will have far-reaching consequences. As a result of hard and unremitting work for the past 13 years in raising the money, there has been established a maternity hospital on the University of Pennsylvania Hospital grounds that satisfies the ideals with which the undertaking was begun. There is provision for privacy and isolation of the patients so that thorough instruction of students can be carried out in the individual case without undue exposure; there are 52 beds at present; the equipment in instruments, appliances, and furniture is the best that can be procured, but what constitutes our special claim to distinction, I think, is the addition to the hospital building of the Anna Dike Scott Memorial Operating Amphitheater, built, furnished, and equipped for the performance and exhibition of the pelvic and abdominal surgery frequently demanded in the proper treatment of child-bearing women as well as for the display of all the operations and maneuvers required by the child-bearing act itself.

¹ Read before the Philadelphia Obstetrical Society, March 5, 1903.

No patient leaves the institution with any of the injuries of childbirth, displacements of the uterus, subinvolution, endometritis, injured coccyx, splanchnoptosis, diastasis of the recti muscles, the pelvic inflammations, neoplasms of the genital canal—in short, with any disease or abnormality of the pelvic or abdominal organs which follows or complicates parturition.



Anna Dike Scott Memorial Amphitheater. The sterilizing plant is purposely put in view of the students.

All the obstetric operations proper are conducted with the same attention to the details of aseptic technic that should prevail in any surgical clinic, and are all performed before the class.

That the patient should leave a maternity hospital in as good or in better physical condition than she entered it, is a proposition no one, I think, can successfully dispute. I find all of my associates in the important obstetric chairs of the country in agreement with me. In New York a hospital is in course of erection embodying this idea in the most liberal way.

It is safe to say that a maternity hospital in the future must be erected and equipped for the broader work now demanded of it, if it is to rank in the first class.

Granted that such institutions in the future in America will do all that their patients have the right to expect of them, some interesting consequences are inevitable. Many of the diseases of women will in time disappear, as the students trained in these hospitals put into effect the lessons they have learned, and every community is provided with at least one physician who is capable of recognizing and correcting all the consequences and complications of childbirth before they become chronic and wreck the individual's health.

A maternity hospital managed on modern principles will afford its surgeons much the largest clinical experience to be obtained in many of the diseases of women.

Take, for example, complete tears of the perineum through the sphincter. We had last year 15 such operations, mainly from our large out-patient department and other sources. This winter we have already had 12 at all periods after the original injury, and shall have at least 20 before the season is over. It is the same, in larger proportion, with all the injuries of the genital canal. Such things as displacements of the uterus, injured coccyges, diastasis of the recti muscles, the pelvic inflammations of puerperal origin, neoplasms of the birth canal complicating parturition,¹ we naturally have in larger num-

¹In one clinic hour this year we showed a hysterectomy for fibromyoma in a case sent to the hospital as one of pregnancy; the removal of a fibromyoma of the round ligament in the groin as large as an infant's head, which grew in pregnancy and was removed two weeks after delivery, and a large fibromyoma of the anterior uterine wall, obstructing labor, requiring a forceps delivery before the class and a myomectomy later in the puerperium.

bers than any other sort of clinic could provide, from our in-door and out-door services, and from physicians who refer patients to us.

The effect of this broader legitimate and necessary work of our modern maternity hospitals upon specialization in American surgery is interesting food for speculation.

There are at present three kinds of specialists in America competing for the surgical treatment of the diseases of women: the general surgeon, the surgeon who limits his work to the treatment of diseases of women, and the surgeon who is trained in obstetrics as well as in the diseases of women. To which of these specialists will the work eventually gravitate? Will it be to the general surgeon who lacks special training in pelvic diagnosis, maneuvers, and technic? Will it be to the surgeon who lacks training in half of the science of gynecology, all practical knowledge of the relations of the diseases of women to childbearing, though every one of them must be considered in that relation in the woman's past, present or future history, and experience with the incipency of most of the diseases of women? Or will it be to the specialist who has had adequate training in both branches of gynecology; who must recognize and treat all of the diseases of women in all their stages; whose work

demand a training in abdominal and pelvic maneuvers, diagnosis and treatment of every kind?

The future will answer these questions for America. They have already been answered in the Teutonic, Scandinavian and Slavonic countries of Europe, as I believe they will be answered here. Some of the Latin countries alone, particularly France, have the same system that we have had, but I doubt if we will continue to imitate them in this respect.

SOME PROBLEMS OF PREVENTIVE MEDICINE.¹

BY

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Preventive medicine is the one branch of medical science with which the medical profession, unaided, is utterly unable to cope successfully; on the other hand preventive medicine, in the light of our present knowledge, with the enthusiastic cooperation of an educated public, acting under the guidance of a thoroughly organized medical profession, offers greater possibilities for good to the whole human family than any other branch of the healing art, or than any other department of human knowledge. It is the purpose of this essay to set forth in plain language the acknowledged facts concerning "that branch of medical science that aims to prevent or ward off disease by properly directed hygiene, personal and public."² The subject will be discussed under two chief heads: I. The relation of the general public to preventive medicine. II. The relation of the medical profession to preventive medicine.

I.—THE RELATION OF THE GENERAL PUBLIC TO PREVENTIVE MEDICINE.

Patriotism and national pride are qualities which, more than any other, are inborn; and if we except that small band of perverted individuals who travel beneath the red flag of

¹Read before the Minnesota State Sanitary Association at its annual meeting in St. Paul, December 18, 1902.

²Gould: Illustrated Dictionary of Medicine.

anarchy, we may say without fear of contradiction that practically every sane citizen of the United States is imbued with a spirit of national pride, and glories in all that contributes toward the greatness of our country. Before the summit of national greatness can be achieved the summit of national health must be surmounted. This lesson the people must learn, and having once learned it, we shall have every intelligent citizen enlisted in the cause of preventive medicine. When we consider the enormous amount of sorrow and anguish which comes into millions of homes each year through sickness and death due to preventable diseases, it would seem an easy matter to enlist under the same banner those who bear the largest portion of the grief—the wives and mothers. Once teach them how they can help, and they may surely be depended upon to do their share.

Education of all the people concerning the rudiments of public and private hygiene must be the first step in our battle against preventable disease. Those who have in charge educational affairs must see to it that in every public school and in every university in the land certain facts concerning preventive medicine are taught. Opinions will doubtless vary as to the amount of such instruction that should be given, but there can be but one opinion concerning the value of some such teaching.

It is my opinion that in schools for children between the ages of 10 and 16 it should be taught that certain diseases are contagious, and what those diseases are; that physicians know how to prevent these diseases from spreading and that absolute obedience to their directions will keep others from contracting the disease. It might further be taught that nature's weapons against contagious diseases are sunlight, fresh air and pure water, and that these weapons are freely furnished in ample quantity to every one. A few simple lessons along these lines with object lessons in personal cleanliness, insisting upon clean hands and faces, and neatness of dress, explaining the reasons therefor would be sufficient for children. Older students in the last year of the high schools and in colleges should be given more detailed instruction. They might be taught something about the microorganisms of disease, the difference between contagious diseases such as smallpox and scarlet fever, and communicable diseases such as tuberculosis and typhoid fever, and the different kinds of precautions necessary to prevent the spread of these different kinds of preventable diseases. The older students should also be taught something about the history of the great epidemics which have occurred in former times, and how rare they are under the modern system of inspection and quarantine; they should be taught the history of the discovery of vaccination, and the history of smallpox before and since its general introduction; something, too, of municipal and national sanitation, and how important it is to public prosperity and to private happiness. I would suggest also that it should be taught that the science of medicine, while not an exact science, is a true science, just as chemistry or astronomy are and that it has no secrets, and that all who claim to possess secret knowledge of medicine, knowledge not possessed by or inaccessible to legitimate practitioners of medicine, are charlatans and quacks and are trying to cheat the public.

If a liberal education included such instruction as I have outlined it would do much to abolish quackery, which is one of the worst enemies of preventive medicine. Let us pause for a moment and see what we might expect of our citizens and our legislators if their education had included a knowledge of these things. Recognizing the possibilities of public hygiene, and realizing its importance, not only to the general prosperity, but to the welfare of each individual, the people would demand that the National government as well as each State and municipal government should conduct the affairs of their health departments under the direction of the leading sanitarians in the country. A Department of Hygiene with a secretary of Public Health in the President's cabinet would be recognized as a necessity and demanded by the people. Every State and every municipal health department, while consisting of an independent and complete organization, should be under the authority of and subordinate to the National Department of Hygiene. There should be a national laboratory at Washington, and every State and every municipal health department

should have its own laboratory, each having the necessary equipment, and each under the direction of skilled bacteriologists. Each community should have its isolation hospital for the care of the more dangerous contagious diseases, such as scarlet fever and diphtheria, and its special smallpox hospital. These hospitals, if provided with all the comforts and conveniences needed for the care of the sick, would be self-supporting, and those who so desired could be cared for by their own physician. Thus an ideal machinery for fighting communicable disease would be set in motion, and at a comparatively insignificant cost. The contagious disease hospital in communities educated up to the importance of having all cases of scarlet fever and diphtheria taken there for treatment would undoubtedly in a very short time cause epidemics of these diseases to cease to occur.

An exceedingly important function of the Department of Hygiene would be the general supervision of matters concerning medical education and the issuing of licenses to practise medicine. A common standard for entrance to and for graduation from all medical schools should be established, and no medical school should be permitted to exist which did not come up to this standard. License to practise medicine should be issued only to those who could demonstrate their fitness to the proper authorities, and once having received his license the physician should be permitted to practise in any part of the country. The educated people would realize that it is as dangerous to allow uneducated persons to practise medicine as to practise law; they would no more permit lives to be entrusted to unlicensed so-called doctors than to unlicensed engineers or pilots, and they would demand that all licenses should be based on a common standard of knowledge. The educated people would appreciate the evils which threatened the community in the persons of antivaccinationists and the antiscientists in general, and would realize that freedom of speech and action must be denied to such individuals on account of their hostility to the cause of preventive medicine, just as such freedom of speech and action must be denied to anarchists on account of their hostility to all government.

The educated people would demand that dishonest, suggestive and indecent advertisements which at present appear boldly in nearly all newspapers should be suppressed on the ground that they are offensive to good morals as well as dangerous to the public health. Physicians might then with perfect propriety and with no loss of dignity advertise their names, addresses, and office hours in the newspapers, which would make up to the latter what they would lose from the quacks, and would also be a convenience to the public. The newspapers, no longer afraid to offend their most liberal patrons, the quacks, would then be free to discuss fearlessly and intelligently medical subjects and they would undoubtedly have qualified medical men connected with their editorial staffs, who would handle these topics in such a manner that the newspapers would become most valuable aids to the cause of preventive medicine.

Another important problem of preventive medicine will be solved by the educated people: the problem of inherited disease. The time will surely come when the people will demand that the insane, the epileptic, the syphilitic, the habitual criminal, and the habitual drunkard, shall be refused the legal right, now freely given them in all communities, to marry and hand down their diseases. This will be a delicate problem to handle, but the question of the regulation of marriage is one which at the present time is being seriously studied by many thoughtful persons, and I confidently expect to see some steps taken toward the elimination of at least some of the more strongly hereditary diseases in the not distant future. There will always be in every large community a comparatively small number of people from whom we may expect that the cause of preventive medicine will receive an immense amount of assistance. People of great wealth who possess at once the desire and the means to contribute something toward diminishing the suffering and increasing the happiness of their fellow beings will begin to realize that it is a greater benefit to mankind to help to prevent sickness and pain than it is to contribute to its cure or its relief. The possibilities of preventive medicine being fully appreciated, the rich will begin to understand that they can help to transform these possibilities into realities by

the generous endowment of special institutions for medical research and for the encouragement and assistance of those individuals who possess the inclination and the ability but who lack the means to spend their lives in the study of the various scientific problems in connection with the prevention of disease which still remain to be solved. It is not possible to estimate the immense advances in our knowledge of the causes and means of preventing preventable disease which will be accomplished by the large numbers of enthusiastic and earnest students who will be given the opportunity to carry on direct scientific investigations through these endowed institutions for medical research.

From the foregoing, which is but an outline of what may be expected from the educated people, it will be seen that both as private citizens and as legislators the relation of the general public to preventive medicine is a most important one, and that the possibilities of this branch of medical science will never be achieved without the intelligent and hearty cooperation of the people. Let the people be made to appreciate thoroughly these possibilities and there need be no fear that their full cooperation will not be forthcoming.

II.—THE RELATION OF THE MEDICAL PROFESSION TO PREVENTIVE MEDICINE.

It will, I think, be conducive to clearness and order if we take up the more important preventable diseases separately, and discuss the methods by which they may be prevented, methods for the most part quite familiar to all physicians, but which cannot always be carried out without the intelligent cooperation of the people.

The following diseases will be discussed very briefly:

Tuberculosis,	Measles,
Smallpox,	Cholera,
Typhoid fever,	The plague,
Yellow fever,	Cholera infantum,
Malaria,	Leprosy,
Puerperal fever,	Syphilis and the venereal diseases,
Diphtheria,	Parasitic diseases of the skin.
Scarlet fever,	

This list does not by any means include all the preventable diseases, but it includes the most important, and if the close of the twentieth century can foreshadow the extinction of epidemics of diseases in this list, a possibility by no means visionary, the century will go down in history as the grandest of all the ages.

Tuberculosis.—This is the most important, since it is the most prevalent and the most fatal of the preventable diseases. Not a contagious disease in the ordinary sense of the word, tuberculosis is communicable only by the direct transference of the tubercle bacilli from one individual to another or by the inhalation or the ingestion of the bacilli which have been either deposited on the ground with the sputum of an infected individual, and having dried have been inhaled with the dust of the air, or have gained entrance to the mouth through the contamination of some article of food or drink. The extinction of tuberculosis is to be brought about by destroying the tubercle bacillus and by so treating tuberculous patients that close contact between them and the well is avoided. Quarantine is not essential, although whenever practicable the treatment of persons suffering from tuberculosis in sanatoriums is strongly recommended. It must be borne in mind that a very large proportion of cases of tuberculosis, recognized in the very early stages of the disease, are curable if properly treated. The ideal treatment is rest, forced feeding, and life out of doors in a proper climate. When expense is no object this treatment may be carried out in home surroundings, but to the majority this will be impracticable, and to the very poor impossible, hence the necessity for large sanatoriums in every community. The sanatorium not only cures, but it restrains the individual from being a menace to others, and it educates him and his friends in the manner in which a tuberculous individual should care for himself and should be cared for, so that the danger of communicating the disease will be reduced to a minimum.

An important preventive measure against tuberculosis, which every large community should adopt, is the maintenance of an accurate census of all cases of the disease and a careful

record of their geographic distribution. This, not for the purpose of quarantine, but in order that the local health department may have knowledge of the prevalence of the disease and may communicate, either directly or through their physicians, to the patients instructions as how to avoid spreading it. Tuberculosis is without doubt frequently acquired by passengers in railway coaches, especially in sleeping-cars, and the railroad companies can do much to aid the cause of preventive medicine by adopting thorough methods of disinfection after each trip.

One other matter concerning the prevention of tuberculosis must be alluded to, although space will not permit of its extended discussion, and that is the relationship of bovine to human tuberculosis. I believe that there is sufficient evidence to prove that occasionally at least, bovine tuberculosis has been transmitted to human beings, and that therefore the inspection of all dairy herds is imperative, as is also the inspection of all cattle slaughtered for the market. There is at present a fairly efficient system of government inspection of meat, but owing to recent doubts which high scientific authority has cast upon the likelihood of the communication of bovine tuberculosis to man local inspection, at least in some localities, has become lax. This is unfortunate, and it seems to me to be the urgent duty of the health officers to see to it that the most rigorous inspection of dairy herds is maintained.

Smallpox.—Of all the contagious diseases smallpox is probably the one which the properly applied principles of preventive medicine could most easily stamp out of existence. Compulsory vaccination in infancy and revaccination at the beginning of school life; isolation of patients suffering from the disease and subsequent thorough disinfection of the premises and of all articles which have come in contact with the patient—these simple measures would banish smallpox in a single generation. The opposition of many persons to vaccination is due partly to ignorance of the history of smallpox before and after its introduction and partly to the unfortunate accidents which have occasionally followed improperly performed vaccinations. It is the duty of physicians to educate their patients and the public generally concerning the relations between vaccination and smallpox and it is their further duty to see to it that every vaccination is performed under absolutely aseptic conditions and that the site of the vaccination is properly protected afterward. Badly inflamed arms and infected vaccination wounds never follow a vaccination properly performed with fresh lymph and when the vaccination wound has been kept perfectly clean. While there exists practically absolute unanimity of opinion among medical men as to the immunity to smallpox conferred by vaccination there is at the present time some diversity of opinion on the subject of the best method of vaccination and as to what is the best method of preparing and dispensing vaccine virus. I believe that the subject is of sufficient importance to warrant the appointment by Congress of a special commission of experts to take evidence and to deliberate upon the subject of the proper technic of vaccination and to issue a report upon the subject. If there existed a Minister of Public Health this matter would come directly within his jurisdiction. Failing the appointment of such a commission by Congress the American Medical Association would do well to appoint a special committee from its members to investigate and report upon this subject. Although of late years smallpox has become a much milder disease than it formerly was, whether on account of an inherited immunity due to successive generations of vaccination, or whether due to an attenuation of the virus itself, it is not possible to speak positively; it is still a disease greatly to be feared, and as it is one against which we possess such perfect weapons, it is surely not too much to hope that it will become extinct in the not distant future.

Typhoid Fever.—This would seem to be a disease very easy of prevention since we know that the germs of the disease always enter the body with articles either of food or drink. An individual who drank no liquids that had not been boiled and who ate no food that had not been thoroughly cooked would never contract typhoid fever, since we know that the germs are destroyed by boiling and cooking. Practically the problem of the prevention of typhoid fever is more difficult than it appears at first sight. It is perfectly possible for every large city to

furnish a supply of pure water to its inhabitants, although there are numerous conspicuous instances of large cities where this is not done and where as a consequence at certain seasons of the year typhoid fever is very prevalent. Given the pure water supply we have only partially solved the problem, since there is always a large population on the outskirts of every city which does not have access to the city water and must depend on wells or streams or lakes. Then, too, even those whose water supply is above reproach are exposed to the danger of drinking milk which has stood in cans which have been washed with typhoid infected water, or of eating raw vegetables or fruits which have been contaminated before they reached the market of the consumer. Physicians have a very important duty to perform in regard to the prevention of typhoid fever and a duty which is too often neglected. They must see to it that all the feces and all the urine of every typhoid fever patient is disinfected before it is thrown where it may contaminate the soil and the surface water. In this way only can typhoid fever be stamped out. It has been demonstrated that the urine of typhoid fever patients may contain the typhoid bacilli for many months after the apparent recovery of the patient, and it has been further demonstrated that there are drugs which administered internally will destroy the bacilli in the urine; hence the urine of every patient must be examined and the patient must be given the proper remedies until the bacilli of typhoid fever can no longer be found. The local health officer should be notified of every case of typhoid fever, so that he can see that the proper precautions against the spread of the disease are taken.

A most important function of preventive medicine which may properly be discussed at this time relates to the management of soldiers, particularly when in the field. It is well known that in every campaign more soldiers perish from preventable diseases than from the bullets of the enemy. Typhoid fever is the most prevalent and the most fatal disease among soldiers, and it should be the easiest to prevent. The first essential, in order that the medical department of an army may be brought to its highest efficiency and may be able to accomplish the greatest amount of good to the men under its care, is that the status of the medical officers in regard to rank, privileges and emoluments should be such that the best men in sufficient numbers will be attracted to the service. The second essential is that the medical department should be an entirely distinct organization, and should be supreme in its authority in all matters pertaining to the management of its own affairs. These conditions do not exist at present, at least in the United States Army.

The prevention of typhoid fever in armies is entirely possible, and at a comparatively trifling cost; trifling, at least, in comparison with the cost of epidemics of the disease. Let us see what a properly organized medical corps could do toward the prevention of typhoid fever among soldiers in the field. In the first place, all camps would be selected by the medical officers; a great step in advance, for many epidemics of typhoid fever are the result of improperly selected camps. In the next place, having its own transportation equipment, the medical department would furnish and transport with its baggage a sufficient number of portable incinerators to destroy all the feces and urine of every soldier in the army, so that none of it could reach the ground. This has been demonstrated to be perfectly practicable and much less expensive than the present cost of epidemics of typhoid fever, which would be prevented by these precautions. Facilities for boiling all water used for drinking purposes should be provided, although this would cease to be necessary if contamination of the ground and of the surface water was prevented, and if all camps were selected with reference to their water supply. Emergencies would occasionally arise as the result of which the incinerators would not be available for use and when contamination of the ground would be unavoidable, and under such circumstances all drinking water should be boiled. All soldiers should be taught by their medical officers the reasons for and the importance of the above-mentioned precautions against disease just as they are now taught the importance of using their first-aid packages, when wounded, as a precaution against septic infection.

The wellknown agency of insects, especially flies and mosquitos, as carriers of disease germs, has not been alluded

to, and in every camp precautions should be taken to protect the food from flies so far as possible, as well as to protect the men from mosquitos.

It is the poorest kind of economy for a government to attempt to economize at the expense of the health of its soldiers, and the prevention of typhoid fever alone would have saved many millions of dollars more than it would have cost in any of the campaigns of modern times.

Yellow Fever and Malaria.—These two diseases are grouped, not because there is any direct relationship between them, but because recent investigations have suggested, if indeed they have not demonstrated, that the same methods are indicated for the prevention of both diseases. According to the views of those who have spent much time in studying this subject, the pathogenic organisms of yellow fever and of malaria need for their complete development an extra corporeal existence, the intermediary host being a certain species of mosquito, and according to this theory these diseases are communicated from man to man by mosquito bites. While falling short of absolute demonstration, there is a mass of evidence which seems almost conclusive that this theory is correct, and that when these diseases have suddenly appeared at a long distance from where they are endemic, they have been carried by infected mosquitos. Accepting this theory the extermination of the pathogenic mosquito should result in stamping out these diseases. The experiences of those having charge of the sanitary affairs of Cuba since that island has come under American control have been most interesting and most convincing on this subject. In the *British Medical Journal* of January 11, 1902, will be found a quotation from a private letter written to Major Ronald Ross by Major W. C. Gorgas, chief sanitary officer of Havana, in which the latter says:

The work here has been much more successful than I had hoped when we started. There seemed to me very little prospect for accomplishing much when we commenced in February of 1901, but as you will see from our reports, our results have been most positive. For the first time since the English occupation, 1762, we have had an October free from yellow fever, and malaria decreased more than one-half. Mr. Le Prince, directly in charge of mosquito work, estimates that mosquitos have been decreased 90% by the work as compared with this time last year. Of course this is a difficult statement to substantiate. It is a matter so much of individual opinion. But I have convinced myself that they have been greatly decreased. My own quarters on the bay front, where they have always been very bad, have had none practically for the last six months, and I know many other localities where similar positive statements can be made. But this is certain, that last October we had 74 deaths from yellow fever, this year no deaths and no cases, and from malarial fever last year 25 deaths, this year 19. This, I am convinced, is entirely due to the mosquito work. The disappearance of yellow fever, however, I think is almost altogether due to the killing of infected mosquitos at the infected point. We do this by burning pyrethrum powder in the infected house and all the neighboring houses. It has been extremely gratifying to see how promptly the focus of infection is stamped out in this way, and it has been likewise surprising to me. I knew that some mosquitos must escape from the most careful mosquito hunt, but we have apparently entirely controlled the disease this year by this method when the conditions were exceedingly favorable for its spread. It must be that there are only a few infected mosquitos in each individual case, and that they remain pretty close to the point of infection. And this probably is rendered greater, if we consider that it takes a mosquito 15 or 20 days after biting before he himself is able to transmit the disease. If 50 mosquitos bite a yellow fever patient, it seems to me quite probable from natural causes that only four or five would survive the 18 or 19 days required to render them dangerous.

If later investigations, which are being vigorously carried on in various parts of the world, confirm the theory that yellow fever and malaria are communicated to man by the mosquito, and in no other way, the extinction of these two diseases will be comparatively easy, at least in all well organized communities.

Diphtheria, Scarlet Fever, and Measles.—Although occasionally occurring in adults, these three diseases are essentially diseases of childhood, and they occasion either directly or through their sequels a great many deaths and much suffering each year.

These diseases are typical contagious diseases, and are to be combated by rigid quarantine during the attack, and complete and proper disinfection of the premises occupied by, and of all

articles which have been in contact with, the patient during the illness.

The most effective means of prophylaxis against these diseases will lie in the establishment in all communities of properly equipped isolation hospitals, where both rich and poor may go, and where those who can afford it may be cared for by the physician of their choice. These hospitals must be made attractive and comfortable, and so arranged that the mother may stay there with her child if she so desires. So soon as the people appreciate that not only do their children stand a better chance of recovery in the isolation hospital, where skilled medical attention and gentle nursing is at hand during every hour of the day, but that by removing the source of contagion at once from the home the danger to the other children is reduced to a minimum, the prejudice against these hospitals will rapidly disappear and it will become the rule, rather than the exception, for children suffering from these diseases to be taken there for treatment. It will be seen that such hospitals will be easily self-supporting, and that the income derived from those who can afford to pay will be sufficient to defray the expense of caring for the poor as well. When the majority of all cases of diphtheria, scarlet fever, and measles are cared for in the isolation hospitals, epidemics of these diseases will cease to occur. In the case of diphtheria we possess an antitoxin which is of great value not only in the treatment of the disease itself, but as a means of warding off the disease in those who have been exposed. An immunizing dose of antitoxin will in a large proportion of cases confer immunity upon a child who has been exposed to this disease.

Concerning the method of origin and the extra corporeal existence of the pathogenic microorganisms of diphtheria, scarlet fever, and measles we as yet know but little, although we may assert quite positively that their development will be prevented whenever we substitute cleanliness, sunshine and fresh air for dirt, darkness and bad ventilation.

Cholera Infantum.—This is a very dangerous disease, quite prevalent in crowded communities during the summer season, and is readily preventable. It is an acute poisoning caused by the toxins produced by bacteria developing in the milk which is fed to infants. The disease would be prevented by a proper supervision of the milk supply in large cities, a duty which every municipality owes to its citizens, and a proper handling of the milk after it reaches the consumer. I believe that it should be laid down as a general rule that all milk which is obtained from a public dairy supply should be either sterilized or pasteurized before it is fed to infants. Many dairies pasteurize the milk before it is sent out and dispense it in sealed bottles; when this is properly done the milk is perfectly safe. The Walker-Gordon laboratories, in some of our larger cities, have done much to reduce the number of cases of cholera infantum. Any intelligent mother can protect her infant from this disease by a proper care of the milk and by using a proper nursing bottle.

Puerperal Fever.—This disease, which formerly made the lying-in period a time approached with fear and trembling, and which caused so many deaths, is an instance of a preventable disease which is now prevented.

Puerperal fever, like sepsis following surgical operations, is nowadays considered a reflection upon the technic of the physician or nurse who attended the patient. This is not strictly just, because occasionally we may have an autoinfection from a source not under the physician's control, as, for instance, a suppurating fallopian tube which ruptures during parturition; but this is rare, and in the vast majority of cases proper conduct on the part of the physician will insure an afebrile convalescence after labor.

Cholera and the Plague.—These two diseases, which at various periods in the world's history have been the cause of the most fatal and disastrous epidemics of which we have any record, and which even at the present time exist and cause many deaths in certain parts of the world, are excellent examples of preventable diseases which modern methods of sanitation and quarantine are able to and do prevent. It is not at all likely that we shall ever see any extensive invasion of the United States of America, or of any of those countries where modern scientific methods of quarantine prevail, by either of

these diseases although occasional cases may be introduced from those countries where they are still endemic. In regard to the plague, the interesting fact has been quite conclusively demonstrated that rats are very susceptible to the disease and it is more than likely that rats, which commonly infest the holds of trading ships, carry the disease from an infected port and thus introduce it to a country previously uninfected. The disease is probably conveyed from the rats to man by fleas or other parasites which abound on the skin of the former. Extermination of rats, which has been an unsolved problem in all large cities for centuries, thus becomes a very important matter in connection with prophylactic measures against plague. A modern "Pied Piper of Hamelin" would be as welcome a visitor in a plague threatened community as he was in the town of Hamelin, in Brunswick, by the river Weser, and doubtless he would be much better paid. The discoverer of a ready method of ridding houses, ships and wharves of rats will indeed be a public benefactor from more than one point of view. Simpson in speaking of the basis of preventive measures against the plague, which he says must depend upon the knowledge of the disease, urges the importance of establishing, as a part of the sanitary defenses of a nation, special laboratories for organized research and inquiry into the nature and spread of the disease. When a nation is threatened with invasion by an enemy from abroad it not only relies for protection upon its army and navy as individuals, but it sees to it that this army and navy are well supplied with all the necessary implements and engines of war, and it also sees to it that, in times of peace, these materials as well as these individuals are kept in condition for immediate use when needed. No less vital to a nation's welfare is it to protect its people from the invasion of disease, and for this purpose it must rely upon the medical and scientific men who compose its sanitary protective army; but this army in order to be efficacious must be supplied with the necessary implements, and these, too, must be kept in constant readiness. The most important weapon in the hands of science in its battle against disease is the bacteriologic laboratory, and these laboratories should be supported by the government as zealously as are its other coast defenses.

This applies not to cholera and the plague alone, but to all communicable diseases.

Leprosy.—This disease, in former times much more prevalent than at present, is still indigenous in certain parts of the world, and occasionally cases are from time to time imported into the United States; indeed, since the annexation of the Hawaiian Islands and the acquisition of the Philippines we have acquired some of its favorite breeding places. The pathogenic organism of leprosy is well known, as is also the fact that under suitable conditions it is communicable from man to man, but concerning the exact method of its communicability there is still difference of opinion. The remarkable feature of the disease is its very long period of incubation, varying from many months to many years. The disease is undoubtedly communicated to those predisposed to it by prolonged, close personal contact, and probably by using utensils or other articles which have been in contact with infected individuals, and its spread is apparently favored by unclean and careless personal habits. The disease is incurable, although in a certain small proportion of cases it seems to be self-limited, and the patient may recover after a long time, having suffered certain disfiguring mutilations, as the loss of fingers, toes, or even limbs (*lepra mutilans*). The problem of stamping out leprosy, so far as our present knowledge of the disease goes, is only to be solved by the segregation in colonies of all lepers, and by absolutely prohibiting contact with uninfected persons. These leper colonies exist in various parts of the world, and their maintenance will probably in time result in the extinction of this horrible disease. Certain climatic conditions apparently exert an influence upon the communicability of leprosy. This is indicated by the fact that along our southern coast, where the disease has been introduced, it has spread to some extent, but in the northwestern States, where there exist a number of foreign-born lepers who have come from the Scandinavian countries, the disease shows no tendency to communicability. As the result of the recent acquisition of territory where leprosy exists to a considerable extent, the United States of America must now

concern itself actively in the leprosy question, and the matter of establishing a leper colony somewhere on this continent is already being discussed. The matter should be thoroughly investigated by a commission of experts, and the necessary steps taken to prevent leprosy from reaching our shores, and to segregate such cases as are already here and such as may subsequently develop.

Syphilis and Venereal Disease.—The problem of dealing with these diseases, which have been pandemic since human history began, has puzzled the sanitarians and statesmen of all ages.

Syphilis, it must be remembered, is the least venereal of all the venereal diseases, it being very frequently acquired by accidental contact either with an infected individual or with some infected object. Ophthalmia of the newborn, which is such a common cause of blindness, is often the result of gonorrhoea in the mother, and the innocent, helpless infant must bear the cross through life. In regard to the prevention of these diseases, science has no definite rules to lay down, the problems being very different from those which concern the other preventable diseases. The subject is far too broad to be more than alluded to in this essay even if I had, which I have not, any solution to offer. Undoubtedly the most powerful weapon against venereal diseases lies in a knowledge of their nature, of their prevalence, and of their danger. The majority of individuals grow up in entire ignorance of the whole subject, an ignorance which is cultivated by most educators, in the belief that the matter is one unfit for discussion before young people. I take a very different view, and believe that a certain amount of instruction, given in the proper manner concerning sexual physiology and venereal diseases, should form a part of general education. This knowledge would, without doubt, be a powerful safeguard to the individual, and hence to society against these diseases, although their extinction is hardly compatible with the frailty of human nature. As was stated at the outset, the problem of freeing society from preventable diseases can only be solved by concerted action on the part of the medical profession and of the people, but especially is it true that for the control of the venereal diseases and of alcoholism, which should also be included in all broad discussions on the subject of preventive medicine, the sanitarian, the educator, the moral philosopher, the philanthropist, and the legislator must all join hands without prejudice and meet on a common ground for a common purpose.

Parasitic Diseases of the Skin.—Indispensable to the comfort and convenience of modern civilized man is the barber, and equally indispensable to the comfort and convenience of the modern woman is the hairdresser, but barbers and hairdressers are responsible for a very considerable portion of the cases of parasitic affections of the skin and scalp. Barbers and hairdressers in all communities should be licensed and their places of business should be from time to time inspected by health officers, who should instruct them in the very simple precautions necessary to prevent the spread of contagious scalp and skin diseases, and the carrying out of these instructions should be made obligatory. An excellent plan would be to have certain rules concerning cleanliness, the washing of hands between customers, the care of razors, scissors, hair brushes and shaving brushes, the application of face powder, and the treatment of razor cuts, and so forth, printed in bold type and hung in a conspicuous place in all barber and hairdressing establishments. The patrons of such places would read these directions and would soon realize their importance and see that they were carried out. The proper sanitary regulation of barbers and hairdressers after the manner thus briefly described would undoubtedly result in a great diminution in the number of cases of contagious skin diseases, and these diseases while not dangerous to life are apt to be the cause of very great discomfort as well as mental distress to most persons.

[To be concluded.]

Antispitting Regulation.—The Select Council of Philadelphia has passed an ordinance imposing a fine of \$1 for each offence upon any person convicted of expectorating upon the floors of any public buildings or institutions. The mayor has promised to approve the measure, and physicians will see that it is enforced.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

March 7, 1903. [Vol. XL, No. 10.]

1. Laryngectomy for Carcinoma. E. FLETCHER INGALS.
2. The Asch Operation for Deviations of the Cartilaginous Nasal Septum: With Some Conditions Complicating Its Performance. EMIL MAYER.
3. Recurring Multiple Angiomata of the Septum. JOHN O. MC-REYNOLDS.
4. Mercury in Syphilis: Its Administration Hypodermically in Contrast With Other Methods. EUGENE FULLER.
5. Dosage of Liquid Medicines: A Simple Plan for Greater Accuracy and Metric Measures. CARL S. N. HALLBERG.
6. The Indentity of Nerve Force and Electricity. J. EMMET O'BRIEN.
7. The Absorption of Albumins and Globulins. CHARLES T. MCCLINTOCK.
8. Modification of the Connell Suture. RAYMOND CUSTER TURCK.
9. The Improvement of General Anesthesia on the Basis of Schleich's Principles: With Special Reference to Anesthol. WILLY MEYER.
10. Fevers of Doubtful Nature in Infancy: Preliminary Clinical Note. J. L. DUENAS.
11. A Contribution to the Pathologic Histology of Syphilitic Etmoiditis. J. L. GOODALE.

1.—See *American Medicine*, Vol. III, No. 25, p. 1058.

2.—See *American Medicine*, Vol. III, No. 25, p. 1059.

4, 5.—See *American Medicine*, Vol. III, No. 25, p. 1061.

6, 7.—See *American Medicine*, Vol. III, No. 25, p. 1062.

8.—Modification of the Connell Suture.—R. C. Turck has found work on the dog a more severe test of sutures than work on the living human, as the former is peculiarly predisposed to peritonitis from leakage or infection. Conditions being equal sutures passing through all the coats are better than those including only the outer tunics. With the Connell suture properly applied in which all the knots and ends are on the inside of the bowel the mortality at the Postgraduate Laboratory, directly traceable to the anastomosis *per se*, is nil. Criticisms are due to lack of understanding of the technic. Turck has modified tenaculum forceps which do away with tension sutures and a ligature carrier which simplifies the tying of the last knot. He illustrates each step of the operation by cuts. When the suturing is complete the ligature carrier is inserted from one-half to three-fourths of an inch away from the point where the long suture ends emerge and is brought out exactly in the small opening between these ends, which are then threaded in the carrier and the latter is then withdrawn. The suture ends are pulled entirely out through the place where the carrier entered, tied tightly together, the ends cut short and the bowel gently rolled between the fingers until the knot slips through the sutured edges, and the gut regains its normal contour. [H.M.]

9.—Improvement of General Anesthesia: Anesthol.—W. Meyer discusses Schleich's theories as to the relation of the boiling point of a narcotic to the body temperature with reference to absorption into the blood and ease of elimination. The temperature of the lungs being 100.4° F. and the b. p. of chloroform 149, the superamount cannot be eliminated by the lungs. The heart, kidneys and liver are called into action. This explains the after-effects on those organs. The b. p. of sulfuric ether is 93.2° F. It demands an absolutely intact lung for its elimination. By mixing narcotics the b. p. can be changed at will. Weidig has found that ether and chloroform enter into chemic combination according to their molecular weight. This product is called a "molecular solution." Analysis has shown that in the administration of Schleich's mixtures the anesthetic was adapted to the temperature of the body at the beginning of narcosis only; soon after narcosis was continued with one of a higher boiling point. Meyer aimed to find one that would contain neither petroleic ether nor free ether and yet have a boiling point corresponding with the body temperature. Various mixtures of M. Smith's ethyl chlorid were tried and one of these, anesthol, adopted. This has a boiling point of 104° F., and is really a chemic combination, for in evaporation a "solution of components" discharges and does not leave a final residual chloroform as in Schleich's mixtures. Any one can prepare it as it is not patented. It should be administered by the drop method. Too large doses affect the respiratory not the circulatory center. In consequence of the equilibrium

between addition and loss the reflexes are not always completely lost unless administration is preceded by a hypodermic of morphin. This has worked well. Salivation and mucous rales never occur. There is no cyanosis. Awakening is quick, subsequent vomiting and malaise are rare, bronchitis and pneumonia unknown. Affections of heart, lungs and kidneys are not contraindications to its use. [H.M.]

10.—Fever of Doubtful Nature in Infancy.—According to J. L. Duenas, in Cuba fevers occur with extraordinary frequency during infancy and childhood. Up to 20 years ago the tendency was to diagnose as malaria those cases in which a cause could not easily be found. Often the fever is caused by the same infectious diseases which have been described by observers of other countries. As a rule these pyrexias have a tendency to reveal a similar clinical expression during early stages of life. Hence diagnosis is extremely difficult and requires minute and wide information of a clinical, etiologic, epidemiologic and experimental order. Most of these fevers come from intestinal infection. The writer divides them into the septicemic or rapid, and the enteroseptic or slow type, according to the predominance of the symptoms of auto-intoxication of the organism, or whether more or less extensive inflammatory lesions on the mucous membrane of the intestine are produced. [H.M.]

11.—Pathologic Histology of Syphilitic Ethmoiditis.—J. L. Goodale reports a case in which he was able to make histologic examination at an early stage of the disease. The tissue changes consisted essentially in a proliferative periostitis, with a new formation of bone in the form of irregular excrescences, with a proliferation of connective tissue and of the endothelial cells of the arteries, leaving in places an obstruction of their lumen. These changes partake of the character of a granulation tumor rather than a gumma, belonging to the class termed syphiloma. Antisyphilitic remedies established the diagnosis beyond question. [H.M.]

Boston Medical and Surgical Journal.

March 5, 1903. [Vol. CXLVIII, No. 10.]

1. A Research Into the Means of Controlling the Blood-pressure. GEORGE CRILE.
2. On Routine Determinations of Arterial Tension in Operating-room and Clinic. HARVEY CUSHING.
3. Cyto-diagnosis: A Study of the Cellular Elements in Serous Effusions. A Preliminary Report. PERCY MUSGRAVE.
4. Intestinal Obstruction Below the Ileocecal Junction. THOMAS H. MANLEY.

1.—Research Into the Means of Controlling Blood-pressure.—George Crile, after painstaking investigation on the lower animals, comes to the following conclusions: Surgical shock is an exhaustion of the vasomotor; neither the heart muscle, the cardioinhibitory center, the cardioaccelerator center, nor the respiratory are other than secondarily involved. Collapse, on the other hand, is a sudden suspension of the function of the cardiac or vasomotor mechanism. In shock therapeutic doses of strychnia are useless, physiologic doses are dangerous or fatal. If not fatal increased exhaustion follows. There is no practical distinction to be made between external stimulation of this center, as in injuries and operations, and internal stimulation by vasomotor stimulants such as strychnia. Each is sufficient to produce shock. Stimulants of the vasomotor center are contraindicated. In shock stimulants and intravenous infusion have a limited range of usefulness, and may be injurious. In collapse they may be effective. The blood tolerates but a limited dilution with saline fluid. Adrenalin acts upon the heart and bloodvessels, raises blood-pressure in the normal animal in every degree of shock, even when the medulla is cocainized and the animal decapitated. Its effects are fleeting and it should be given continuously, probably best in saline infusion. By this means the circulation of a decapitated dog was maintained 10½ hours. In excessive dosage there is marked stimulation of the vagal mechanism. The pneumatic rubber suit provides an artificial peripheral resistance without injury and gives control over the blood-pressure to a considerable extent. By combined use of artificial respiration, rhythmic pressure on the thorax, and adrenalin injected into the jugular

vein animals which were apparently dead for 15 minutes were resuscitated. [A.B.C.]

2.—Routine Determinations of Arterial Tension in Operating-room and Clinic.—Harvey Cushing believes the crude method of estimating arterial tension by the palpating finger should be superseded by mechanical apparatus, which gives relative precision. The sphygmomanometer in some form, he believes, will in time occupy a place alongside the clinical thermometer and the watch in clinical work. He has found the Ravi-Rocci instrument, or some modification thereof, the most practical. It consists of a distensible cylinder or tire of thin rubber covered with a linen jacket. This cylinder, while encircling an extremity, preferably the arm, is inflated by means of a double cauter bulb until the pulse-wave, distal to the point of application, becomes imperceptible. Inserted into the lumen of the rubber tubing, which connects the bulb and tire, is a simple upright mercury manometer which records the pressure of the air in the cylinder necessary to obliterate the pulse. Many conditions are cited by the author in which an accurate knowledge of vascular tension would be of inestimable value, such as the physiologic testing of the circulatory stimulants and sedatives among drugs; effects of recumbent posture in many conditions of high arterial tension; in many operative procedures, as where fluids or tumors are removed, thus affecting vascular tension; differences in effect of different agents for general anesthesia; effects of subarachnoid injections and the trauma to or division of nerve trunks; investigations in the splanchnic vascular territory, etc. The paper should be read in full. [A.B.C.]

3.—Cyto-diagnosis: Cellular Elements in Serous Effusions.—P. Musgrave confines himself in this paper to the cellular elements found in pleural effusions. The liquid obtained by paracentesis is placed in centrifuge tubes to obtain the sediment, which is spread on cover slips by the loop. The writer reviews the cytologic formulas of Descos and recent classifications of pleurisy according to the predominant character of cell elements and reports the findings in a number of cases. He believes after more thorough study this procedure will be of clinical value. [H.M.]

4.—Intestinal Obstruction Below the Ileocecal Junction.—T. H. Manley calls attention to the great mortality following operations for malignant disease in this region, particularly if the patient has stercoremia and there is emaciation. Rectal cancer may be accompanied by hemorrhoids and every examination for the latter should be extended to a search for the former. Enterostomy is the safest method of relieving fecal obstruction from organic stenosis. The main pathologic causes leading to stenosis of the rectum are, in order of frequency, tuberculosis, cancer, syphilis, and gonorrhoea. The author states that Mikulicz reports 100 cases of carcinoma entering the Breslau clinic during the past 11 years, of which 5 were in the small intestine, 6 in the ascending colon, 7 in the hepatic flexure, 8 in the transverse colon, 12 in the splenic flexure, 4 in the descending colon, 31 in the sigmoid flexure, 20 in the cecum, and 12 in various areas of the large intestine.

Medical Record.

March 7, 1903. [Vol. 63, No. 10.]

1. Radio-praxis. HENRY G. PIFFARD.
2. Feeding in Early Infancy: Home Modification of Milk. JOSEPH E. WINTERS.
3. Plastic Artificial Vitreous in Mules' Operation. E. L. OATMAN.
4. Clinical Results With Antistreptococcus Serum in Scarlet Fever. LEWIS FISCHER.

1.—Radio-praxis.—H. G. Piffard states that 25 years ago he employed sunlight, concentrated by glass lenses, in the treatment of lupus and similar skin affections. The lens practically, as now known, excluded the ultraviolet light and caused merely a cauter action of the concentrated light. Since other agents could be used equally well, this was abandoned. Finsen found that the ultraviolet light possessed therapeutic value, and a similar property belongs to the Röntgen rays. The author gives a review of the historic data and the literature of radiotherapy, and discusses its promising future. The Röntgen rays and the ultraviolet rays differ in the following particulars:

X-RAYS.

1. Cannot be reflected, refracted, or polarized.
2. Can penetrate and traverse many bodies that will not permit the passage of luminous rays, *e. g.*, wood, aluminum, etc.
3. Will readily traverse the superficial tissues and influence the nutrition of the deeper ones.
4. Will traverse a thick book.
5. Have no appreciable effect on the vitality of bacteria.
6. Will discharge an electro-scope either positively or negatively electrified.
7. Will excite bright green fluorescence in Willemite, and induce *white* phosphorescence in calcium polysulfid.
8. Rock salt is *opaque* to x-rays.

ULTRAVIOLET RAYS.

1. Can be reflected, refracted, and polarized.
2. Will not traverse many bodies that are perfectly pervious to luminous rays, *e. g.*, glass.
3. Will not influence the deeper tissues, nor even the superficial ones, unless they are deprived of their usual blood content; that is, dehematized.
4. Will be stopped by a single leaf of the same book.
5. Will rapidly destroy the vitality of bacteria.
6. Will discharge an electro-scope if electrified negatively, but not positively.
7. Will excite bright green fluorescence in Willemite, and induce *blue* phosphorescence in calcium polysulfid.
8. Rock salt is *transparent* to ultraviolet rays.

[A. B. C.]

2.—Feeding in Early Infancy.—J. E. Winters affirms

that for a newborn child there is but one perfect food, the milk of a healthy mother, because her milk at the beginning of lactation is rich in readily absorbable proteids; and no analysis or synthesis can provide a substitute having the composition and properties of mother's milk at the beginning of lactation—a food adapted to the undeveloped and functionless state of the digestive organs. Lactation for a short period after childbirth stimulates uterine contractions and the necessary resolution and subinvolution of that organ. During this early period the child should be permitted to nurse until sated, and then placed in a quiet, dark room to sleep. Nursing by clock and scale is an absurdity. For two months the mother's milk is a perfect food for the growing child, then the proteids diminish and artificial feeding should begin in addition and as a preparation for weaning, which may take place any time after the second month, and should not be delayed beyond the eighth or ninth month. The only good substitute is a proper modification of cow's milk, and formulas are given for the proper modification of milk from the first week of artificial feeding until the end of the eighth or ninth month. The food for the first few weeks should be prepared from cream separated from cow's milk by gravity, not by centrifugal action, as the latter does not leave sufficient proteids in the cream. Destitution of vitalized mineral and proteid is insuperable in manufactured food, and a substitute for milk is as impossible as artificial blood. [W. K.]

3.—Plastic Artificial Vitreous in Mules' Operation.—

E. L. Oatman has substituted a ball of paraffin for the glass ball in Mules' operation with fair success, some of the paraffin escaping but healing eventuating. Two other cases are cited with results similar to his own. Conclusions based on so few cases are: Paraffin used for this purpose is prone to produce fistula by softening and getting between the lips of the wound, or into the track of a suture. This can be avoided by using paraffin that will not soften at body temperature; also by so suturing the scleral wound that no aperture remains. Paraffin will adapt itself to any inequalities on the surface of the glass shell, and ulceration from pressure is not apt to occur. Paraffin beads are easily prepared and may be used in special cases in which glass beads of the required shape or size are not obtainable. [A. B. C.]

4.—Antistreptococcus Serum in Scarlet Fever.—

Lewis Fischer discusses the Aronson serum with its immunizing and healing properties and power of agglutination, and tabulates Baginsky's cases treated by injections. He also reports two cases of his own in which the results were striking. The effect on temperature shows that it inhibits bacterial products. The necrotic membranes after the fourth day disappeared, almost melting away. The temperature came down by lysis. The author advocates further use of the serum. [H. M.]

New York Medical Journal.

February 28, 1903. [VOL. LXXVII, No. 9.]

1. Notes on Plague as Observed by the Health Authorities of Sydney, New South Wales. G. FRANK LYDSTON.
2. Cases of Intestinal Resection, with End-to-end Union. C. S. HAMILTON and W. D. HAMILTON.
3. The Diagnosis and Treatment of Contracted Pelvis. WARREN R. GILMAN.
4. Hypodermoclysis: Experiments, Technic and Clinical Uses. ROBERT COLEMAN KEMP.

1.—Plague in Sydney.—Lydston gives some notes on plague as observed by the health authorities of Sydney. The epidemic of 1900 comprised 303 cases, 293 whites and 10 Chinese. The mortality was a trifle less than 34%, but the mortality rate among the Chinese alone was 80%. The 1902 epidemic comprised 141 cases. The proportion of Chinese and the mortality rate were not widely different from the 1900 epidemic. The study of plague in Sydney has established the fact that the bubonic and septicemic forms, at least, are not contagious. That this is not true of primary plague pneumonia is probable, and great caution is to be observed here. The bubonic type was the prevalent one in Sydney, a few cases only of the septicemic form being noted. The patients were treated at the hospital with the Yersin-Roux antiplague serum, and the contacts were inoculated with the Haffkine prophylactic serum if they so desired. The health board concludes that the value of the prophylactic serum is doubtful, and that its use is attended with obstacles which make it almost impracticable, irrespective of its intrinsic merit. The Yersin-Roux serum is thought of doubtful value as a specific, although its action as a temporary "reviver" or cardiac stimulant seems to be demonstrated. The conveyance of plague by fomites—mediate contagion—is utterly disproved by experience in Sydney. Ingestion of the germ in pure culture does not convey the disease to animals. Animals—rats, especially—fed on the viscera of animals or man dead of the disease do, however, succumb. With the probable exception of the primarily pneumonic type, plague is never communicated from the sick to the well save via skin atria of infection. This is brought about by such media as fleas, and by wounds and abrasions, which subsequently become infected. This method, it is asserted, cannot prevail save when bacilli are in the circulation of the skin of the donor of the infection, as in the septicemic form, or within 24 hours of death in the bubonic form. The first case in Sydney was preceded by an epizootic epidemic among the rats, which proved to be plague, and it was shown by many experiments that the flea was the most probable medium of contagion. Points are suggested by a study of the clinical history of the disease as presented by Thompson, of the health board, and plates shown from specimens prepared by Tidswell. [C. A. O.]

2.—Intestinal Resection.—This article includes the histories of 12 intestinal resections with end-to-end sutures. In the 12 cases operated upon there were 8 recoveries and 4 deaths. The ages of five of the patients varied from 61 to 73, with three recoveries and two deaths. As to methods of resection employed, they were by suture, by the Murphy button, and by the Robson bobbin. In the past year the authors have been using for intestinal suture Pagenstecher's thread, a linen thread coated with celluloid, which they claim offers many advantages. [C. A. O.]

3.—Contracted Pelvis.—Gilman calls attention to a few practical points in pelvimetry and the management of cases with contracted pelvis. Contraction of the pelvis exists in from 4% to 6% of all obstetric cases. The author says that in ordinary city practice we may expect from 1% to 2% of all obstetric cases to present pelvic deformity of a character and degree which render operation of some sort necessary. The physician should know the size of the pelvis in every obstetric case before labor begins, the primipara should be examined before the eighth month. If the conjugate diameter is 9 cm. (3½ in.) forceps or version may ordinarily be expected to bring labor to a successful termination whenever the progress of the head is arrested. When the conjugate is 7.5 cm. (3 in.) forceps or version may occasionally be successful. When the conjugate is 7 cm. (2¾ in.) or less, the choice of operation lies between induced labor and cesarean section. [C. A. O.]

4.—Hypodermoclysis.—Kemp gives the results of some

experiments with hypodermoclysis. The first experiment shows that in 3½ minutes after the subcutaneous injection of saline solution into the groin of a dog the reaction in the urine was noted and the renal secretion increased. Another experiment shows the specific action of normal saline solution in promoting renal secretion. In a third experiment he produced renal congestion artificially in rabbits by the injection of serum, and then found that when this was followed later by a hypodermoclysis of normal saline solution renal congestion was much lessened. The author gives in detail the technic and precautions to be observed. He suggests the ilio-lumbar region, the space between the crest of the ilium and the twelfth rib, as the most convenient site. The author quotes Hilderbrand as stating that one dram of normal saline solution in proportion to one pound of body weight is the maximum quantity that will be taken care of by the kidneys every 15 minutes. If the fluids tends to remain *in situ*, enteroclysis with normal saline solution at 122° F. increases the heart's action and aids absorption. In some cases, in oliguria or in uremia, frequently repeated injections of moderate amount seem to promote the excretion of toxins better than the employment of a single large volume of saline solution; there is also less strain on the kidneys. In an adult from six ounces to a pint is indicated in uremia and allied conditions; from one pint to one quart if there is shock or hemorrhage. A temperature of 110° F. should be employed with a needle of moderate size, and a temperature of at least 115° F., or even 120° F., with a small or very fine needle. [C.A.O.]

Medical News.

March 7, 1903. [Vol. 82, No. 10.]

1. Periduodenal Abscess Secondary to Ulcer of the Duodenum. WILLIAM SEAMAN BAINBRIDGE.
2. Mosquito Extermination in New York City. GEORGE A. SOPER.
3. Some Practical Suggestions on Mosquito Extermination in New Jersey. HENRY CLAY WEEKS.
4. The Sanitary Aspect of the Mosquito Question. JOHN B. SMITH.
5. The Symptomatology of Tabes: An Analysis of 140 Cases of Locomotor Ataxia. JOSEPH COLLINS.

1.—Periduodenal Abscess from Ulcer of the Duodenum.

—W. S. Bainbridge reports the case. The patient was a man of 54. The symptoms are detailed, and a diagnosis was made prior to death but the patient's condition precluded operation. Autopsy confirmed the diagnosis. There are, including the author's case, 26 on record, and 22 of the patients died without the diagnosis being made. In 2 an operation was performed and the diagnosis made at the time that the abdomen was opened. A cure resulted in one (Moynihan). In another, diagnosis was accurate, operation performed, but patient subsequently died from the disease (Lowson). The purpose of the paper is to give an epitome of the literature on the subject, to stimulate a fuller record of cases, and to urge a more general recognition of the possibility of this disease in daily practice. In but 12 of the reported cases (including the author's) are the reports considered by him of value. These are rehearsed. [A.B.C.]

2.—Mosquito Extermination in New York City.—G. A. Soper advocates careful observation of times and places of breeding with identification of species. He considers separately *Culex pungeus*, which is most apt to give trouble indoors at night, *Anopheles maculipennis*, the malarial agent, and *Culex sollicitans*, the salt marsh mosquito. The first develops in stagnant water near habitations. Engineering works, like the underground railway, natural pools and swamps, and a want of proper neatness about dwellings furnish the breeding places. The most objectionable breeding places are those near thinly-settled districts which are passing from country to city. Here the malarial mosquito occurs. Public works, new streets, railways, etc., leaving "sunken lots," create places in which stagnant water accumulates. The salt water mosquito occurs almost exclusively near the tide meadows. The number of people near the edges affected by these is considerable. In 1902 extensive biologic and sanitary surveys were made and steps taken toward legal remedies. War is to be waged against all responsible for stagnant water. Useless receptacles should be destroyed, old barrels should be broken up for firewood. There should be no rubbish heap. Cisterns should be stocked with

goldfish or screened. Cesspools and manure pits should be covered with kerosene. Pools should be filled up or drained, brook margins should be sharp and clean. When drainage is impossible, kerosene, lime or carbolic acid should be used. Many districts by suitable drainage could be made healthful and valuable. Small ditches about the meadows would reduce the number of mosquitos. The thinning of foliage about dwellings often secures relief. [H.M.]

3.—Mosquito Extermination in New Jersey.—H. C. Weeks emphasizes the importance of cultivating the anti-mosquito habit by persistent agitation. The inducements to action lie in improved healthfulness, lessening of time lost from work, increased land values, and public comfort. He believes the mosquito can be exterminated from the whole State and every acre reclaimed could be profitably utilized. The Passaic basin forms the greatest menace as a fresh breeding area. This whole section could be relieved by State action with great economic benefit. There are about 300,000 acres of tidal marshes, one-eighth of the farmland, whose fertility would add 20% to farm products. [H.M.]

4.—Sanitary Aspect of the Mosquito Question.—J. B. Smith discusses various species of mosquitos and the life history of *Plasmodium malariae*. For hibernation the anopheles select houses or barns and preferably cellars. In a house kept at 75° they will become active and may bite. Winter development of malaria is not unknown. Winter fumigation of cellars in malarial districts is therefore a precaution of the highest value. Equally necessary is thorough treatment of persons with malarial fevers who are the source of infection. We might ignore the mosquito altogether could we protect all patients from bites till thoroughly cured. Smith has never found the anopheles in really foul water and rarely in woodland streams, but aside from that there is scarcely a bit of sheltered water in which they will not occur. Thousands breed in the salt marshes. They will fly half a mile over level country. He found their larvae in every square laid down on the New Brunswick map. There is no reason why breeding pools should be allowed in any city. No larva lives in any ripple area in any body of water. The day is not distant when the shore mosquito will be only an exceptional occurrence. [H.M.]

Philadelphia Medical Journal.

March 7, 1903. [Vol. XI, No. 10.]

1. Tropical Diseases. CHARLES F. KIEFFER.
2. The Ductless Glands as Organs of the First Importance in Vital Functions and Their Relationship as Such to Disease and Therapeutics. CHARLES E. DE M. SAJOUS.
3. Gangrenous Destruction of the Pituitary Body, With Disintegration of the Blood Following a Fracture of the Sphenoid Bone and Subsequent Infection. EUGENE WARDIN.
4. Surgical Affections of the Biliary Tracts (Concluded). JOHN B. DEEVER.

1.—Tropical Parasites.—C. Kieffer says the nematode worms are common to the tropic and temperate zone. *Trichuris trichuria*.—Excepting in deteriorated conditions the parasite does not cause any clinical symptoms; its normal habitat is the cecum, although it may be found in other portions of the colon or lower ileum. This parasite is not expelled by the ordinary anthelmintics; the only reliable remedy is mechanical dislodgement of the worms by high enemas, or their destruction by antiseptics. *Ascaris lumbricoides*.—Even though this worm produces no symptoms the accidents which it may occasion indicate prompt attempts at removal; for this purpose santonin combined with purgative doses of calomel is to be highly lauded. *Uncinariasis*, due to different varieties of uncinaria, is a parasitic disease of the small intestine, the chief symptoms of which are severe anemia, abdominal pains, asthenia without emaciation and edema. In Egypt this worm is found in nearly every postmortem. Harris has found it in Georgia and Florida, and believes it is the common cause of the severe anemias of the southern United States that have hitherto been regarded as malarial. In conditions of great deterioration in the half-starved or ill-nourished, in acute or chronic dysentery, the presence of only a few of these parasites may be sufficient to act as a very dangerous complication. There is no leukocytosis, but there is a relative increase in the

eosinophiles ranging from 3% to 30%. The definite diagnosis is made by the identification of the ova. In the treatment of uncinariasis male fern and thymol are of value; the latter is the more effective, being administered in 30 grain doses, given in capsule or emulsion with acacia; repeated in two hours for an adult. [F.C.H.]

2.—The Ductless Glands.—C. E. de M. Sajous details the deductions of the results of investigations of the ductless glands as organs of the first importance in vital functions and their relationship as such to disease and therapeutics. When in the course of time we were brought to study the literature of the ductless glands the marked affinity of the suprarenal secretion for oxygen could not but attract our attention. The following are the conclusions which Sajous reached as a result of these investigations, each of which is elucidated: 1. When the venous blood reaches the pulmonary alveoli the marked affinity of the adrenal secretion in the plasma for oxygen causes it to absorb this gas from the alveolar air. The carbonic dioxide in the blood is thus forcibly replaced by oxygen and expelled with corresponding vigor. The red corpuscles after this operation bathe in an oxygen-laden medium and their hemoglobin becomes converted into oxyhemoglobin. 2. The physiologic function of the internal secretion of the adrenals is loosely to combine the oxygen in the lungs and to endow the blood plasma with its oxidizing properties. A concomitant study of the experimental physiology of the pituitary body and of the ultimate effects of sympathectomy and a rather extensive research into the pathogenesis of acromegaly and other disorders of the pituitary, having likewise pointed to phenomena directly ascribable to functional disturbance of the adrenals, it became clear that the governing center of these organs was found and that the following conclusion was warranted. 3. The anterior pituitary body governs the functional activity of the adrenals and is directly connected with these organs through the cervicothoracic ganglia, the splanchnic nerves, and the semi-lunar ganglia of the sympathetic system. 4. All general symptoms witnessed in disorders in which the blood is invaded by a poison of any kind are in reality manifestations of over-activity, insufficiency or inactivity of the adrenals. 5. The thyroid gland, the anterior pituitary body and the adrenals are functionally interdependent and constitute a system. 6. Neutrophile leukocytes ingest proteids and certain hydrocarbons, sugar, and starch in the digestive canal and convert these into peptone, myosinogen and fibrinogen granules. 7. Eosinophile leukocytes elaborate hemoglobin from the proteids, bilirubin, and iron ingested by their parent-cells, the neutrophiles. 8. Lecithin is the active constituent of the myelin of nerves. The axis cylinder contains plasma, the adrenoxin of which, by combining with the lecithin, liberates nervous energy. 9. Basophile leukocytes convert fats derived from intestinal foodstuffs into myelin granules. 10. The greater part of the trypsin of the organism is formed in the splenic vein. 11. The splenopancreatic internal secretion is represented by the trypsin, which reaches the portal vein by way of the splenic vein. 12. The main function of the splenopancreatic secretion, trypsin, is to protect the organism from the effects of bacteria, their toxins and all toxic albuminoids, including vegetable poisons and venoms. 13. The posterior pituitary body, as the general center of the nervous system, was found to be the anterior pituitary body's cocenter in sustaining the cellular metabolism of all organs. 14. Adrenal stimulants will often prove inadequate if the alkaline salts are not administered simultaneously, while the use of alkaline salts without adrenal stimulants will prove unavailing, though perhaps beneficial for a time. 15. The power of the organism to antagonize the constitutional effects of pathogenic germs, their toxins and other poisons, is directly proportionate, all else being equal, to the functional efficiency of the adrenal system. 16. When a favorable reaction does not follow the use of saline solution, it is because the adrenal system also requires direct stimulation, such as that afforded by strychnin, digitalis, etc., administered subcutaneously. [F.C.H.]

3.—Gangrenous Destruction of the Pituitary Body.—E. Wasdin details a case of gangrenous destruction of the pituitary body, with disintegration of the blood, following a fracture of the sphenoid bone and subsequent infection as illus-

trative of the influence which the integrity of the pituitary body exercises upon the integrity of the blood through the adrenal glands. The patient was a male of 24, who died 22 days after receiving the injury. The anatomic diagnosis made was fracture of the lower jaw opening into the buccal cavity, fracture of the body of the sphenoid through the sella turcica with infection resulting in localized gangrene of the contents of sella, the lobes of the pituitary body and general intoxication. The skin was a deep bronze yellow, the right half of the face was greatly discolored and edematous, the right eye protruded to overdistention of the swollen lids, between which the edematous conjunctiva protruded. Upon postmortem the cerebral tissues normal except the right crus as it overlaid a gangrenous area on the base of the skull. In the left midfossa there was a dark green mass near the carotid opening of the petrous bone involving the gasserian ganglion, and which, passing backward, involved all the contents of the sella turcica, then as a slender greenish line it passed along the right cavernous groove into the orbital cavity. The middle and posterior clinoid processes were necrotic, and the pituitary removed showed a fracture through the body. [F.C.H.]

4.—Surgical Affections of the Biliary Tracts.—John B. Deaver details at length the surgical affections of the biliary tracts. The following are the indications for medical treatment: (1) Acute obstruction of the common duct. Morphia for the pain during the acute stage. Should symptoms of obstruction return after apparent relief, indicating a fixed position of the stone, operation should immediately be advised; (2) hydrops of the gallbladder, due to an infection and not to calculus obstruction of the cystic duct; (3) mild attacks of colic without any inflammatory symptoms, unless chronic invalidism is threatened. Such cases are markedly benefited by the Carlsbad treatment; (4) in cases of marked obesity or on account of diabetes, heart, lung, kidney or liver disease in which the shock of operation would result fatally; (5) carcinoma of the biliary apparatus, unless the obstruction requires a palliative operation. The indications for surgical treatment are: (1) Chronic obstruction of the common duct. The operation of choice is choledochotomy; (2) chronic obstruction of the cystic duct from an impacted gallstone with infective cholecystitis. The operation to be performed is cholecystotomy; (3) hydrops of the gallbladder from an impaction of a gallstone in the cystic duct. Cholecystectomy should be performed in most cases; (4) chronic calculus cholecystitis without jaundice and with or without enlargement of the gallbladder; (5) abscess either in or about the gall ducts or in the liver; (6) infective and suppurative cholangitis; (7) acute phlegmonous cholecystitis and gangrene of the gallbladder; (8) chronic catarrh of the gallbladder and bile-ducts associated with stones in the gallbladder with persistent infection by growing microorganisms; (9) for the sequels of cholelithiasis, and particularly adhesions; (10) malignant disease. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

EDITORIAL COMMENT

Sea-sickness.—Despite speculation extending through ages and the experience of millions, we are as much in the dark as to the true cause of sea-sickness as ever. Nor is its treatment any more efficient today than it was when the bold Phœnician sailor passed through the Pillars of Hercules into the tempestuous Atlantic. Secret and other remedies in countless numbers have been vainly vaunted as cures. One enjoying considerable vogue at the present time is an English preparation called "Yanatas," a name formed from the initial letters of the words in the sentence, "You are now able to avoid sea-sickness." A study of this preparation made by Professor C. Binz, of Bonn, has shown that it is essentially a 1% watery solution of chloral hydrate. Binz,¹ in his report upon this preparation, reviews the more recent

¹Zent. f. inn. Med., February 28, 1903.

writings upon the subject of sea-sickness. O. Rosenbach considers *mal de mer* a kinetosis, for which he makes intra- and interenergetic (intermolecular) disturbances responsible. To quote his luminous (?) phraseology, the phenomena of a kinetosis ensue when particularly strong and unusual impulses—*e. g.*, the movements of the ship—so endanger the artificial internal equilibrium of the entire organism, or of its parts, which is maintained through a special form of surface tension, that the existing reactive forces (the latent surface energy) are not capable of restoring the normal relations of the constituent parts. W. Janowski attributes sea-sickness to a mild form of oft-repeated cerebral concussion. C. Schwerdt considers that the disease is due to a rapid exhaustibility of the nervous and muscular elements, as well as to an augmented irritability of the center of equilibrium. He believes that on board ship the function of the diaphragm is inhibited in its upward and downward movement, causing diminished gaseous exchange in the lung and the accumulation of blood and lymph in the abdominal cavity. This brings about a double source of CO₂ accumulation in the system. A careful observation of suffering fellow-travelers has led Binz to formulate another theory; namely, that sea-sickness is dependent upon an acute anemia of the brain. The first symptom of the affection is a marked pallor, bordering upon that of chlorosis; then come nausea, retching, and vomiting. Binz believes that, inasmuch as the external carotid, which supplies the blood to the face, derives its vasomotor impulses from the same sympathetic source as the internal carotid, which supplies the blood to the brain, anemia in the territory of the external carotid doubtless means anemia in the distribution of the internal carotid. To prove this, he has made the following experiment: He trephined the skull of an albino rabbit; and, with a loup, observed the exposed portion of the brain, while an assistant kept in view the animal's ear. It was found that the vessels of the latter and those of the surface of the brain dilated and contracted synchronously. It is admitted by Binz that this does not permit of conclusion that during the rocking motion on ship the same thing occurs in man, and that the condition of the parts supplied by the external carotid must correspond with that of those supplied by the internal; but there is still less proof for the opposite view. In the animal experiments it was not possible to produce vascular spasm by long-continued rocking. Cerebral anemia causes nausea and vomiting, as may at times be observed in conditions of slow hemorrhage. It has been noted during sea-sickness that after the retching act there is a momentary feeling of relief. This Binz attributes to the increased afflux of blood during the straining, which counteracts the cerebral anemia. His view of the causation of the disease is also borne out to some extent by the fact that experienced travelers that are subject to sea-sickness assume a horizontal posture as soon as they come on board the ship, even before the harbor has been left. Binz sums up his observations in the following conclusions: 1. The rocking of the ship produces a contraction of the arteries of the head and therefore an acute anemia of the brain. 2. This acute local anemia has as its consequence nausea and vomiting. 3. The movements in the abdominal press produced by the retching and vomiting force a large amount of blood into the brain, remove the anemia for the moment, and thus interrupt the malaise. 4. The stomach in sea-sickness plays only a passive role. The vomiting act is centrally excited, whether the stomach is full or empty. 5. Everything that tends to increase the flow of blood to the brain acts prophylactically, amelioratingly or curatively upon sea-sickness. In the last instance, however, we have as yet no explanation of why the rocking of the ship causes contraction of the vessels of the head, but this is no stranger than the contraction and dilation of the cephalic arteries during

strong emotion. For the treatment of the disease there is in the first place the horizontal posture, then remedies that cause dilation of the vessels of the brain. Among these may be mentioned chloral hydrate, which may be taken in doses of 0.3 grams (5 grains) three or four times within a few hours, and amyl nitrite in doses of two or three drops by inhalation. Potassium bromid and anti-pyrin in not too small doses have also been recommended and theoretically at least appear to be of value. R. Heinz advises rapid breathing, which, as is well known, has a tendency to lessen ordinary nausea. Binz also recommends that a full meal being taken before boarding the ship.

REVIEW OF LITERATURE

The Fatsplitting Ferment of the Stomach.—In a previous paper Volhard¹ has shown that a fine emulsion of almost neutral egg and milk fat removed from the stomach of man after from 1 to 2½ hours of digestion is removed not as neutral fat, but as free fatty acid. Almost 70% of it is found thus. In another paper he demonstrates that this digestion takes place when fat is brought in contact with gastric juice in the test-tube; he demonstrates the process to be one of fermentation, since the fatsplitting agent is capable of passing through an earthen filter impassable to bacteria. The gastric juice after passing through filter possessed the fat digesting property to the same degree as before. The ferment was contained in a glycerin extract prepared from the gastric mucous membrane of a pig, and was found in larger quantities in the glands of the fundus than of the pylorus. In the present paper he publishes experiments which demonstrate (1) that the fatsplitting ferment of the gastric juice is very sensitive when acted upon by an alkali, much more so than that of a glycerin extract of the gastric mucous membrane; (2) the former is much more resistant against hydrochloric acid than the latter; (3) the gastric juice contains the fatsplitting ferment, the extract its zymogen; (4) the digestion of the fat through the ferment apparently does not increase proportionally with the time, but is performed in irregular intervals; (5) the reaction is incomplete independent of the absolute amount of neutral salts present, only a certain percentage is acted upon; (6) in achylia the secretion of this ferment is diminished, as well as that of rennin and pepsin; (7) high degrees of hyperacidity interfere with the digestion of fat in the stomach. [E.L.]

Physical Degeneracy as a Result of Change of Environment.—Janson's² observations are based mainly upon a study of the peasant and his offspring from certain mountainous parts of Norway. He speaks of their diet, physical characteristics and freedom from disease, and contrasts them with the conditions present in those people as found in the United States. In the same generation there is loss of buoyancy and elasticity of gait, the hair becomes dry and alopecia results, digestive disturbances and constipation become common, and following the latter many disorders, especially in the female, entirely unknown in their native land. Nervous disorders are frequent. In the second generation are found decaying teeth and an alarming frequency of the so-called scrofulous diathesis. Particularly important is the prevalence of tuberculosis in its various manifestations, this being the disease upon which most stress is laid in connection with these victims of change of environment. It seems to make up for the time lost by the past immunity of the race, and the mortality is high. What applies to the Norwegians applies equally to other Europeans who have lived among simple and secluded environments. [A.G.E.]

Achondroplasia.—Vargas³ reports the case of a female child 6 months old exhibiting the condition to which Parrot and others have applied the term achondroplasia. The condition is characterized by the combination of a normal head and body with short, thickened extremities. Radiographic investigation of the limbs shows that the bones are much thickened, especially at the ends, and are wanting in the epiphyses and

¹ Zeitschrift für klinische Medizin, Vol. xliii, p. 397.

² Northwest Medicine, January, 1903.

³ Monatschrift für Kinderheilkunde, November, 1902, Bd. i, No. 2.

centers of ossification normally found at that age. The child shows no signs of rachitis or cretinism. Vargas reviews the literature on the subject and gives a list of reported cases. The etiology of the affection is not known. The specific changes are found only in the long bones, in which ossification occurs by means of epiphyseal cartilages. The broad bones, which develop from membranes and such bones as the sternum, patella, etc., which may remain in a cartilaginous state for several years, are usually not affected. Microscopically, it is observed that all the characteristic appearances of normal epiphyseal bone formation are absent. The arrest of development must have taken place between the third and sixth months of pregnancy, through some nervous influence on the vascularization of the epiphyses. Achondroplasia is regarded as a condition quite distinct from fetal rickets or myxedema. [B.K.]

Dysphasia or aphasia as an initial symptom of tuberculous meningitis is discussed by Sinclair,¹ who insists that the occurrence of aphasia, even of transitory character, in a person already suffering from any form of tuberculous disease, should be looked upon with the gravest suspicion and regarded as the probable precursor of further meningeal trouble. [A.O.J.K.]

The Causation of the Crescendo Murmur of Mitral Stenosis.—In this paper E. M. Brockbank² replies to Samway's criticism of his views, restating the latter. The crescendo murmur is the terminal portion of the so-called presystolic murmur. Its three characteristics are ascending pitch, crescendo force, and abrupt termination by an accentuated first sound. The ascending pitch is caused by blood being forced through a gradually narrowing orifice. The crescendo character is produced by the gathering force of the ventricular systole; the abrupt termination by the sudden closure of a rigid valve. The auricle frequently produces by its contraction a murmur at the stenosed valve, but this can have no crescendo character, as the force is either uniform or decreasing. The auricular systolic murmur occurs during ventricular diastole. It is highly improbable that the force which closes the valve in health should be changed to another in disease, and the auricle, moreover, is unable to provide this force, since in the majority of cases of mitral stenosis it is dilated and unable to raise the pressure high enough to close the stiff valve. The author explains the replacement in some cases of the uniform systolic murmur of regurgitation by a crescendo murmur or by only an accentuated first sound within a few beats of the heart as follows: So great is the force required to close the rigid valve that when the patient is lying down and the ventricle beating quietly the valve resists closure and the ordinary systolic regurgitation murmur is heard, but when the patient sits up and contraction is more forcible the resistance to closure is overcome and a crescendo murmur is heard; when the patient walks about and the ventricle contracts more forcibly still the resistant valve is forced to close almost at once and only an accentuated sound is heard. [H.M.]

True Nanosomia, with Demonstration of a Case.—Von Hausemann³ presents a case of true nanosomia in a man of 22. He has a beard and pubic hairs but his testicles are undescended. His thyroid cartilage stands out as it does in a properly developed man. His body is proportionately developed. The measurements are given. No pathologic condition exists with the exception that his fingertips are club-shaped, and his hands are hyperemic yet ice-cold. He is intelligent and can speak three languages. The Röntgen rays show that his long bones have no epiphyses. At birth he weighed one pound. His mother gave birth to three other dwarfs and to eight normal children. The three dwarfs died in infancy. Von Hausemann says dwarfs are either proportional or disproportional. The latter form is seen in rachitis chondrodystrophia, congenital defects in the osseous system and cretinism. In the proportional variety the condition is physiologic and not pathologic. When the size is so small as to cause functional disturbances the condition is called nanosomia. There are two forms

of the latter. In one variety the child is normal at birth but ceases growing in infancy or early childhood (nanosomia infantilis). In the other form the child is small at birth, matures but always remains undersized (nanosomia primordialialis). [W.E.R.]

Problems in the Laboratory Study of Diphtheria.—Wesbrook¹ refers to the work of the Massachusetts committee for the study of diphtheria bacilli in well people, and compares it with some work done by the Minnesota State Board of Health. From the results of the latter that are at present available, it appears that (1) the percentage of infection of the nose and throat of well people with diphtheria bacilli varies within wide limits; (2) the types of bacilli characteristic of clinical diphtheria are not so abundant in well people as was expected; (3) the infection is much higher where well people have been exposed to clinical diphtheria. Experiments along two lines are now in progress, (a) to find a means of changing one type of diphtheria bacillus into another, and (b) observations on daily cultures from the throats and noses of clinical cases in hospitals. [A.G.E.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

REVIEW OF LITERATURE

Report of a Case, with Autopsy.—L. A. Sanders² gives the following findings at autopsy upon a child who suddenly died within 12 hours after he was called in to attend it. The child was a female, 6½ years of age, who a few minutes previous to death drank almost a glassful of milk. Upon opening the abdomen there was found a considerable quantity of thin, watery fluid, together with milk curds. Examination of the stomach revealed a perforation or tear of that organ on the anterior surface near the lesser curvature and a little nearer the cardiac than the pyloric opening; this perforation would easily allow the passage of the index finger into the stomach, and was as clean cut as though done with a knife. The stomach was dilated to such an extent as to reach down to the bladder. The entire anterior wall was very thin, pale, and almost transparent. The posterior surface was not so thin and had more color. The spleen, almost the entire small intestine, including portion of the caput coli, with the vermiform appendix, had passed through an opening in the diaphragm into the left thoracic cavity, occupying it almost entirely; the left lung being atrophied or compressed to about the thickness of one's hand, and had apparently not been dilated. The right lung was considerably increased in size, so much so that more than one-half the size of the liver was below the free border of the ribs. The heart was in the right side of the chest, occupying relatively the same position which it should normally have done in the left, and was apparently normal in size. [F.C.H.]

The Value of Rest as Effected by Operation in Diseases of the Alimentary Canal.—A. E. Maylard³ notes that it is in overstimulation and undue activity that we find the most fruitful source of almost all gastrointestinal diseases. There are probably no diseases peculiar to the esophagus unaccompanied by inflammation. Efforts at deglutition, even with regulated diet, tend to increase this. Gastrostomy gives the needed relief. The result is striking. Maylard does the Kader-Senn operation under skin cocaineization, completing it in 12 minutes. He advises gastrojejunostomy for hyperchlorhydria, chronic gastric catarrh and nonobstructive dilation of the stomach if a year's treatment by ordinary methods has failed. Considering the stomach as a storehouse it is easy to understand how many derangements are originated and augmented. An opening between the lower part of the stomach and the bowel will remove any possibility of the contents being retained, thus putting the stomach at rest. When gastric ulcer requiring operation is so situated that it cannot be excised gastrojejunostomy is indicated. With a patent pylorus the opening becomes ultimately so reduced that the digestive func-

¹ British Medical Journal, 1902, 11, 1897.

² Edinburgh Medical Journal, November, 1902.

³ Berliner klinische Wochenschrift, December 20, 1902.

¹ Medicine, February, 1903.

² Annals of Gynecology and Pediatrics, February, 1903.

³ Glasgow Medical Journal, November, 1902.

tions of the stomach are normally restored. He has successfully treated chronic ulcerative colitis and dilated colon by an artificial anus in the right iliac or lumbar region, and rectal disease by a sigmoid anus. [H.M.]

Spinal Hydatid Cyst Causing Severe Compression Myelitis.—Tytler and Williamson¹ report the case. The patient was a woman of 27 who was suffering from paralysis of both legs. Some three or four years previously she had developed a painful tumor in the back, to the other side of the lower angle of the left scapula. The tumor was removed and found to be a hydatid cyst. She remained well about two years and then began to suffer from pain in the middorsal region and at the base of the right lung. The pain continued for three weeks, then disappeared, and no trouble was noticed until two weeks before the authors first observed her. She then noticed weakness of the legs, which gradually increased until she was unable to walk. Pains existed in the legs, and she lost control of the bladder and rectum. She was operated upon and fifteen extradural spinal hydatid cysts were removed. The patient gradually improved. There is complete recovery of sensation and control of the bladder and rectum. There is marked recovery of motor power in the legs, though they remain somewhat spastic. The patient is able to walk with the aid of a stick. Hydatid cysts causing compression myelitis are usually external to the dura, and in the majority of cases they are on the posterior surface of the dura. Early removal is almost imperative if degeneration of the nerve filaments is to be prevented. In most of the cases symptoms of compression of the spinal nerve root, such as radiating pains, have occurred first and later paraplegic anesthesia and bladder and rectal symptoms have developed. The onset of paraplegia is usually gradual. [A.B.C.]

Cholelithiasis.—After a detailed investigation of the subject, especially in regard to treatment, Djakonoff² gives the following conclusions: 1. Gallstones are comparatively very rare in Russia. 2. The pressure of a stone in the gallbladder, as well as in the common or in the cystic duct, is fraught with danger and is a constant menace to the patient, owing partly to the mechanical obstruction, and in part to the probability of inflammatory complications. 3. The diagnosis of gallstones is often extremely difficult, but much is to be expected in the future from the improved utilization of the Röntgen rays. 4. In every case of demonstrated gallstones operative interference is unequivocally indicated. 5. The choice of operation lies between cholecystectomy and cholecystostomy. Simple cholecystostomy should be altogether abandoned, while choledochotomy and cysticotomy are indicated in exceptional instances when the stone has been definitely located in the common or in the cystic duct. The most radical and plausible of all these operations is undoubtedly cholecystectomy, and it should be more frequently performed than has hitherto been the case. [L.J.]

Suprapubic Cystotomy in Tumor of the Bladder.—From a study of the statistics of this operation C. B. Lockwood³ notes how much safer it is when the urine is acid and the tumor removable. If shock and hemorrhage were prevented, and he believes they could be, the mortality would fall within very reasonable proportions. The statistics show the extreme danger of the operation when the urine is septic and the tumor irremovable. It is then not justifiable. Now and then a survivor experiences some relief from the horrors of the disease, but this is not worth attempting when the attempt entails a mortality of 50%. Irremovable tumors are almost invariably malignant and accompanied by hemorrhage, which may be fatal, and in any case predisposes to septic cystitis, and indeed to general sepsis. Owing to the proximity of ureters, kidneys, peritoneum, pelvic veins and cellular tissue sepsis has unusual opportunities of doing harm. The largest proportion of bladder tumors are malignant. The thickness of the pedicle is not a trustworthy guide to the character of the growth. The high mortality attending suprapubic cystotomy can be greatly lessened by operating before the growth is too extensive for removal and before sepsis is established. Early diagnosis could be achieved by systematic use of the endoscope after

sudden spontaneous hematuria, the earliest symptom of tumor. [H.M.]

Retention of Urine Caused by Ischiorectal Abscess.—Bartenstein¹ reports a case of retention of urine occurring in an imbecile infant 10 months old. On catheterization the instrument met with considerable resistance at the sphincter vesical. Rectal examination at first revealed nothing but accumulated hard feces, the removal of which did not relieve the retention of urine. Five days after the first appearance of retention an ischiorectal abscess was discovered and opened. The following day spontaneous urination occurred for the first time. Notwithstanding this relief, the child finally died of sepsis. The retention of urine is not explained through the mere mechanical presence of the abscess or fecal impaction, as the course of the disease will show. The probable explanation is that the inflammatory process in the ischiorectal fossa set up an irritation of the inferior hemorrhoidal nerve, which passes through that space, and thus caused a reflex spasm of the neck of the bladder. The spasm lasted for some time after evacuation of the abscess, as the irritation was not due to mechanical pressure, but to inflammatory processes in the neighborhood of the nerve. [B.K.]

Operation to Correct Undue Prominence of the Ears.—A. MacLennan² reports a case operated on under Schleich's local anesthesia. Owing to the sensitiveness of the tissues and the impracticability of getting the solution through the cartilage there was considerable pain. An incision was made behind, freeing the ear from its attachments to the mastoid region. A crescentic piece of skin was removed from the edge so as to leave a raw surface on the skull for about one-third of an inch. A similar piece was removed from the ear, including the underlying concha and antihelix, but without buttonholing the skin in front. Removal of the cartilage allowed the ear to be brought in contact with the skull without having much tendency to spring back. Silkwormgut sutures were used. The helix was not interfered with, as an interruption of its continuity might spoil the contour of the ear. A cut illustrates the results. [H.M.]

Liver Abscess in a Child Two and One-half Years Old.—Arnott³ reports the case. The child gave a history of a neglected attack of dysentery. The lungs gave evidence of beginning tuberculosis, the general aspect was tuberculous and anemic. Open-air treatment was instituted and improvement followed, though at the end of ten days the temperature still ranged from 100° to 104°. The abdomen was distended and the liver was tender and enlarged to two fingers' breadth below the ribs and to the same extent upward. There was slight fulness in the contour of the right side of the hepatic region, respiration was thoracic. An exploring trocar and cannula were inserted in the tenth interspace in the anterior axillary line. Pus escaped, and an incision was made in the tenth interspace, and 12 ounces of pus evacuated and drainage instituted. The child was progressing fairly well when about the fifth day convergent strabismus was noticed, and a day later the hydrocephalic cry of tuberculous meningitis was noticed. The child died on the sixth day after the operation. [A.B.C.]

Echinococcus of the Pleura.—Springer⁴ reports the case of a boy of 11 years who had an unrecognized echinococcus cyst of the liver for five years, at the end of which time a rupture occurred into the right pleural cavity. The nature of the disease was then diagnosed by examination of the fluid obtained by aspiration of the chest. Resection of two ribs was performed and the cavity drained for eight days. Then it was packed rather firmly, in the hope of causing a sequestration of the echinococcus membrane. This end was accomplished eight days later, when the sac became loosened and was removed *in toto*. The case is remarkable on account of the favorable outcome, which is very rare in rupture of a hydatid cyst into the pleura, and also on account of the manner in which the sac was spontaneously discharged as a whole. [B.K.]

Lysiform.—F. W. Tunnicliffe and R. T. Hewlett⁵ describe

¹ Monatschrift für Kinderheilkunde, November, 1902, Bd. 1, No. 2.

² Glasgow Medical Journal, November, 1902.

³ British Medical Journal, January 24, 1903.

⁴ Centralblatt für Kinderheilkunde, January, 1903, viii, No. 1.

⁵ Medical Press and Circular, October 29, 1902.

¹ British Medical Journal, February 7, 1903.

² Chirurgia, January, 1903.

³ Medical Press and Circular, November 26, 1902.

lyosform as a formaldehyd soap. It is a viscid, colorless liquid, superficially similar to glycerin. Its unirritating qualities render it valuable for skin disinfection. It is a powerful, rapid deodorizer. It can be used as a gargle or irrigating fluid for mucous cavities. The typhoid bacillus is killed by a 5% solution in 5 to 10 minutes, *Bacillus coli* in 10 to 20 minutes, and *Staphylococcus pyogenes aureus* in a little over an hour. The formaldehyd compound it contains has a very low toxicity. As a mouth or nose wash it should be used in the proportion of one to three teaspoonfuls to a pint; as a vaginal or uterine douche, four to six teaspoonfuls; for abscess cavities, sinuses, etc., six teaspoonfuls or stronger; for disinfecting hands or instruments, six to twelve teaspoonfuls to the pint; as a deodorant, half to one ounce to the gallon; to disinfect discharges, half an ounce to the pint should be used. [H.M.]

Perforations and Lacerations of the Gallbladder.—To determine whether it is possible in cases of traumatic perforations and lacerations of the gallbladder to close the wound by inserting portions of peritoneum and abdominal muscle, Baldassari and Gardini¹ performed experiments with dogs. They were performed under rigid antisepsis and were successful in every instance. Dogs were killed at various intervals after the operation and absolute closure of the wound with adhesions to surrounding liver found. They advise the use of this method of closing such wounds in man, especially in cases in which a loss of substance would follow ordinary suture. [E.L.]

Concerning Blood-pressure in Man During Ether and Chloroform Narcosis.—Blauel² reports comparative observations of the blood-pressure of 139 patients operated on for different surgical conditions; 100 were anesthetized with ether, and 39 with chloroform. He sums up his results in the following manner. Ether used as an anesthetic elevates the blood-pressure greatly, doing this not only in strong, healthy persons but also in constitutions weakened through long illnesses. It maintains high pressure throughout the entire narcosis, and only toward the end a slight decline takes place gradually. A sudden unexpected fall in the blood-pressure never occurs. After narcosis the ether curve declines slowly and gradually. Chloroform lowers the blood-pressure considerably, even small doses possessing this action. The fall occurs suddenly with the onset of the narcotization and increases until the end; even after this the pressure continues to fall in every case, sometimes suddenly and without warning. These sudden falls vary in degree between harmless differences of a few millimeters, and others reaching such a depth as to be below the level, apparently necessary for the continuance of life. They resemble syncope attacks in every way. As these sudden remissions occur in every case they cannot be considered individual peculiarities. In every case, even where chloroform is given in very small quantities, these remissions occur without the slightest sign to announce their coming, and many come on even in cases where the anesthetic has been stopped for some time. He therefore concludes that ether is an adjuvant to the circulatory mechanism assisting it to do its best work, while chloroform on the other hand is harmful in every way. He advises the use of ether as an anesthetic in every case where it can be used, stating that at Tübingen it is given the preference always. [E.L.]

Value of Modern Methods of Renal Diagnosis.—Bryson³ details cases to illustrate the value of cystoscopy, segregation of urines, cryoscopy, and the phloridzin test. His method of using the Harris segregator is minutely described. Conclusions are: (1) Urinocryoscopy in association with the separation of the urines is of distinct value, especially in connection with hematocryoscopy; (2) the phloridzin test is a very delicate and valuable one for the investigation of the functional capacity of the kidney, is not difficult of application, and should be made whenever possible before doing an operation on the kidney; (3) until further observations the freezing and phloridzin tests should be made separately. The polyuria often caused by the injection of phloridzin may modify the freezing point of the urine from the healthy kidney; (4) these tests should be regarded only as aids to diagnosis and as in no way taking the place of well established means of clinical reckoning. [A.G.E.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Placenta Prævia.—Whitling¹ was summoned to attend a woman who had been three hours in labor with alarming bleeding. The patient, a multipara, aged 40, was usually quick in labor. Examination showed a presenting placenta, membranes intact, and the fetus lying to the right with limbs to the left, and vertex right occipito anterior. It being found impossible to reach the edge of the placenta and rupture the membranes without introducing the whole hand through the os, he determined to tear through the placenta and deliver. After a douche of izal and water at 115° F., and an injection of five grains of aseptic ergotin hypodermically into the gluteal muscle, fixing the fetus externally with the left hand, with the other he tore through the placenta, felt the head presenting, introduced the forceps and delivered the fetus in 3½ minutes, bleeding ceasing for the first time when traction began. Without delay the placenta was removed manually, the membranes dragging after. The aperture in the placenta was almost exactly in the center. Two hot intrauterine douches of the izal solution were given, the uterus contracting well, and no further hemorrhage occurred. The child, as was expected, was dead, but the mother had a normal recovery. [W.K.]

Milk Secretion Replacing Menstruation.—The case reported by Gauthier² is that of an unmarried woman of 25, who had had two previous suppressions of menstruation, each of three months' duration. At the time of the third suppression there appeared an abundant secretion of milk in the breasts. The menses did not reappear for seven months, during which time, and for several months afterward, there was an almost continuous lactation. For four or five days at the time of the month corresponding to the menstrual period the secretion was quite abundant, and became scanty during the rest of the month, without stopping altogether. The sexual organs were found to be normal. The cause is ascribed to a neurosis. [B.K.]

Effects of Vaccination During the Menstrual Period.—E. Rumley Dawson³ reports the case of a woman, robust and healthy, who had been vaccinated in infancy, but was revaccinated at the age of 29. She fainted at the operation, which occurred on the second day of her menstruation. She lay down for two hours, arose, felt dizzy and again fainted. The menstruation ceased and did not return again. The vaccination took well, but she did not quite regain her usual health and her menses practically ceased for six months, her symptoms being those of a premature menopause. At the expiration of this time she began to feel tired and heavy, fainted and vomited several times in the course of two days, and finally she brought up two full pints of very dark-looking blood and was put to bed. The doctor made a diagnosis of gastric ulcer. But soon after being put to bed menstruation came on as profusely as before her revaccination. After this, the first normal menstruation since the vaccination, she gradually recovered her former health and menses returned at normal intervals. Dawson considers the accepted causes of hematemesis, gastric ulcer, cirrhosis of the liver, and cancer of the stomach, all of which are excluded by the history of this case, and evidently thinks that the hematemesis in this instance, if not a vicarious menstruation, was at least in some way connected with it, and claims that the lesson of the case is that it is not advisable to vaccinate at or during the menstrual period except under circumstances of great emergency. [W.K.]

Tuberculosis of the Female Genitalia in Children.—Bruening⁴ reports the case of a girl of 4, of healthy antecedents. She had been ailing slightly since her second year, but the illness which preceded her death was of but a few weeks' duration. There was slight fever, progressive emaciation, abdominal distention and tenderness, occasional vomiting, dulness over the bladder and cecum, enlargement of spleen, red-

¹ Lancet, February 14, 1903.

² Lyon Medical, February 3, 1903.

³ British Medical Journal, February 7, 1903.

⁴ Monatschrift für Geburtshilfe und Gynecologie, 1902, Vol. xvi, 144.

¹ Münchener medicinische Wochenschrift, December 9, 1902.

² Beiträge zur klinische Chirurgie, Vol. xxxi, p. 271.

³ Medical Bulletin of Washington University, January, 1903.

ness about umbilicus, etc. A diagnosis of peritonitis was made, and that the condition was a tuberculous one seemed certain on account of the enlarged lymph glands, dry rales over the lungs, etc. The primary seat, however, could not be determined. The autopsy showed general glandular tuberculosis, perforation of tuberculous intestinal ulcers, perforative tuberculous peritonitis, cheesy endometritis, and salpingitis, miliary tuberculosis of pleura, peritoneum, spleen and other organs. He searched the literature for similar cases and was able to collect 43 which occurred between the ages of seven months and 15 years. They are noted especially between the first and fifth, tenth and fifteenth years. Genital tuberculosis is usually secondary (75% of his cases) and may be either ascending or descending. The primary process may be everywhere, but is oftenest found in lungs or peritoneum. The fallopian tubes are affected in nearly all cases of genital tuberculosis, often other parts are affected with them. The ovaries are rarely the only diseased portion. A diagnosis during life is but rarely made, but were the uterine discharges examined more frequently for tubercle bacilli there is no doubt that a proper diagnosis would be made oftener. The prognosis is bad. [E.L.]

Operations for Myoma.—Freund¹ reports three cases illustrating three methods of operating under varying conditions. In the first a uterine myoma was removed by vaginal amputation, the greater part of the fundus and of the uterine body being retained, so that the woman after her recovery continued to menstruate regularly without pain. The second was a case of uterine myoma complicated with carcinoma, and a radical abdominal operation was performed, the diseased organ with appendages was removed, the broad ligaments cleaned out, and uterine arteries ligated. The patient recovered. In such cases Freund thinks any less radical procedure entirely inadequate if the case is operable at all. The third was a uterine myoma complicated with inflammatory adnexal tumors. In such condition he employs and recommends the supravaginal transverse incision as possessing many advantages over the median incision. [W.K.]

Surgery in Tropical Lands.—Ziemann² reports a case in which the patient recovered after a cesarean section had been performed on her by a midwife under very unfavorable circumstances. The patient, the wife of a missionary in West Africa, was so situated that a doctor could not be obtained. No narcotic being at hand, the operation was done without anesthesia. A transverse incision was made with a small vaccination lancet. The uterus was incised in its transverse axis. After the placenta had been removed the uterine walls contracted so strongly that suturing was not attempted. The edges of the uterine wound were tightly locked, one upon the other. The abdominal wound was closed with catgut sutures. The operation lasted 45 minutes and was accompanied by considerable loss of blood. Only a few artery forceps were obtainable. The patient was removed three times to dry beds in the first 31 hours. In the next 14 days the temperature rose only once to 37.9° C. The woman became perfectly well. The child died six months later from dysentery. Ziemann reports another remarkable case in which a negro was badly injured by a buffalo. The abdomen had a wound 16 cm. long, through which the coils of intestines protruded. The bowels and omentum had been lying in the dust and leaves for 36 hours. The intestines and abdominal cavity were washed on account of a beginning fibrinous peritonitis. No suppurative peritonitis developed and the patient recovered. [W.E.R.]

Drainage After Laparotomy.—Olshausen³ divides operative cases into four classes: 1. Cases in which during operation pus or fetid material has proceeded from the operative field. 2. Cases in which partly extirpated tumors with raw surfaces remain behind. 3. Cases with perforated injuries of intestines or bladder. 4. Cases unclean through much soiling of the abdominal cavity with cyst contents, old blood, etc. Because of the large proportion of cures in these four classes, recovering without drainage, he concludes that drainage is

superfluous and reprehensible. Sippel, however, does not accept this conclusion. While he would not drain in the last two classes, in the second he might drain with tampons according to Mikulicz, and in the first he advocates ordinary drainage as the more certain method. One cannot say with certainty of any case that the patient will die without drainage or will live if drainage is employed. Much depends upon the sterility or virulence of the pus, also upon the resisting power of the abdominal surfaces and their power of absorption. But he thinks no convinced advocate of drainage would abandon the feeling of certainty which it gives for the risks of the opposite method in critical cases. Sippel also advocates abdominal irrigation for cleansing purposes and in his experience has never seen it cause shock or check heart action, though he has often seen it have a distinctly favorable influence upon the pulse. [W.K.]

Cesarean Section and Ovariectomy on Account of Impacted Tumor.—G. van der Briele¹ gives a detailed account of a woman of 30, multipara, in whom delivery was so obstructed by the presence of an impacted tumor as to render cesarean section necessary. In his closing remarks he says that each case must be a law unto itself, the method of treatment depending upon the different topographic and anatomic conditions existing. In the case reported there was an absolute indication for cesarean section, since the tumor lying in the birth passage was so firmly adherent that it could not be pushed aside, and therefore must of necessity be removed. [W.K.]

A New Genus of Teratopagus.—Marcel Baudouin² reports having found in the Museum of Pathological Anatomy of the Faculty of Medicine of Paris a specimen of teratopagus which constitutes a new genus. It is essentially characterized by the peculiarity that the union, instead of taking place between the umbilicus and xiphoid, in other words, at the level of the epigastrium, extends from the umbilicus to the prepubic region; or to that corresponding to the hypogastrium; wherefore he proposes for this monster the name of *hypogastropagus*. This type of teratopagus is viable. An hypogastropagus is evidently intermediary between a xiphopagus and an ischiopagus, which is a new proof of the fact that in the teratology of double monsters it is possible to find all transitions between the most widely separated types. [C.S.D.]

The Importance of Determining the Leukocytes in Gynecologic Diseases.—Weiss³ reviews 23 illustrative cases taken from Chrobak's clinic in Vienna, and from these concludes that the determination of the number of leukocytes forms in gynecology a substantial aid in differential diagnosis in that constant leukocytosis with a number above 16,000 shows the presence of a suppurative process. If the process is of some duration, the number generally diminishes although noticeably high when medical advice was first sought. In cases of long-standing leukocytosis fails under any circumstances, and the physician in these cases must direct his treatment according to general principles determined by the general subjective condition of the patient and the objective condition of the genital tract. A negative condition of leukocytes in an acute illness or illness of short duration entirely excludes any suppurative process. [W.K.]

Heterotopia in the Histologic Structure of a Fibrous Uterine Polyp.—Pollak³ reports the removal of a uterine polyp from a woman aged 37, gives an illustrated description of its histologic structure, showing many small patches of fatty tissue; and then discusses different theories to account for the presence of these fat cells, whether congenital or heterotopous in origin. As the patient had some years previously been cured, he concludes that the uterus was perforated at that time and that the opening extended to a part of the omentum which in a previous gonorrhoeal attack had become adherent and thus closed the perforation. At first the fatty tissue belonging to the omentum became the nucleus of the polyp formation, and secondly the efforts at separation and expulsion were answerable for the continuance of the polypus growth. [W.K.]

¹ Münchener medizinische Wochenschrift, January 27, 1903.

² Berliner klinische Wochenschrift, December 20, 1902.

³ Zentralblatt für Gynäkologie, February 7, 1903.

¹ Zentralblatt für Gynäkologie, January 31, 1903.

² La Semaine Médicale, November 19, 1902.

³ Wiener klinische Wochenschrift, January 15, 1903.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPELMAN

REVIEW OF LITERATURE

Massage in Cutaneous Therapeutics.—G. Beauchef¹

reviews the physiologic action, indications, and uses of massage in the treatment of cutaneous diseases and draws the following conclusions: 1. Massage is too often neglected in the treatment of cutaneous diseases. Its effects on the skin may be summed up as follow: (a) It frees the skin of epithelial debris, renders it supple, facilitates absorption, and cleanses the excretory ducts of the glands which it contains; (b) it increases the circulation of the blood and lymphatics of the skin, facilitating the nutritive changes and provoking increased phagocytosis; (c) it elevates the local temperature; (d) it facilitates the resorption of extravasated liquids, whether they be normal or pathologic; (e) it exerts a characteristic action on the cellular elements, increases their development and multiplication, and therefore plays an important part in the reparation of the epidermis; (f) moreover, it favors the excretion of the glandular products and stimulates the glands, for it increases the number of specific elements and especially the water eliminated; (g) finally, it influences remarkably the nerves of the skin, producing anesthesia of the sensory filaments, stimulating the motor, vasomotor, and trophic filaments. Through this it has an action on the entire nervous system. 2. The indications for massage are numerous: (a) To overcome thickening, and to facilitate resorption in chronic inflammations of the skin; (b) to stimulate secretion and to facilitate excretion in affections of the sebaceous glands and the sweat glands; (c) to combat circulatory disturbances in varicose ulcers, telangiectasis, etc.; (d) to combat pruritus and pain; (e) to improve trophic disturbances and to combat cutaneous pigmentation; (f) to stimulate the vitality of smooth areas in certain forms of alopecia. 3. Massage is useless or counterindicated in extensive acute inflammations, bulbous lesions of the skin, purely parasitic diseases, acute dermatoses due to general infection. 4. All the manipulations employed in massage may be used in treating the skin. They must always be begun gently and produce their effects according to the energy of application. [L.F.A.]

The Cerebrin Treatment of Epilepsy.—Lion² reports the results of Poehl's cerebrin treatment in 15 cases of epilepsy. In 2 cases there were no more attacks after the first dose of the drug; 5 patients were very much improved; in 7 patients the attacks became fewer and lighter; in 1 patient their number apparently increased, but their character changed from grand mal to petit mal. All of these patients were suffering from grave types of the disease. The extract is given either in tablet form or as subcutaneous injections. Each tablet corresponds to 4½ grains (0.3 gram) and he gives as many as 6 tablets daily after the patient has been under treatment for 3 weeks. After the desired result is attained he orders 6 tablets twice weekly. The injections are given every second or third day, depending on the case. [E.L.]

Neoarsycodile.—Neoarsycodile or sodium methylarsenite³ is an organic compound of arsenic, analogous to the cacodylates, but distinguished from them by its permanency, which enables it to be employed by the mouth, even in relatively large doses. It is used with excellent results in tuberculosis and in nontuberculous affections of the respiratory tract, particularly in asthma and grip. It has also been employed in the treatment of anemia, in malarial fever, and in other affections in which arsenic is indicated. Neoarsycodile is administered in doses of from 2 to 9 centigrams (¼ to 1½ grains) for a period of five days, and then withdrawn for five days, continuing in this way until the patient recovers. It is rarely given in doses of more than 6 cg. (1 grain). The drug should be stopped if intolerance is manifested by the phenomena of congestion, breathlessness, or elevation of temperature. [L.F.A.]

A Soluble Salt of Theobromin.—Solacolu¹ calls attention to a soluble salt of theobromin, agurin, prepared by Impens, of Brussels. Agurin is a double salt of sodiated theobromin and sodium acetate. It is soluble in water and occurs as a white deliquescent powder, alkaline in reaction. It is precipitated from its solutions by organic and mineral acids. Solacolu employs it in beginning doses of 0.5 gram (7½ grains), gradually increasing it until 3 or 4 grams (45 or 60 grains) are being taken. It is usually given in cachets. In all the cases in which agurin was administered it caused an increase in the urine, which reached its maximum at about the fourth day of treatment. This diuretic effect persisted for several days after its administration was stopped. Slight increase in arterial pressure was noticed after its use. [L.F.A.]

Theocin as a Diuretic.—Minkowski² recently employed theocin as a substitute for theobromin with good results. Theocin is an isomer of theobromin. It is more soluble than the latter, more stimulating to the nervous system, and more rapid of action, even in smaller doses. The changes produced in the pulse rate and arterial tension are not more marked than by the use of theobromin. Theocin causes a greater increase of the urine than is caused by digitalis, diuretin, or agurin. Edema and ascites disappear rapidly. In some cases the ingestion of theocin is followed by vomiting, or by irritation of the stomach and loss of appetite. Minkowski combats this by suitable drugs and appropriate dietetic precautions. [L.F.A.]

Kephyr.—Duprat³ has found kephyr an excellent substitute for milk in all conditions in which the latter is indicated. Kephyr is cow's milk which has undergone fermentation by the addition of kephyr grains. It contains, in addition to the usual constituents of milk, the new chemical elements and active substances which have produced fermentation. Kephyr owes its therapeutic results to the influence of each of these elements. It is very valuable in dyspepsia due to a deficiency of hydrochloric acid and pepsin; when the patients cannot take milk, kephyr is often well borne, and is more tonic in its effects. In tuberculous patients and in those whose nutrition is faulty, kephyr acts as a general stimulant and permits of suralimentation without trouble. It has also been employed successfully in the treatment of acute gastroenteritis and dyspepsia in children. Equally good results have been obtained from its use in chronic enteritis of children. In these cases it does good by acting as an antiseptic, diminishing the tendency to vomit and acting as a stimulant to the mucous membrane of the gastrointestinal tract. [L.F.A.]

FORMULAS, ORIGINAL AND SELECTED.

Ointment for Chapped Hands.⁴—Steffen is credited with the following formula in the *Journal de Médecine de Paris*:

Menthol	3 parts
Salol	4 parts
Olive oil	4 parts
Lanolin	100 parts

To be applied twice a day. It is said that the pain disappears, the skin softens, and the fissures heal promptly.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 7, 1903:

SMALLPOX—UNITED STATES.			Cases	Deaths
California:	Berkeley	Feb. 18-25	1	
	Los Angeles	Feb. 14-21	3	
	Sacramento	Jan. 25-Feb. 7	4	
Colorado:	San Francisco	Feb. 15-22	12	1
	Denver	Feb. 7-21	30	
District of Columbia:	Washington	Feb. 14-28	6	1
Illinois:	Chicago	Feb. 21-28	17	1
Indiana:	Elwood	Feb. 22-Mar. 1	3	
	Evansville	Feb. 21-28	4	
	Indianapolis	Feb. 14-18	57	16
	Jeffersonville	Jan. 1-31	1	
Iowa:	Jeffersonville	Feb. 1-28	5	
	Davenport	Feb. 21-28	4	

¹ Le Mois Thérapeutique, Vol. III, No. 9, 1902, p. 98.

² Deutsche medicinische Wochenschrift, December 11, 1902.

³ Le Mois Thérapeutique, Vol. III, No. 9, 1902, p. 102.

¹ Le Mois Thérapeutique, Vol. III, No. 9, 1902, p. 100.

² Journal des Praticiens, Vol. xvi, No. 51, 1902, p. 809.

³ Le Mois Thérapeutique, Vol. III, No. 9, 1902, p. 99.

⁴ New York Medical Journal.

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The attitude of the public press of San Francisco toward all those who maintain the demonstrated truth about plague has not abated any of its former virulence. A recent editorial in one of these newspapers calls upon the California representatives at Washington to explain why the United States Treasury Department was not prevented from notifying other American republics of the existence of plague in San Francisco. Attack is made indiscriminately upon any and all who express belief in the past or present existence of plague. Even *American Medicine* has been attacked in approved yellow journal style in San Francisco on account of an editorial in our issue of February 21. Our friends assure us, however, that Drs. Williamson, Buckley, Baum, and Lewitt have developed heroic strength under a steady downpour of such atrocious billingsgate, and that whatever is good for men of their mettle is also good for *American Medicine*. The contest is waged not alone for truth and publicity in matters of public health, but at stake is the liberty of sworn officials to do their duty. There is always the saving remnant who count honor and courage more than expediency or than dollars and cents. At their hands the reputations of the defenders of our professional faith will receive eventual vindication, and with them the pleaders for "peace at any price" and the prophesiers of smooth things must reckon.

The Plague Condition in California.—Three recent manifestos from as many responsible sources offer us comforting assurance concerning plague politics and conditions. These are the resolutions of February 2 by the San Francisco Mercantile Joint Committee, the published statement by Dr. Vincent P. Buckley on February 9, and the telegram of Surgeon-General Wyman on February 22. Examined in the light of concurrent events, not alluded to in official correspondence, each of these utterances loses part of its earnest of good things. The resolutions of the Mercantile Joint Committee were in part signed by the Governor of the State, the Mayor of San Francisco, the City Health Officer, the only member of the State Board of Health, the Surgeon-in-charge of the United States Public Health Service, and by the presidents of seven commercial bodies, as follows:

"WHEREAS, Competent medical authority has declared that bubonic pest has existed to a limited extent in the restricted

area known as Chinatown in San Francisco, the last case having been reported December 11, 1902, and although the health authorities have exercised sanitary supervision over this section in the past,

"Nevertheless, this undersigned joint official statement is promulgated in accordance with the resolutions adopted at the Conference of State Health Officers, held at Washington, D. C., January 19, 1903, as an assurance that there is no present or future danger from that disease, inasmuch as complete and harmonious action by all health authorities concerned is hereby assured, and will be maintained."

These resolutions did not make it clear whether the signers did or did not mean to admit the existence of plague. The doubt has been resolved by Mr. L. M. King, secretary of the Mercantile Joint Committee, the proponents and publishers of the resolutions. In the March number of *Merchants' Association Review* Mr. King prints a long article, in which he says:

"It would be as presumptuous for the Association to admit the existence of a thing it knows nothing about as it would be dishonest to deny its existence if it knew plague were here. It is not a health board, and has never considered itself competent to decide a question of pathology on which doctors disagree. Hence it cannot reasonably or decently be called to account for refusing to make an admission that would add nothing to the controversy." (Italics ours.)

Mayor Schmitz did not mean to admit by his signature the past or present existence of plague. Quite the contrary. How shall we discover the meaning of the resolutions as understood by the other signers? Which of them holds the neutral position of the commercial bodies? Do any of them agree with Mayor Schmitz? Have any of them the conviction that plague is or has been present in California? Have these joint resolutions any meaning? These same commercial bodies published in May, 1900, a resolution to the effect that "the city, State, and federal authorities have declared that there is no case of plague in existence" in San Francisco, and "the directors of the Association declare that there has not been in the past and is not at the present time any occasion for alarm." This earlier resolution is now said by Mr. King to have neither admitted nor denied the existence of plague.

The "Harmony" of Scientific and Commercial Interests in California.—Dr. Buckley is one of the five courageous medical men who have upheld the good name of the City Board of Health of San Francisco against a continuous storm of abuse during the past

three years. About February 8 Dr. Buckley prepared a memorandum on the progress of plague. Four newspapers obtained copies of this statement, but not one of them printed it in full. It was no accident that the four offices were unanimous as to what part of Dr. Buckley's "copy" should be printed. This is what appeared:

"During the past 60 days no case of bubonic plague has been discovered in this city, and at no time during that period has the Board of Health, of which I am a member, published or recorded any case of that disease. In view of this fact vessels clearing from this port are given clean bills of health. It is with great pleasure that I make this statement and at the same time denounce as false any and all statements contrary to what is herein contained."

We know nothing about the suppressed matter, but the printed statement consists apparently of two fragments which can hardly have been intended by Dr. Buckley to appear in juxtaposition. The printed statement contains nothing to provoke denial from any quarter, and it seems probable that Dr. Buckley's denunciation of falsehood would have been immediately understood if his communication had been printed in full. On February 22, 1903, Surgeon-General Wyman, of the United States Public Health and Marine-Hospital Service, telegraphed to Mr. Symmes, Chairman of the Mercantile Joint Committee, in part as follows: "No case of plague has been discovered since December 11, nearly two months and a half ago, and then only one case. Official reports show that the national, State, and city authorities are working in thorough harmony under the leadership of the federal officers." It will be remembered that one of the resolutions of the conference at Washington on January 19 named as a condition necessary to the safety of the country that "a competent City Board of Health and a competent State Board of Health in cooperation with the United States Public Health Service" must be "jointly and severally in the free exercise of their lawful powers." Until the middle of February, 1903, the sickness and death inspections in Chinatown were made by physicians appointed by the Gage Board of Health to conceal plague. For nearly three years detectives have been constantly employed to shadow the movements of United States Public Health officers and of all other persons who were known to be honestly looking for plague. By such methods the work was so well done that in 1901 an interval of 93 days passed without the discovery of a case of plague. Good men are now engaged in the inspections, but we are not informed whether the detectives are still active. The State Board of Health of California should be included in a "thorough harmony." There is no State Board of Health. Governor Pardee has withdrawn from the Senate those appointed by ex-Governor Gage and has not as yet named their successors. The State Board of Health of California now consists of one man, Dr. Matthew Gardner, chief surgeon to the Southern Pacific Railroad, a corporation whose immense power has from the first been exerted to suppress the facts and to crush the truth-telling officials of the city, State, and nation. The only sign of a change of heart manifested by the Southern Pacific is the fact that Dr. Gardner confessed in Washington his belief

that plague existed in San Francisco. The "harmony" of the City Board of Health of San Francisco is turbulent. Five physicians appointed by the mayor, with the chief of police and the president of the Board of Public Works, constitute the City Board of Health. Up to January 8, 1903, of the five physicians four, Drs. Williamson, Buckley, Baum, and Lewitt, stood firm for the truth about plague, and with the aid of the chief of police were enabled to make a good fight against both plague and commercial obstruction. On January 8 the term of Dr. Williamson expired, and he was succeeded by a pronounced partisan of Mayor Schmitz's antiplague views. The chief of police notified Dr. Buckley that he could no longer vote with the "stalwarts," because he had been notified by Mr. Newhall, police commissioner, that he must do the mayor's bidding or lose his office. Dr. Buckley published his own affidavit to this bit of history. Unexpected aid came to the "old guard" in the person of the other exofficio member, who has a political grievance and for the present votes against the mayor. Early in February Mayor Schmitz proposed at the General Assembly a bill to prevent the courts from restraining the mayor of San Francisco in the exercise of his power to remove city officials. This bill has passed both House and Senate, and is now in the hands of Gov. Pardee. The most active worker in its behalf was William F. Herrin, chief counsel for the Southern Pacific Railroad. Its confessed intent is to enable Mayor Schmitz to oust Drs. Buckley, Baum, and Lewitt from the City Board of Health, and the newspapers are now gibing at the "expiring wriggles of the bubonics." On February 20 the mayor instituted *quo warranto* proceedings for the purpose of removing Drs. Buckley, Baum, and Lewitt. The complaint cites the allegations made in the mayor's original letter of removal, dated March 25, 1902:

"Following is the cause for which you are removed, to wit: Continued injury and injustice to the people of the city of San Francisco and of the State of California, and to their commercial and financial interest, in declaring, proclaiming, and publishing under your official sanction, and without proper foundation or justification in fact, that bubonic plague exists in San Francisco, and that it has existed therein since March 6, 1900."

Under such conditions as are here set forth no one can believe that the national, State, and city authorities are "jointly and severally in the free exercise of their lawful powers," and it seems most difficult to reconcile such circumstances with the statement that the national, State, and city authorities are "working in thorough harmony under the leadership of the federal officers."

The Fight Against Tuberculosis in Germany.—According to the Imperial Health Office in Berlin the deaths from tuberculosis are about one-tenth of those of all diseases. In 1899 the number of patients treated in hospitals in the Empire was 226,000. According to the latest statistics there are at present 57 public sanatoriums for the tuberculous in Germany, of which 34 are located in Prussia, 6 in Bavaria, 2 in Saxony, 1 in Wurtemberg, 1 in Hessen, 1 in Sachsen-Weimar, 1 in Thuringia, 1 in the Reichsland, 3 in Baden, 2 in Brunswick, and 5 in the Hansa cities. Besides these there are 4 institutions

near the sea, namely, Nordeney, Wyk, Gross-Müritz, Zoppot. There are also 23 public sanatoriums nearly completed, among these being Buch, near Berlin. The city of Berlin has at the present time 3 public sanatoriums, namely, Malchow, Blankenfelde, Gütergotz. There are also 20 private German sanatoriums, and 1 in Davos (Switzerland). In the 78 sanatoriums for tuberculous there are 7,000 beds. If we calculate that each bed is used by 4 persons in the course of a year, we find that about 30,000 tuberculous annually enjoy the benefit of treatment in the sanatoriums. The efforts made in the German Empire to combat tuberculosis, both by direct regulations and by general preventive measures, are being actively carried on. In particular, the Imperial Government, the governments of the different States, the executive authorities, the national insurance institutions, and the municipal governments are seriously and actively participating in this work. The result of these efforts, which have now been carried on for some years, is already noticeable in a decrease in the number of deaths from tuberculosis, which in the future will be still more marked. Success in combating tuberculosis depends, in the first place, upon the proper disposal of the sputum. It would be interesting to know if the statistics show a rise in the pneumonia mortality, almost in proportion to the fall in tuberculosis—a fact which seems to be pretty well established in this country. The significance of this fact seems to be insufficiently appreciated by us.

The Crime of Encouraging Beggary.—Mr. Benjamin C. Marsh has been making a study of criminal charity as illustrated in the support and encouragement of beggary in Philadelphia. He found that the Wayfarers' Lodge is avoided by the beggars. There were 110 empty beds at the Lodge. In the popular religious and other lodging-houses, missions, etc., there was indecency, dirt and sham, while laziness and beggary were encouraged. Applicants were actually told where to go to beg for tickets which had been sold to the "charitable" at the rate of ten for \$1. These tickets are exchangeable for drinks at the neighboring saloons. "It's a disgrace to work in Philadelphia when you can get along so easily without doing a stroke." This was said by a "five-cent flopper," *i. e.*, one of hundreds who are allowed to sleep on the floors of some of the cheap lodging-houses for five cents. Mr. Marsh begged \$1.15 in an hour, as a test. "Most ministers are dead easy blokes," said a comrade. "By an ironical propriety," says Mr. Marsh, "the lodging-houses in Philadelphia are under the supervision of the Inspector of Nuisances. There are 106 cheap ones in the city, accommodating 4,643 lodgers." He heard one superintendent of a mission deliver a tirade against "selfish wealth." At the Sunday Breakfast Association there were about 800 in attendance who had come, as the leader said, for "spiritual food." The filth, mental, moral and physical, of the conditions at the places liked by the beggars were in glaring contrast to those of the Wayfarers' Lodge, with its 110 empty beds. But here a work test is asked of those who are able. That selfish and lazy charity is an expensive luxury is a truth Philadelphians

appear slow to learn. In Baltimore recently the blind, lame, armless, and crippled beggars were brought in by the police, and all were suddenly transformed into seeing, sound, whole, and healthy scalawags.

"Patent Medicines," "Bitters," and Nostrums as the Cause of Alcoholism, Etc.—We would like to call the attention of the *New York Weekly Witness* (see our issue of January 2, 1903, page 2) and also of many other saintly defenders of their nostrum advertisers, to an article by Dr. Lewis D. Mason in the *Journal of Inebriety* for January, 1903. Dr. Mason divides these nostrums into two classes:

First.—Those advertised for the relief of various painful affections, such as neuralgia, rheumatism, gout, etc., the basis of which is opium or its alkaloids, or a class advertised as "tonic," the basis of which is alcohol in some form.

Second.—Patent medicines advertised as "cures" for the liquor or opium habit, the basis of which is frequently in the former case alcohol, and in the latter opium or its alkaloids.

To illustrate "the way of the world," the following example of the concoction and history of a nostrum is given:

"Make the basis whisky; put in some opiate; disguise the whole with a bitter tincture; get high-sounding testimonials or indorsements, and especially give it an attractive, 'taking' name. Then extensively advertise it from 'Dan to Beersheba' and the thing is done. The young man got up such a preparation, called it 'Scotch Oats Essence'; and secured indorsements and testimonials of a high character and advertised extensively. He spent over \$40,000 on the investment. A friend of mine analyzed the preparation, published the formula, showing it contained morphin. As a result the sales fell off, insolvency and financial ruin followed. Then the proprietor drank himself to death, mortified at his failure and public exposure."

It is one of the saddest facts that American legislatures will permit this horror to go on indefinitely. That the alcohol and morphin "cures" contain the very drugs themselves they are hypocritically supposed to overcome is diabolism run mad. When we become civilized the first evidence will consist in laws making it a highly punishable offense to sell any patent medicine containing alcohol, opium, or other narcotic, unless the label shows the exact constituents.

"Institutional Quackery."—In 1893, according to Dr. Lewis D. Mason (*Journal of Inebriety*, January, 1903), the New York Academy of Medicine

Resolved, That it is the sense of this meeting that all institutions for the care and treatment of those addicted to the use of alcohol, opium, or kindred drugs, should be under the supervision and inspection of a State commission, which should consist of experts in these specialties, and which should exercise its duties, under the same privileges and opportunities as are now extended to a similar commission consisting of experts on insanity, whose duty it is to supervise and inspect the care and treatment of the insane in the various insane asylums of the State.

For ten years the abuse which this resolution was designed to prevent has been growing at an astounding rate. The greatest dignitaries of the land, as we illustrated editorially page 994, December 27, 1902, now support institutions devoted to the treatment of various forms of inebriety by secret methods. At the meeting of the Society for the Study of Inebriety held in Boston December 18, 1902, it was again

Resolved, That we reaffirm and indorse a resolution passed at a meeting of this society held March 23, 1893, in reference to the licensing and proper inspection of all institutions for the care and treatment of inebriates, morphia habitués, or other forms of narcomania.

Why should such institutions wish really to cure their patients? The longer their victims stay and the more frequently they relapse and return the better for the owners and stockholders. This is the sole argument needed against the support of institutional quackery. The State should assume the oversight of these places and as the first step in reform abolish secrets in the treatment of the patients.

Penalizing the transmission of venereal infection has been a measure we have often advocated. What greater absurdity is there than making it a crime for one suffering from smallpox, etc., knowingly to expose himself to others, and to allow those with venereal disease surely to infect others with the most loathsome of all afflictions, perhaps to kill them—all for a moment's gratification. A sense of this revolting illogicality, it seems, has made itself evident in Paris, where an important judgment has recently been delivered by the Tribunal of the Seine, by which the transmission of syphilis by persons knowing themselves to be affected, even though they do not willingly transmit the disease, becomes a penal offense, for which an indemnity can be obtained by the recipient. In the case before the court a man suffering from syphilis had sexual intercourse with, and infected, a girl aged sixteen, who had previously been perfectly healthy. The court granted her substantial damages to the extent of 12,000 francs. This, we hope, is the beginning of the end of the hideous injustice by which libertinage has been free to pollute and murder multitudes of innocent wives and children, and to shove upon the community the terrible economic burden of the millions of hopelessly diseased and good-for-nothing sufferers. We have before demonstrated that the venereally diseased are not worth their keep. They become a dead weight upon the profession and the benevolent, a curse to themselves and the world, and all because we stupidly refuse to penalize the crime that keeps it up.

Chicago's drainage canal and sewer system, if we may judge from the reports of the latest Bulletin of her Health Department, are dismal failures. "Untreated hydrant water" is earnestly advised against, and the warning given that there is imminent danger of another outbreak of typhoid fever. "The city sewer system is outgrown." Mayor Harrison recently asked the Comptroller's office for an opinion on these subjects and the Comptroller replied that until a branch is constructed to connect the canal with the Calumet district, Chicago will not get the benefits for which so much money has already been expended. Nine-tenths of Chicago's drainage has been diverted from Lake Michigan to the canal and thence to the Mississippi, but the remaining one-tenth is able to make almost as much trouble as the entire lot. The Calumet district, which has been increasing greatly in population, drains into the Calumet river, and it, in turn,

empties into the lake. There is the whole trouble. "The use of great sums of money in the building of the sanitary canal was a political crime, unless the Calumet district were included," declares the Comptroller. We should hesitate to quote the following passage were it not taken from the Health Department's Bulletin itself: "Chicago's head may be among the stars, as a recent writer claims, but her feet are in the mire, and the mire grows deeper and deeper year by year." Have the two cities yet settled the question, Can bacteria voyage successfully from Chicago to St. Louis via the drainage canal?

The duties and responsibilities of physicians as to preventive medicine has been a constant theme of *American Medicine* since its foundation, but we have nowhere seen a better summary and a more enheartening plea concerning the matter than that of Dr. Burnside Foster, concluded in our forelying issue. We trust every subscriber will read every line of it. Among many subjects illuminated by Dr. Foster there is one which has been frequently urged in these columns—a more thoroughgoing and businesslike saving of their money by insurance companies through preventive medicine as applied to their policy-holders. At present they are paying out vast sums of their money because of needless and premature deaths. Periodical examinations of policy-holders, in order to detect the early symptoms and to prevent the ripening of subtle diseases, are strangely omitted by the companies. A capital suggestion is that urged whereby these organizations should insert in every policy the conditions that nostrum-taking or nontreatment, as, *e. g.*, by the eddyite and other quack methods, shall invalidate the contract. Why should an insurance company pay out its money and needlessly raise the rates to all others because of the hastened deaths of the foolish at the hands of the nostrum syndicates and of criminal ignorance?

The Responsibility of Accident Insurance Companies as to the Results of Infection.—The conclusion reached by insurance companies that the suicide clause is an insufficient defense is now followed by a further admission that contested claims do the companies more harm than good. This conclusion will be put beyond further doubt by a recent legal decision in Great Britain which defined a policy-holder's right to recover under an accident contract in cases where death results from disease weeks after the injury has been received. The patient died of septic pneumonia following and caused by erysipelas after a simple scratch on the leg. In the decision of the justice it was said if it was once agreed that the same scratch broke the man's skin and introduced into the wounded surface the germs which eventually poisoned him, the conclusion was irresistible that the morbid condition of the illness which was ultimately fatal was directly and solely caused by the wound. Suppose a man was bitten by a mad dog and died of hydrophobia, the court should say that the death resulted from the bite, although the actual destruction of life resulted not from the bite but from the poisoning set up by the bite. The professional verdict upon this decision must be that it is sound, scientific, and just.

The right to do as one pleases about himself and his health, urged by Mark Twain and other social pseudo philosophers, is getting its "everlasting no" at the hands of disease and in the interests of the common weal. More tyrannical, but more justly so than any tyrant is democracy when it comes to consciousness and realizes the pathologic power of the foolish or selfish individual to work harm to all by his folly and selfishness. The question now is not "Am I my brother's keeper?" but, rather, Is he mine? By a recent act of the Ithaca Board of Health it is a made a misdemeanor punishable by \$50 fine or fifty days in jail for any one to drink unboiled water or to furnish it to others for that purpose.

EDITORIAL ECHOES

Education and Tuberculosis.—To break the nefarious trade of the man who deals in "sure and infallible" pulmonary tuberculosis remedies, to stop the practice of the man and woman who claim to be able to diagnose and treat pulmonary tuberculosis by letter, the Christian scientists, the faith curists, who ridicule preventive measures and the laws of cleanliness and hygiene—which are the laws of God—but who, as a token of faith, demand their fees in advance, we have but one weapon, and that is education—education by a conscientious press, the clergyman, and the teacher.—[*Dr. S. A. Knopf.*]

The Nostrum Traffic.—There are also nostrums which promote and intensify the very condition which they pretend to cure. These are composed largely of alcohol. Most of the so-called "bitters" come under this classification. The annual report of the Massachusetts Board of Health for 1896 is a classic on this subject. It contains analyses of sixty-one kinds of bitters, tonics and sarsaparillas then in vogue, some of the most notorious of which are still on the market, and many of which have been advertised as "purely vegetable," "free from alcoholic stimulants," "not a rum drink," etc. Parker's tonic, "recommended for inebriates," was found to contain 41.6% of alcohol. Ayer's Sarsaparilla contained 26.2%, Hood's Sarsaparilla 18.8%, and Paine's Celery Compound 21%. A lot of "blood purifiers" were found to contain iodid of potassium, which is classed among poisons by nearly every writer upon toxicology. "It is not uncommon," says the Massachusetts report, "to find persons who have used continuously six, eight, or ten pint bottles of one of these preparations." They can usually be identified by their pale, sallow complexions. There is another class of nostrums that may be called unmitigated swindles, as where bread pills are sold for the price of costly drugs. An instance of this kind was given in the Massachusetts report, where "Kaskine," a much-vaunted remedy, which sold at \$1 an ounce, was found to consist of nothing but granulated sugar.—[*N. Y. Evening Post.*]

On the Existence of Arsenic in Animals.—G. Bertrand communicates a note on his researches which tend to demonstrate the presence of minute quantities of arsenic in marine animal organisms—in other words, in creatures living far from all possible contaminations which might result from more or less direct contact with modern industries. These researches have been carried on in animals of the greatest diversity, and establish the fact that arsenic is not characteristic of certain groups of beings, but is found throughout the entire animal series. This metalloid exists in all the tissues, and appears to be one of the fundamental elements of protoplasm. A. Gautier, commenting on the report of Bertrand, states that from his researches on domestic and wild animals, arsenic appears to be exclusively localized in the ectodermal organs.—[*La Semaine Médicale*, November 19, 1902.]

AMERICAN NEWS AND NOTES.

GENERAL.

Cholera in the Philippines.—It is reported that since the present outbreak of the epidemic of cholera in the Philippine Islands not fewer than 25,810 cases have been reported. The disease is still exceedingly epidemic in the Moro country and in Misamis. In the latter locality many natives are dying daily. One American surgeon and two assistants are in charge.

Smallpox in Trinidad.—Dr. Bridger, who has been commissioned by the authorities of the Island of Barbados to investigate the eruptive fever prevailing in the Island of Trinidad, reports that it is a widespread and rapidly increasing epidemic of smallpox. He bases his statement on evidence obtained and on observations made. The Trinidad medical board, however, declares that smallpox does not prevail there epidemically, and that the eruptive fever referred to is not smallpox.

Hospital Benefactions.—LOWELL, MASS.: Frederick F. Ayer, of New York City, has made a gift of \$100,000 to the Lowell General Hospital and has promised to give \$5,000 additional toward the floating debt provided that the debt is raised immediately. CAMBRIDGE, MASS.: Miss Agatha Schurz and Miss Marianne Schurz, of New York City, have given \$3,000 to establish the Herbert Schurz Memorial Fund for the care of needy students at the Stillman Infirmary. BOSTON, MASS.: Under the will of the late Jacob H. Hecht the Massachusetts General Hospital and the Boston Lying-in Hospital each receives \$5,000, the Industrial School for Deformed and Crippled Children \$500, and smaller amounts are given to various other hospitals and similar charities.

Miscellaneous.—PHILADELPHIA, PA.: On March 11 William B. Atkinson completed his fiftieth anniversary as a practitioner of medicine in the city of Philadelphia, he having graduated from the Jefferson Medical College March 11, 1853. In this class there were 223 members, and Dr. Atkinson with only five more members of the total number survive. The doctor on the date mentioned held a reception at which many people assembled to offer congratulations and good wishes. Many letters and telegrams were received expressing the same sentiments. NEW YORK CITY: Dr. George L. Mylan, of Boston, has been elected adjunct professor of physical education and medical director at Columbia University, and will enter upon his new duties next fall. Dr. D. S. D. Jessup, one of the teaching staff in the New York College of Physicians and Surgeons, has been appointed medical visitor to Columbia University.

Decrease of Lepers in Hawaii.—According to the report of Governor Dole to the Legislature, leprosy has decreased greatly in the Hawaiian Islands during the past 12 years. This decrease is attributed to the rigid enforcement of the law requiring the segregation of those afflicted with the disease. Governor Dole's message contains the following statement: "Since 1887 the law has been vigilantly carried out. The number of admissions in 1888 was 579, in 1889, 308, and in 1890, 202, and from that year to the present time the admissions have decreased in number, though not regularly from year to year, but taking the 12 years beginning with 1890 and ending with 1901, in sections of three years each we find the admissions to be as follow:

1890 to 1892 inclusive.....	454
1893 to 1895 inclusive.....	445
1896 to 1899 inclusive.....	350
1899 to 1901 inclusive.....	254

Several bills which have been recently introduced into the Hawaiian Legislature are of interest. One repeals all laws pertaining to leprosy; another permits all persons to treat leprosy, and a third prohibits persons afflicted with leprosy or tuberculosis from remaining in the territory.

EASTERN STATES.

Cleaner Street Cars.—A set of resolutions has been submitted to the Cambridge Board of Health, asking that they be made a part of the municipal law. According to them at the end of each day every car in the service of a street railway must be thoroughly fumigated and during the time any car is in use the ventilators must be kept open at least one inch, and at the end of each trip ventilators and doors must remain open until the car goes out on the next trip. A copy of the resolutions is being placed in each car and in each car house. The penalty for violation is \$100.

NEW YORK.

Glanders in New York.—Officials of the Health Department of New York have concluded from investigations that glanders is more prevalent than was formerly supposed. Active measures are being taken to combat the disease and orders have been issued for the destruction of all horses that are found to have glanders. In a stable in which the disease was discovered to be epidemic the health department representatives found that within the past three months 13 horses had died and 7 others had been killed or removed.

Typhoid in West Seneca.—Dr. Walter Green, health commissioner, and Edward Clark, his deputy at Buffalo, have been sent to Seneca as representatives of the State Department of Health to combat the typhoid epidemic now prevalent there. There are now about 170 cases of typhoid in West Seneca, and there have been many more.

Trachoma in School Children.—In spite of the fact that physicians of the Health Department continue to inspect the schools, trachoma is still giving as much trouble as when the crusade against it was first instituted. The disease is confined almost exclusively to the lower East Side of Manhattan. This is probably due to the fact that a child who has been treated and cured is reinoculated by parents or other persons in the family. Since the establishment of a hospital and a dispensary for the treatment of trachoma in the old Gouverneur Hospital early in December, there have been treated from 400 to 700 cases daily up to the present time.

Armstrong Bill for Trained Nurses.—Representative trained nurses and representatives to the number of 30 from the New York Presbyterian Hospital, and from training schools in Utica, Buffalo, and Rochester, have appeared before the Senate Judiciary Committee at Albany in support of the Armstrong bill, establishing the degree of trained nurses, to be conferred by the Board of Regents upon such as pass the required examination and have had the previous necessary training. The only opposition to the bill is based upon the requirement that the examining board shall be nominated by the Nurses' Association. It is believed the bill will pass.

Rev. Dr. Parkhurst and Eddyites.—In a sermon on "Sin," the Rev. Dr. Parkhurst is quoted as having used the following language with reference to the eddyites: "I should not want to stand sponsor for all the methods and teachings of Jonathan Edwards, but if there could sweep over this city that same tidal wave of heart-searching and intense moral self-conviction such as was started by his handling of the Bible, and his address to the conscience, there would not be left a Christian science edifice in the city. They would all be built over into apartment houses, or, more likely, into Christian churches, for the promulgation of God's truth, and the priests and priestesses of this unctuous fantasy would fall upon their knees alongside of the poor publican and cry: 'God be merciful to me, a sinner.'"

Proposed Sanatorium for Tuberculosis.—The Committee on the Prevention of Tuberculosis of the Charity Organization Society has submitted plans for the erection of a sanatorium in the Adirondacks to Dr. Lederle, of the New York Health Department. The Board of Health will endeavor to obtain from the Board of Estimate a sufficient appropriation to begin work on the institution, which as proposed will accommodate 480 patients and will probably be the largest of its kind in existence. The cost of erection, aside from obtaining the necessary site, is estimated at \$530,000. The urgent need of a special institution to care for the tuberculous of New York City is emphasized. It has been found that there are about 30,000 cases of tuberculosis in the city, and the general hospitals are unequal to the task of caring for these sufferers, and it is therefore argued that the only way to treat the disease successfully is in appropriate institutions especially devised for the purpose. The plan provides for a group of structures, the general arrangement of which will be fan-shaped, with the administrative building at the center and the pavilions projecting like the sticks of a fan, thus giving each pavilion a maximum of light and air. The pavilions are to be two stories in height, and connect with each other and the administrative building by covered corridors. A bill has been introduced into the Legislature which enables the health department to acquire lands at any point in the State for the purpose of erecting such a sanatorium, and effort will now be bent on securing the necessary appropriation for its erection.

PHILADELPHIA, PENNSYLVANIA, ETC.

Smallpox in Philadelphia.—During the week ended March 14 there were 44 new cases of smallpox reported to the health department. During the previous week there were 17 new cases. This increase is probably only temporary, but it shows that the disease has still a strong hold on the city.

Ostracism or Vaccination.—The Bristol Board of Health at a special meeting decided to procure or erect a building for the care of smallpox patients. A house-to-house visitation by vaccine physicians was also ordered for the purpose of vaccination, and the town was divided into seven districts with a physician for each district. Social ostracism is planned for those who refuse to avail themselves of the free inoculation offered by the board, as the physicians are instructed to report daily the names of those vaccinated and also those who refuse. The names of the latter are to be published in the local papers. The local association of mill owners has decided to cooperate with the Board of Health in the effort to stamp out the smallpox that has prevailed there without cessation for 15 months. During that time there have been 60 cases, 9 of which have resulted in death.—[*Philadelphia Press.*]

Eddyites and Smallpox.—In the columns of last week's issue of *American Medicine* we reported the case of a Philadelphia eddyite who after suffering for a week with a virulent type of smallpox and refusing to call a doctor, though constantly surrounded by members of his own family and others, was forcibly taken to the Municipal Hospital for treatment. The sequel to the above is exemplified in the fact that since our last publication two other members of the same family have been stricken with smallpox and sent to the Municipal Hospital.

Army Canteen Substitute.—A plan adopted by officers at a certain post is likely to be followed at other posts when it can be done with safety. It is learned that at the post referred to the commanding officer and his subordinates secretly arranged with a civilian for the establishment of a first-class place immediately outside of the government reservation. It was agreed that the place should be run in a practically similar manner to the "post canteen." The rooms were light and airy, were kept clean, and strict order was preserved. A reading-room, well stocked with reading matter, was provided for the men; pool and billiard tables were available for use to a charge of one cent a cue, and each man was limited to six bottles of beer per day, at eight cents a bottle, while in the low "joints" the men had been patronizing they were charged 12½ cents a cue for the use of the table and exorbitant prices for the vilest quality of liquor. Each man was limited to \$5 credit per month, and the officers saw that each man's indebtedness to the proprietor was met. At this particular post during the month immediately prior to the establishment of this "canteen," 75 courts-martial occurred, and the officers were almost in despair because of their inability to maintain discipline. During the first month the place was running there were only five courts-martial.—[*Public Ledger.*]

The State Sanatorium Committee of the Pennsylvania Society for the Prevention of Tuberculosis, composed of Dr. Guy Hinsdale, chairman; Dr. Benjamin Lee, secretary of the State Board of Health, and Dr. M. Ravenel, of the University of Pennsylvania, with the president of the society, Dr. Howard S. Anders, met recently at Harrisburg in advocacy of the bill appropriating \$500,000 for two sanatoriums for indigent consumptives, to be under direct governmental initiative and control, and for reasons of salubrity and economy to be located within the forestry reservations upon sites selected by a commission of five to be appointed by the Governor, the expenses of the commission not to exceed \$5,000, and the work of same to consist also of planning methods of construction, character of equipment, administration, etc. After being received by Governor Pennypacker in the afternoon the four were heard by the Appropriations Committee of the House of Representatives. Dr. Anders at both hearings appealed for direct State control because of the urgent need and the meagerness and uncertainty of private charity to meet it; the analogy of State care of the insane, the blind, and other defectives, numbering altogether less than the tuberculous, and the example of recent history in the action taken by European governments and other States here. Dr. Hinsdale referred to the great natural advantages of the State for the care of consumptives, the feasibility and economy of State forestry camps for large numbers of tuberculous, and strongly emphasized the necessity of the Commonwealth making at least an adequate start in the work. Drs. Lee and Ravenel urged the enormity of the neglect of the tuberculous, the needs of segregation for public safety, and the inability of philanthropy, even with government aid, to cope with the demands. The work at White Haven was commended and its inadequacy pointed out.

SOUTHERN STATES.

Smallpox in Virginia.—The Secretary of the State Board of Health of Virginia states that the average number of smallpox cases in the State for the past six months was large, over 100, and that at the present time he is confident that there are not less than 200 cases; and that the border counties in Kentucky and Tennessee are likewise suffering from the disease. The epidemic is of a virulent type.

Law Against Sky-scrapers.—A new law in the city of Washington requires that hereafter no buildings on resident streets can be over 80 feet high. The new law it is said interferes with several new apartment houses now under construction, and the plans of the builders will have to be modified in accordance. The law permits buildings facing Government parks and triangles to be as high as the wider street at the intersection is wide. This privilege was secured to settle a controversy as to a large hotel which was contemplated on the site of the Hotel Lawrence.

American Medical Association.—The Southern Railway announces that for the occasion of the meeting of the Association in New Orleans, May 5, 6, 7, 8, 1903, tickets for the round trip, limited to 10 days will be sold for one fare. By deposit of ticket by original purchaser, and payment of 50 cents, to joint agent, New Orleans, not later than May 12, extension of final limit may be obtained to enable the purchaser to reach original starting point not later than May 30, 1903. Special service trains composed exclusively of Pullman, dining, drawing and state-room, sleeping, library, and observation cars has been

arranged to leave New York at 4.25 p.m., May 2, via Washington, Atlanta, and Montgomery. Time, New York to New Orleans, 39 hours.

Medical Inspection of Public Schools.—Commissioner Macfarland will soon appoint 12 medical inspectors of schools in the District of Columbia. The commissioners have heretofore urged a law providing for medical inspection. This year they were successful and Congress made provision for the appointment of 12. The provision reads as follows: "For 12 medical inspectors of public schools, 4 of whom shall be of the colored race, at \$500 each, \$6,000; provided that said inspectors shall be appointed by the Commissioners only after competitive examination, and shall have had at least five years' experience in the practice of medicine in the District of Columbia, and shall perform their duties under the direction of the health officer and according to rules formulated from time to time by him, which shall be subject to the approval of the Board of Education and the Commissioners."

WESTERN STATES.

Pasteur Institute for Hydrophobia.—It is reported that the Michigan Board of Regents of the University of Michigan has decided to establish a Pasteur Institute at the university for the treatment of cases of hydrophobia. The institute will be in operation after April 1, 1903.

The Harvey Medical School, of Illinois, is to be affiliated with the State University, which is represented in Chicago by the College of Physicians and Surgeons. Harvey College admits only night students, and its affiliation with the University will add to its importance and will give it an advantage no other university enjoys, in being allied with two medical colleges, one with day and the other with night classes.

Necropsy Findings in Dogs Dead From Rabies.—The Bulletin of the Health Department of Chicago for the week ended March 7, 1903, says: Notes from the municipal laboratory report that postmortem examination of a dog that bit a boy on Garfield boulevard showed the spinal cord congested and the stomach full of grass and sticks. These conditions indicate that the animal was suffering from rabies. Rabid dogs have been killed in several places in the city during the past two months. Postmortem examinations or animal inoculations do not always demonstrate the presence of rabies in its early stages. The public should appreciate the importance of securing a dog that has bitten any one and keeping him alive until it is positively known whether or not it is suffering with rabies.

Mortality of Michigan During February, 1903.—The total number of deaths was 2,756, or exactly 100 fewer than the number of deaths in the preceding month. The deathrate was 14.4 per 1,000 population, as compared with 13.5 in January. The mortality was slightly higher than that for February of the preceding year. By ages, there were 559 deaths of infants under 1 year, 175 deaths of children aged 1 to 4 years, and 874 deaths of persons aged 65 years and over. Important causes of death were as follows: Tuberculosis of the lungs, 182; other forms of tuberculosis, 35; typhoid fever, 34; diphtheria and croup, 52; scarlet fever, 16; measles, 17; whoopingcough, 31; pneumonia, 372; influenza, 73; cancer, 126; accidents and violence, 134. There was a decrease in the number of deaths from typhoid fever and scarlet fever, while the number reported from influenza was nearly double the number in January. The deathrate from this cause, however, was not as high as during the same time last year. Pneumonia showed a very slight decrease in the number of deaths reported. There were 5 deaths from smallpox.

FOREIGN NEWS AND NOTES

GENERAL.

Antituberculosis Serum.—It is stated that Professor Behring, the discoverer of antiphtheric serum, has announced the discovery of a serum by means of which calves can be made perfectly immune to tuberculosis, and which he believes will be equally applicable to human beings. The profession awaits with some interest the outcome of Professor Behring's experiments.

CONTINENTAL EUROPE.

The Nestor of Medicine.—Dr. David, of Montpellier, France, celebrated his one hundred and second birthday February 8, 1903. He is said to be the oldest member of the medical profession now living. He practised medicine until his ninety-eighth year. Dr. David attributes his longevity to sobriety and outdoor life. He has very good health, but is now troubled by failing eyesight.

Hygiene in Relation to Shipping.—In opening an official course of lectures on naval and colonial hygiene at the University of Naples, February 4, 1903, Professor Alessandro Pasquale, speaking of the scope and importance of the subject, said that in a country from which there is such an extensive emigration, as from Italy, it is necessary for the universities to

provide instruction on hygiene in relation to the shipping in order that there may be assurance that emigrants and the ships on which they leave may be in a sanitary condition satisfactory to the authorities of the countries to which the emigrants go. Not only is it the duty of the country from which emigrants leave to provide for suitable sanitation on the passage, but means should be taken to keep persons physically unfit from emigrating and to prepare such as do emigrate against the perils of a climate to which they are unused. The course at the university will include instructions in naval construction from a sanitary standpoint, examination of water, air, and food aboard ship, the consideration of air space, disease on board ship, disinfection, quarantine, the examination of personnel, and in short, all subjects in which medicine has a practical bearing on shipping.—[*Public Health Reports.*]

OBITUARIES.

William P. Munn, of Denver, Colo., March 13. He was graduated from the University of Michigan, Ann Arbor, in 1886. He was a member of the American Medical Association, formerly president of the Colorado State Medical Society, member and former president of the Denver and Arapahoe Medical Society and recently chief of the Board of Health of Denver. He was also a former professor of gynecology and clinical surgery in the University of Denver.

George Washington Le Cato, of Richmond, Va., March 12, aged 61. He was graduated from the University of Maryland, Baltimore, in 1864. He first located in New York City and served as a member of the Board of Health. He was one of the most popular and widely known men on the eastern shore of Virginia and had been an influential member of the State Senate since 1893.

Willard I. H. Mathews, in Des Moines, Iowa, February 24, aged 38. He was graduated from the Iowa College of Physicians and Surgeons in 1886. He was county physician of Polk county, major and brigade surgeon U. S. V. in the Spanish-American war, and was for a time in charge of the United States General Hospital, Presidio, San Francisco.

Franklin B. Galbraith, of Pontiac, Mich., February 21, aged 63. He was graduated from the University of Michigan, Ann Arbor, in 1861. He was a member of the American Medical Association, surgeon to the Fourth Michigan Volunteer Cavalry during the Civil war and served three times as mayor of Pontiac.

George E. McPherson, in San Francisco, Cal., February 20, aged 73. He was graduated from the Jefferson Medical College, Philadelphia, in 1855. He served as surgeon in the United States service in the Civil war.

Frank Brownlie Newton, in Stafford Springs, Conn., February 19, aged 28. He was graduated from the University of Vermont, Burlington, in 1899 and was a member of the Connecticut Medical Society.

George C. Gage, in New York City, February 22, aged 52. He was graduated from the College of Physicians and Surgeons, New York, in 1872, and was a specialist in diseases of the nose and throat.

A. W. Church, of Jersey City, N. J., March 13, aged 32. He was a graduate of the Edinburgh University of Scotland and of the medical department of the Columbia University, New York City.

Joseph A. Jackson, in Manchester, N. H., February 20, aged 68. He was graduated from the McGill University, Montreal, in 1879 and was a member of the New Hampshire Medical Society.

George White Sloan, in Indianapolis, Ind., February 15, aged 67. He was a graduate of the Indiana Medical College and president of the American Pharmaceutical Society.

Charles Walter Palmer, of Newhope, Pa., March 9, aged 36. He was graduated from the Jefferson Medical College in 1902. He was also a graduate in pharmacy.

James Calvin Hall, in Millerstown, Pa., February 11, aged 48. He was graduated from the Baltimore College of Physicians and Surgeons in 1879.

Cyrenius D. Spencer, in Binghamton, N. Y., February 22, aged 77. He was graduated from the Berkshire Medical College, Pittsfield, Mass., in 1849.

Edward H. Luckett, in Owensboro, Ky., February 24, aged 70. He was graduated from the Kentucky School of Medicine, Louisville, in 1854.

Robert H. Romage, of Carnegie, Pa., February 15, aged 61. He was graduated from the Homeopathic Hospital College, Cleveland, in 1872.

Henry McQuiston, at Pasadena, Cal., February 13, aged 65. He was graduated from the Western Reserve University, Cleveland, in 1868.

Robert M. Means, at DeHaven, Pa., February 14, aged 35. He was graduated from the Jefferson Medical College, Philadelphia, in 1893.

John B. Liddell, in Gadsden, Ala., February 22. He was graduated from the Atlanta (Ga.) Medical College in 1880.

C. M. Skinner, of Hartland, Wis., March 14. He was graduated from the Rush Medical College, Chicago, in 1876.

George Young, of Pioneer, Ohio, February 15, aged 64.

Frank Turnbull, of Goderich, Ont., March 12.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

THE UNTOWARD EFFECTS OF AN EXCESSIVE DOSE OF HYOSGIN HYDROBROMATE.

To the Editor of American Medicine:—The following case is reported as one of interest on account of the untoward effects of an excessive dose of hyoscin hydrobromate. The administration of the drug was an unfortunate blunder, one placing the patient for several hours in very great danger. From our mistakes we learn, sometimes, as much as from our successes, hence this report.

H. L. M., a male of 23 came to me November 5, 1902, to receive treatment for syphilis of 2½ years duration. Treatment was administered hypodermically, six tablets, 2 mg. ($\frac{1}{50}$ grain) each, mercuric chlorid, twice weekly.

The solution was made up in the usual manner and injected into the gluteal region. Within five minutes after the administration of the drug the patient complained of some disturbance in the head, chiefly a feeling of intoxication, and directly afterward of blurring of vision, followed immediately by change in the facial expression. The pupils dilated at this time. An immediate investigation revealed the fact that in making up the solution for the injection a bottle containing hypodermic tablets of hyoscin hydrobromate had been substituted for the one containing mercuric chlorid.

The patient had received six of these tablets, each containing .6 mg. ($\frac{1}{100}$ grain), making in all 3.6 mg. ($\frac{1}{27}$ grain). Within ten minutes after the administration of the drug the patient became dizzy, this being followed quickly by incoordination of the muscles, affecting especially the lower extremities. This was followed by an inability to stand upon the feet, or to support the body in a sitting posture. Extreme nervousness manifested itself along with the muscular incoordination.

Rigors with chattering of the teeth followed. Later the patient stated that he felt as if a faradic current was being turned through his body. He complained of pain in the head and inability to move the limbs, especially the legs, saying his "legs were too heavy to move."

There was dryness of the mouth, face was flushed, voice was hoarse, and there was some difficulty in articulation. He complained of dyspnea, and pupils were widely dilated. At this stage he was semidelirious part of the time, later becoming wholly so. Eyes were open a part of the time. He would sink into slumber which was not profound, and from which he could be easily aroused. Respiration, which was rapid and labored during the early stage, became slow, full, and regular toward the end. Skin was moist, pulse very irregular with frequent and marked changes, some times weaker than at other times, rate being from 84 to 138. Pulse became slower and more full at the end of three hours.

Six hours after receiving the drug the patient walked three squares to the car. His gait was unsteady during two-thirds of the distance traversed, but improved thereafter. After being put to bed he slept through the night, but continued to talk the greater part of the time. Of this, and the events following the development of the marked symptoms of poisoning, he was unconscious the following day. He complained of some nausea early next morning, but after eating breakfast he experienced no further distress in that way. A feeling of fulness in the head and some difficulty in concentrating the mind was experienced throughout the day.

The treatment employed immediately after the development of symptoms of poisoning consisted in a hypodermic injection of strychnin sulfate 1 mg. ($\frac{1}{100}$ grain), nitroglycerin .6 mg. ($\frac{1}{100}$ grain); digitalin .6 mg. ($\frac{1}{100}$ grain). This was followed by 1.3 cc. (20 minims) of deodorized tincture of opium; this by 8 mg. ($\frac{1}{8}$ grain) pilocarpin hydrochlorate. Later he received .32 gram (5 grains) of chloral hydrate; later, another 8 mg. ($\frac{1}{8}$ grain) pilocarpin hydrochlorate.

Pilocarpin and heart stimulants were administered hypodermically, and the chloral and opium by the mouth.

A. B. D.

REPORT OF A CASE OF APPENDICITIS WITH CHOLECYSTITIS OF TYPHOID ORIGIN.

BY

CARL J. HOLMAN, M.D.,
of Mankato, Kan.

H. W., aged 22, had always been well up to November 19, 1900, when he had an attack of typhoid fever. Two years before his father died of pulmonary tuberculosis at the age of 90. His mother, four brothers and three sisters are living and well. On April 4, 1901, he complained of pain in the abdomen which was referred to the region across the umbilicus; it came on three days before. He had been nauseated for 16 to 18 hours, the

appetite was poor and there was diarrhea. The tongue was coated, abdominal reflex was marked on the right side. He referred the pain to McBurney's point, where there was marked tenderness. A diagnosis of catarrhal appendicitis was made. Rest in bed and bowel feeding in place of receiving nourishment by mouth was advised. He would not consent to this treatment. Three days later he returned to my office complaining of more pain in the lower right abdomen. Pulse was accelerated 86 to 90, temperature was 99.5°, respirations 22. There was increased tenderness over McBurney's point, and some abdominal rigidity. He had been given mild laxatives, and had had free stools. The urine was acid, specific gravity 1.024, with a trace of albumin, but no sugar; urea, 2.5%. The microscope showed a few leukocytes. His weight was 148 pounds. Here were the four cardinal symptoms of appendicitis—pain, tenderness, nausea, vomiting—and associated with these an acceleration of temperature and pulse, and rigidity of the abdominal muscle. Operation was offered and accepted. The following morning at St. Joseph's Hospital the operation was performed under chloroform and ether narcosis. Dr. Billaud gave the anesthetic. The muscle-splitting incision was made. The peritoneal cavity was walled off with gauze and the appendix which was about five inches in length was delivered. The organ was thickened and greatly distended with gas, and the vessels were highly injected. The appendicular artery was tied and at the base of the appendix was placed a buried silk purse-string ligature—the organ was amputated and the base inverted. The purse-string suture was drawn taut and tied, and the ragged peritoneal edges were sewed over with fine catgut. The abdomen was closed with three longitudinal wire sutures, and the wound was covered with silver foil.

Microscopic examination of the hardened cut specimen shows the following: Hemorrhagic distention of Lieberkühn's crypts between the epithelial cells of the mucosa, numerous leukocytes, some diapedesis of erythrocytes, congestion of vessels of mucosa and submucosa and cellular proliferation and desquamation of epithelial cells. Patient made an uneventful recovery and left the hospital on April 23, 1901. He was seen on May 25, and I learned that he had reached his normal weight of 172 pounds.

On June 14 he came to me about 4 o'clock a.m., complaining of severe paroxysmal right epigastric pain, nausea and vomiting with occasional slight chills. His tongue was coated but there was no elevation of pulse, temperature or respiration. He was given a mild laxative, sent home and told to remain quiet, confining himself to a light or liquid diet. He returned July 1, complaining of constant pain in the right upper epigastric region. Tongue was furled and there was nausea. Temperature and pulse were normal. On the morning when seen the pain had been made worse by the jolting of the wagon in which he rode. Examination revealed great tenderness over the gallbladder region.

Urinalysis was negative.

He consulted other physicians; one of them confirmed my diagnosis and wished to drain the gallbladder the following morning. Evidently the patient was not ready to have this done because he returned to me and I placed the organs of digestion at rest by the use of nutritive enemas, giving morphia for the pain. After 10 days of such treatment—during which time there was elevation of temperature and pulse—with no relief, I decided to drain the gallbladder. This was done under chloroform and ether narcosis at St. Joseph's Hospital. The incision was about three and a half inches long, parallel with the right rectus muscle, exposing the gallbladder, which was greatly distended, pearshaped, almost livid, with vessels highly injected. Two traction ligatures were placed at the fundus and the gallbladder was surrounded by gauze. The organ was opened and the escaping bile collected on pads; it contained about five to six ounces of thick, viscid, brownish-black fluid containing flocculi of detritus. The mucous membrane of gallbladder is rough and congested, and considerably thickened yet friable, almost like wet brown paper. Smear culture on agar taken from the bile and gallbladder mucous membrane showed abundant growth at the end of 12 hours. When fixed on coverslips and stained it showed bacilli resembling *B. typhi abdominalis* (Eberth) giving the typical immobilizing effect when added to blood which gives the Widal reaction with typhoid culture. A tube of the inoculated agar was sent to Max Herzog, professor of pathology at the Chicago Polyclinic, and on August 3, 1901, he wrote:

"I finally succeeded in isolating from the last mixed culture you sent me a bacillus which, according to the various tests, proves to be the typhoid bacillus. It appears, therefore, that the empyema of the gallbladder was primarily caused by the typhoid infection, though it now is a mixed infection."

The patient got along nicely for two weeks when the wound was allowed to close, and then the old pain returned, only it was more severe. Thinking perhaps there might be something in the common duct, he was again narcotized, the wound opened and the ducts explored with negative result. The patient gained rapidly in weight and strength and left the hospital some eight weeks after admission. He occasionally complains of left epigastric pain, and in January of this year I saw him. He had intense left-sided epigastric pain, distended epigastrium, tenderness in the left epigastric quadrant, coated tongue, pulse 130, temperature 105°, respirations 36 to 40. Under calomel salines and codein, all the symptoms subsided in three or

four days. Since then he occasionally complains of left epigastric pain.

On July 15, 1902, I saw the patient. He is working as a farm laborer. He feels strong, looks well, weighs 170 pounds and is now free from pain.

This patient had a typhoid infection and later an appendicitis which was followed shortly by a cholecystitis, and later, in all probability, by a pancreatitis.

LIST OF SURGICAL OPERATIONS, SHOWING WHAT CAN BE ACCOMPLISHED BY STRICT ADHERENCE TO THE ESSENTIALS OF MODERN ASEPTIC SURGERY.

BY
F. D. SHEPARD, M.D.,
of Alntab, Turkey.

Physician in charge of the Hospital maintained by the American Board of Foreign Missions of the Congregational Church.

Following is a list of surgical operations performed by myself during the last nine months, which is of particular interest as showing what can be done by adhering strictly to the essentials of modern aseptic surgery and omitting all nonessentials. The work was done without any of the modern hospital facilities and without skilled nursing in convalescence, but everything was disinfected by boiling except the patient and the operator, and they were rendered as nearly sterile as possible by the use of hot water, soap, and alcohol.

OPERATIONS BY DR. F. D. SHEPARD, NOVEMBER 27, 1901, TO AUGUST 18, 1902.

N, number; S, successes; F, failures; D, deaths.

Operations.	N.	S.	F.	D.
Cataract, simple.....	19	19		
" with iridectomy.....	7	6	1	
Entropion, Snellen's.....	51	51		
Trichiasis, Van Millingen's operation.....	67	67		
Trachoma, Knapp's.....	156	155	1	
Ectropium.....	19	18	1	
Iridectomy.....	6	5	1	
Dissection capsule.....	9	9		
Enucleation.....	8	8		
Canthotomy.....	6	6		
Strabismus, advancement.....	3	3		
Simple tenotomy.....	3	3		
Pterygium.....	2	2		
Total eye cases.....	356	352	4	
Lithotomy, suprapubic.....	9	8	1	
" perineal.....	2	2		
Litholapaxy, Bigelow's.....	2	2		
Nephrotomy.....	2	2		
Total calculi.....	15	14	1	
External urethrotomy.....	2	2		
Internal ".....	2	2		
Castration.....	6	6		
Adherent prepuce.....	1	1		
Hydrocele, radical.....	4	4		
" injection.....	7	7		
Fistula in ano.....	14	14		
Fissure ".....	6	6		
Hemorrhoids, clamp and cautery.....	25	25		
Ligature.....	1	1		
Whitehead's resection.....	1	1		
Prolapsus ani.....	3	3		
Total rectal cases.....	50	50		
Hysterectomy.....	3	2	1	
Double pyosalpinx.....	1	1		
Hydatid of liver.....	2	1	1	
Cholecystectomy.....	1	1		
Cholecystotomy.....	1	1		
Ovariectomy.....	3	3		
Ovarian hematoma.....	1	1		
Gastroenterostomy.....	1	1		
Colotomy.....	1		1	
Appendicitis.....	1	1		
Ventral hernia.....	3	3		
Total laparotomies.....	19	16	3	
Restoration of nose.....	8	8		
" " upper lip.....	3	3		
" " lower lip.....	4	4		
Hare lip.....	4	4		
Cicatrix of burns.....	2	2		
Vesicovaginal fistula.....	1	1		
Vesicorectal.....	1	1		
Plastic operation on scalp.....	1	1		
Perineorrhaphy.....	2	2		
Colporrhaphy.....	2	2		
Total plastic.....	26	26		

Operations.	N.	S.	F.	D.
Caries of bone.....	26	26		
Necrosis of bone.....	8	8		
Tuberculous sinuses.....	7	7		
" glands.....	30	30		
Abscesses.....	4	4		
Resection of rib.....	3	3		
" " elbow.....	1	1		
" " shoulder.....	1	1		
" " clavicle.....	1	1		
Amputation of arm.....	1	1		
" " foot.....	2	2		
" " toes.....	2	2		
" " fingers.....	2	2		
Talipes osteotomy.....	11	11		
" tenotomy.....	6	6		
Cancer of breast.....	2	2		
Epithelioma.....	9	8	1	
Sarcoma.....	3	3		
Fibroma.....	2	2		
Lipoma.....	1	1		
Granuloma.....	1	1		
Ranula.....	1	1		
Adenofibroma.....	2	2		
Total of tumors.....	21	20	1	
Tracheotomy.....	1	1		
Laryngotomy.....	1	1		
Aleppo button cautery.....	3	3		
Chiselling mastoid.....	2	2		
Extraction of bullet.....	1	1		
Fracture of clavicle, wiring of end.....	1	1		
Tonsillotomy.....	2	2		
Urethral caruncle.....	1	1		
Brisement force for ankylosis of hip.....	1	1		
" " knee.....	1	1		
Thiersch's grafting.....	9	9		
Alexander's operation.....	1	1		
Aneurysm.....	1	1		
Hernia, Phelps' operation.....	71	70	1	
Hydatid of thyroid.....	1	1		
Undescended testicle.....	1	1		
Neurorrhaphy.....	1	1		
Tendorrhaphy.....	1	1		
Cancerum oris.....	1	1		
Grand total.....	715	705	10	6

Of the abscesses, tonsillotomies, actual cauteries, tapping of abdomen and thorax, etc., only those few cases demanding a general anesthetic have been included in this list.

The fatal hernia case was an alcoholic subject. Had an aseptic healing, but died on thirtieth day from hepatitis.

TREATMENT BY ELECTRICITY.

BY
GEO. BROOKS SWASEY, M.D.,
of Portland, Me.

The cases herein reported may be of sufficient interest to warrant their publication. They are presented not because they represent unique conditions or even rare affections, but with the purpose that they may bear testimony to the assistance which may be obtained from the use of the electric current in cases in which medicinal treatment alone at times fails to bring that relief which physician and patient both desire. A single exception is noted in Case IV.

These cases, taken from my case-book, are not selected to demonstrate the applicability of electricity to a certain class of diseases or conditions, but rather to suggest the usefulness of a remedy in a very large variety of cases.

CASE I.—Mr. H., aged 67, a printer, first consulted me in April, 1898. Some 20 years previous to that date he suffered from an attack of rheumatic fever following exposure, and was sick four weeks. Pain was general over the body, but was most severe in the left hip, extended down the back of the thigh and leg and into the lumbar muscles. Following this attack and during these 20 years he has worked with great difficulty because of pain. This he states has been almost constant, at times very severe, relief only being obtained by lying down, but he cannot lie on the left hip. He limps and uses a cane. His general health has been good. When he came under observation tender points upon pressure existed over the course of the sciatic at its point of exit from the pelvis and down the thigh, but there was no atrophy of the muscles of the thigh or leg.

Treatment consisted in the use of the galvanic current with strength of from 10 to 30 mm. every second day, followed by the positive static spray and sparks over the back, thigh and leg. On May 23 the pain was much less and he could walk with far greater comfort. Treatment was discontinued, and two months later he could walk two miles without discomfort. This patient was seen in the fall of 1901, when he stated that the pain had never returned in the hip or thigh. During treatment

he was given moderate doses of potassium iodid and sodium salicylate, but as he had taken all forms of antirheumatics during his years of infirmity it is fair to presume these remedies had received a thorough trial before.

CASE II.—Mr. S., aged 20, a shoemaker, was first seen November 15, 1898. Nine years ago he had an attack of rheumatism which affected the right hip. He walked with difficulty and was disabled some three weeks. In 1895 he had another attack in both heels, which nearly prevented his walking for a year, the lameness being more troublesome in damp weather. Since September 1, six weeks before coming to me, he had suffered from a recurrent attack which involved the right hip and thigh, rendering locomotion possible only with the use of a crutch and cane. Examination showed the muscles on the back of the thigh to be hard and stiff and somewhat atrophied, the thigh flexed on the pelvis and the leg on the thigh. The top of the left shoulder was tender, the deltoid atrophied, with inability to extend the arm from the body, and the ankle on the left foot was red and swollen. This young man's father was advised to take his son south, but this being impossible electric treatment was undertaken, which consisted of the application of the Leyden-jar current, the feet being placed in one receptacle, the hands in another, every second day, followed by heavy positive spray and sparks on the spine, hip and thigh, milder sparks on the shoulder. At the expiration of four weeks of this treatment he could walk with comparative ease. The right heel was thickened and tender, the left slightly. Fly-blisters were applied to both heels, and after they had healed the Leyden-jar current was again applied to both heels. After ten weeks of treatment, quite regularly carried out, a degree of improvement had been obtained sufficient to warrant cessation of treatment and observation of results. Improvement continued, and three years later he was driving a delivery wagon for one of our grocers. Potassium iodid and sodium salicylate were given, but to my knowledge these remedies had been tried previous to the electric treatment.

CASE III.—Mrs. W., aged 40, housekeeper. In December, 1897, she had an attack of acute rheumatism in the right shoulder-joint. After several weeks of medicinal treatment the acuteness of the attack somewhat subsided. I saw her first on June 30, 1898, when she stated that she had taken medicine since the attack began but was still suffering great pain. Examination showed great tenderness on the anterior aspect of the joint, its movements were much restricted because of pain, with the usual painful and neurotic condition of all the muscles associated in the movements of the joint. The muscles of the corresponding side of the neck were also involved so that any movement of the head was painful. The hand could not be carried to the head, nor the arm across the chest and any movement of the joint was painful. Sleep was much disturbed and her general health was seriously impaired.

Treatment consisted of positive static insulation followed by positive static breeze and very mild sparks every second day. At the expiration of two weeks faradic sedation was added to the above treatment, using the No. 36 wire in the Monell coil. This treatment was continued until August 11, when the patient was discharged greatly improved. Improvement continued and she has remained well since. A preparation of salicylic acid was given with the above treatment, but as she was under the care of one of our most successful physicians from December to June we may believe that these remedies were thoroughly tested.

CASE IV.—Mrs. R., aged 64, a housekeeper, had been well until seven years ago when she had grip and pneumonia. Since that illness she had suffered from a dull pain at the inner edge of the left shoulder-blade. Pain radiates from this point through the back into the arm and right side. Physical examination of the chest was negative. Tender points existed at the lower edge of the scapula. Patient was decidedly neurotic. This woman was under treatment, at different times, from February, 1899, to July 26, 1900, during which time all methods of electric treatment were administered with little or no relief. Temporary relief was several times obtained, but nothing satisfactory.

CASE V.—Mr. H., aged 30, a foreman, consulted me January 1, 1899. He gave the following history: In the summer of 1889 he was gathering seaweed on the beach and carrying it to his father's barn at a distance. While attempting to carry too heavy a load he felt "something give way in his back," and fell on the ground. Being unable to get up and walk home, he crawled on his hands and knees to the house, and was in bed three weeks, suffering greatly. Since this accident there has been almost constant pain, which has been most troublesome at night, and during the day relief can be obtained only by bending the body as far forward as possible and resting the hands on some object. He stated that considerable effort and money had been expended during the 10 years to obtain relief without avail.

Treatment consisted in placing a large negative electrode on the body in front, and two positive electrodes, 4 x 4, over the painful points just above the iliac crests on both sides posteriorly; 20 min. were used for 10 minutes, followed by the positive static spray and sparks; the static roller was also used. Six treatments were given, on alternate days, when the pain was relieved. He has remained well, with the exception of an illness for which he received a few treatments in 1890, until the present date, January, 1903. Medicine was not given.

CASE VI.—Miss S., aged 29, housekeeper, unmarried. The patient commenced to menstruate at 14, and has always had considerable pain attending the function. There has been no irregularity in time or in the quantity of the flow; the pain is most severe after the flow is established and most pronounced in the right ovarian region, also passing down the anterior aspect of the right thigh. She often vomits and is obliged to go to bed. The pain in the right side is never wholly absent, but continues between the periods. She consulted me in May, 1900. Physical examination showed the uterus very tender on pressure, as were also both ovaries, the right more than the left; otherwise the parts appeared normal.

Treatment consisted of placing a negative galvanic electrode, 4 x 4, over the ovarian regions externally and placing a small ball electrode well covered with cotton and moistened with a solution of sodium bicarbonate high up in the vagina against the ovary, as they were treated individually. The current was turned on to a strength of 15 mm., running for 10 minutes, and then reduced slowly and with the greatest care. This was followed by faradic sedation from the No. 36 wire for 20 minutes, which was also very carefully reduced to zero. Treatment was given twice weekly. August 29, 1900, my notes contain the following: "Last two periods have been accompanied with very little pain, the general health has improved, and she has gained nine pounds in weight. The tenderness has very largely disappeared from the ovarian regions, and she feels very much relieved." Medicine was not given. Within the past month, nearly three years after treatment, she tells me she has remained nearly well, having very little pain at her periods.

CASE VII.—Mrs. W., aged 35, housekeeper, consulted me on February 27, 1898. She furnished the following history: During the two preceding years she had suffered from obstruction of the right lacrimal duct, and there had been several very distressing attacks of acute dacryocystitis, with great distention of the sac, and eventually the pus would discharge into the nose. The patient declined treatment until the above date, when, under ether, the canal was thoroughly opened with the probe-pointed bistoury and probes. The usual custom of subsequent probing was carried out with fair results, but the strictures showed a strong tendency to return, as there were two. On August 1 of the same year the following treatment was supplemented. A medium-sized lacrimal probe was selected and covered with a protective coating of shellac, leaving uncovered that section which would come in contact with the strictures when the probe was passed. The probe being attached to the rheophore connected with the negative side of a galvanic battery, a positive pad was securely fastened to the arm. Current strength was from 1 to 2 mm., for two minutes, repeated every fourth day, later once a week, and still later once in two weeks. At the end of three months the canal was patulous, the strictures showing very little tendency to return. Up to the time of this writing, January, 1903, the patient has had no indication of the return of the strictures.

CASE VIII.—Mrs. R., aged 35, housekeeper. This patient was first seen in September, 1900, and her case is so nearly a duplicate of the one last reported that a full report is not necessary. The stricture had existed in the right canal for 15 years, with attacks of acute suppurative inflammation in the sac. The same treatment was carried out as in the above case with the same results. The trouble has not returned.

ASTHMA OR LARYNGISMUS STRIDULUS.

BY

A. L. BENEDICT, M.D.,
of Buffalo.

During 1890 and 1891 J. McK., then 35 years old, and in fair general health, was occasionally under my care for asthma. He then, in some way, passed the physical examination for admittance to the fire department, and has been a fireman ever since. He frequently had attacks of asthma, apparently fairly typical but without very acute paroxysms of dyspnea. With the exception of emphysema, such as commonly attends chronic asthma, he has presented no organic lesion so far as I could discover or learn from the history with the exception to be noted; and his general health has remained fair and even the attacks of asthma have seldom incapacitated him for duty. So far as exciting causes are concerned he has never noticed any but exposure to cold and wet, but attacks have also occurred without obvious exciting cause. His habits have been temperate in all respects, excepting for occasional indulgence in alcohol some years before I first saw him.

On November 17, 1902, thinking that general treatment from the digestive standpoint might afford the benefit which direct attention to the asthma had not in the 13 years during which he had suffered, he again placed his case before me. He gave no personal nor hereditary history of gout and none of eczema or other eruption. His liver was contracted, extending by auscultatory percussion from the lower border of the fifth to that of the eighth rib and there were present the dendritic varicosities along the level of the diaphragm that I have previously described as characteristic of portal obstruction. There was no evidence of gastric disturbance, the bowels were regular

though their usual condition was mildly constipated. The urine was normal qualitatively, but urea, uric acid, salines and total solids by specific gravity were reduced to about 50% of the normal. The lungs, beside the emphysema, presented fugacious sibilant and sonorous breathing. Some improvement occurred under eliminant treatment, but I am not very sanguine of success in a case of so long standing.

The point of especial interest to me was this: On December 12 he came to the office during what he considered and what appeared an ordinary attack of asthma with characteristic wheezing. On auscultation the lungs were perfectly clear and the sibilant sound seemed to be absolutely limited to the larynx. There was no dysphonia and nothing of the dyspnea and nervous condition characteristic of laryngismus stridulus. The wheezing was somewhat relieved, subjectively and objectively, by inhaling a solution of menthol and iodine from hot water. Asthma is commonly considered a bronchiole spasm—or is it not rather a congestion of the bronchioles? I was surprised at the apparent location of the sibilant breathing. I am reasonably familiar with asthma from former general practice and from present experience with occasional patients that seek relief for the same reason that led this one to consult me. I have also seen several cases of laryngismus during the spasm, partly through the courtesy of laryngologists and partly through the occasional causation of laryngismus by the stomach tube. I have never before observed a laryngeal spasm in asthmatic cases, and would be glad of information as to the frequency of its occurrence or as to the possibility of conduction of pulmonary sounds so as falsely to give the impression of a constriction at the larynx.

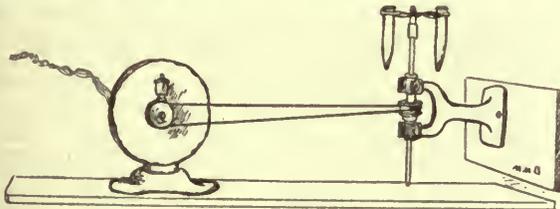
It should be noted that this case does not come under the category of the rare, yet well-known laryngismic "ictus," with an underlying asthmatic or gouty dyscrasia. It may be that I have overlooked accessible references to laryngeal asthma, but on inquiry by telephone of a number of friends in general practice and after reporting the case to the medical section of the Buffalo Academy of Medicine, no information as to the occurrence of this condition has been forthcoming.

AN IMPROVISED CENTRIFUGE.

BY

D. H. GALLOWAY, M.D.,
of Chicago.

The centrifuge has become an indispensable instrument in the laboratory of every physician who aspires to do careful and scientific clinical work. The hand machine is the only one whose price is not so high as to make its purchase seem a burden to the physician who has only occasional use for the instrument. The electrical centrifuge is all that could be desired when the laboratory contains a current, and when expense is a secondary consideration. I have devised a centrifuge which has several advantages, and the construction of which is made



Improved Centrifuge.

very plain by the accompanying drawing. I had a small one-eighth horsepower electric motor which has been used for running a small lathe and sewing machine. This motor had cost me \$25.00, and to buy another motor and centrifuge combined would cost \$45.00 more, so I bought what is known as a jeweler's buffing-head, for which I paid \$1.50; for another dollar the machinist put in a special shaft with one end made to fit into the socket in the yoke which carries the tubes on an ordinary centrifuge; I then bought this part of the centrifuge for \$2.50, fastened it to the shaft and the centrifuge was ready for use. Instead, however, of fastening it in the ordinary way to

a table I bolted it to a board and fastened this board against the wall so that the shaft of the buffing-head was vertical instead of horizontal; then connected the motor to the grooved pulley on the buffing-head by a small leather belt about 1/2 inch in diameter. By a little care in starting the motor with the fingers of one hand while turning on the current with the other the machine is readily started without the sudden jerk which would ordinarily spill the liquids. With this I get a speed of 1,200 revolutions per minute. Having the motor, the centrifuge has cost me \$5.00, or, including the motor, \$30.00.

By using a differential pulley I can increase the speed to any number of revolutions within the power of the motor.

COLCHICUM IN DIABETES MELLITUS.

BY

J. R. CLEMENS, M.D.,
of St. Louis, Mo.

Empiricism may be defined as the exhibition of drugs in diseased conditions in which the indications are urgent but the causes unknown, and the extension of this definition presupposes two axioms: (1) The full knowledge of the drug given; (2) some indication for its use. Shielding myself behind these two axioms I venture to bring to notice the use of colchicum in diabetes mellitus and my grounds for doing so are as follow:

The most commonly accepted cause (theoretic though it be) of diabetes mellitus is an overactivity of the liver in a pathologic direction and comparable to the paradoxical paralytic overactivity of the heat center in hyperpyrexia. To control this, codeia has been exhibited and some success has followed its use. It has been chosen on account of having less tendency to cause constipation than opium or morphia or their other derivatives.

In acute gout the cause is hepatic overactivity with a resulting overproduction of uric acid in the liver.¹ Therefore the two diseases, gout and diabetes, are the same in kind but differ in degree, inasmuch as the overactivity of the liver in one case produces sugar in excess and in the other uric acid in excess. If we could find a drug that would in a measure control this overactivity of the liver there would be an indication for its use in both diabetes and gout. Such a drug, in my opinion, is colchicum. It is incontestable that colchicum in gout does diminish the output of uric acid in the urine—and more, it diminishes the formation of uric acid in the liver; otherwise if in an acute attack of gout treated by colchicum the diminished excretion of uric acid in the urine did not correspond with a simultaneous diminished production of uric acid in the liver the articular condition of the joint in gout would become worse. Hence colchicum does control liver activity, at least so far as the production of uric acid is concerned, and such being the case, why not sugar production? I am aware that the liver is rather the storehouse than the chief source of production of sugar, but for all practical purposes in therapeutics if its morbid overactivity results in flooding the circulatory system with sugar it may be looked upon as the origin of sugar production, and any measure that lessens its activity, *pari passu*, lessens sugar production. Codeia lessens liver activity and hence its use in diabetes. Colchicum lessens liver activity and hence it should be used in diabetes. Another advantage that colchicum has, paradoxical though it seems, is that it is a powerful cholagogue.

In a case of Arthur P. Luff's (subacute gout) the following is of interest:

Daily elimination of uric acid at beginning of attack.....	0.438 gram
Average daily elimination of uric acid for 14 days under colchicum.....	0.234 gram

Gouty glycosuria, if left to run its course untreated, becomes in time identical with true diabetes mellitus. Therefore colchicum checks a *tendency* to overactivity in a sugar direction, and hence the pertinent question: Why not the sugar production itself?

¹Gout: Its Pathology and Treatment. Arthur P. Luff. Cassell & Co., Ltd., 1899.

A CASE OF UMBILICAL HERNIA.

BY
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of Grand Rapids, Mich.

Mrs. F. S., aged 24, has always been in good health, excepting that seven years ago she had an attack of typhoid fever lasting eight weeks. At 14 years she weighed 240 pounds. She has a sister of 12 who weighs 178 pounds. One aunt died of tuberculosis; another aunt died after an operation for umbilical hernia. Her father has a double inguinal hernia. The winter following the attack of typhoid fever she noticed a protrusion at the umbilicus. The swelling has grown steadily in size up to its present dimensions. Five years ago she was married and has had five children since that time. Aside from some discomfort and considerable inconvenience she suffers but little. She has made attempts to keep the hernia reduced by various bandages and trusses, but without success. Her digestion is good; she is sometimes troubled with constipation.

Examination shows a woman weighing 203 pounds, 5 feet, 5 inches in height. An examination of the thorax reveals nothing abnormal. The pelvis was not examined; urine was normal. The accompanying photograph conveys a very good idea of the hernia. By placing the patient on her back the hernia was easily reduced.

Operation.—An elliptic incision about 8 inches in length was made near, but well clear of the sac down to the fascia. The sac and included tissue were partially freed from the fascia; the opening measured about 3 inches transversely and slightly more than that in length. The sac was then opened,



one small adhesion between the omentum and sac broken up, and the omentum and protruding bowels reduced and held in place with a sponge. With a finger inside the sac it was easy to complete the dissection of the sac from the surrounding fascia. After this the sac was cut away, the sheath of the rectus on either side split so as to expose the muscle well above and below the hernial opening. The peritoneum and underlying sheath of the muscles were first brought together, closing the abdomen. The two recti muscles were then sutured in a separate layer. Next the fascia was closely sutured over the muscles, and lastly the skin and superficial fat were united with silk-wormgut. Interrupted catgut was used throughout, except for the outer layer. There was slight suppuration extending apparently only to the fascia. This healed by granulation. It involved only a small portion of the wound. Recovery has been otherwise uneventful. The patient has been kept in bed five weeks in order to bring no strain upon the newly united tissues, and will be sent home with a firm abdominal bandage. It is, of course, impossible to predict the final outcome.

It is interesting to note in this case the marked inherited predisposition to hernia; the abnormal obesity, a condition which is present in the vast majority of those suffering from umbilical hernia; the appearance of the hernia before child bearing, and the rapid growth of the same to an unusual size, due probably to a quick succession of pregnancies.

The indications for operation in cases of adult umbilical hernia are: Relief from a condition which with the best care must be a source of great and lifelong annoyance; probable increase in size and danger from strangulation or sloughing of the sac, and the intraabdominal complications, such as dense

adhesions and even occlusion of the bowel; these make a later operation often a formidable affair.

The prognosis in these cases is, unfortunately, hardly so good as with inguinal hernia. The operations which have been devised for the relief of acquired umbilical hernia are several. Those which seem most rational advocate the bringing of the tissues together in layers, making the line of contact in fascia and muscle as broad and firm as possible. Overlapping the muscles and uniting them with a mattress suture has been done with success, and I believe should be carried out whenever the parts are lax enough to permit it. The same thing should be done with the fascia. Unfortunately this cannot always be carried out without putting too much strain upon the sutures. When this cannot be done a single union with interrupted catgut sutures is perhaps as effective as any other method.

DEATHRATE FROM SMALLPOX IN VARIOUS CITIES AND STATES.

BY
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To the Editor of American Medicine.—Is it possible for any one of your readers to tell me why there should be such great differences in the deathrate of smallpox in various cities and States? According to the "Public Health Reports," the last one for instance (November 14, 1902):

Illinois	reports 137 cases with	2 deaths
Indiana	" 338 "	" 20 "
Massachusetts.....	" 364 "	" 68 "
Minnesota.....	" 1,119 "	" 6 "
New Hampshire.....	" 154 "	" 1 "
New Jersey.....	" 267 "	" 58 "
New York.....	" 213 "	" 54 "
North Carolina.....	" 537 "	" 5 "
Ohio	" 2,312 "	" 232 "
Pennsylvania	" 1,366 "	" 129 "
Tennessee	" 2,228 "	" 67 "
Washington	" 1,241 "	" 1 "
Wisconsin	" 797 "	" 6 "

Individual cities:

Lowell, Mass.....	" 22 "	" 2 "
Boston, Mass.....	" 189 "	" 34 "
Cambridge, Mass	" 55 "	" 23 "
Newark, N. J.....	" 98 "	" 29 "
Jersey City.....	" 110 "	" 19 "
New York City.....	" 182 "	" 53 "
Cleveland, Ohio.....	" 1,034 "	" 182 "
Cincinnati, Ohio.....	" 162 "	" 1 "
Pittsburg, Pa.....	" 397 "	" 65 "
Philadelphia, Pa.....	" 102 "	" 14 "
Cambria county, Pa.....	" 194 "	" 18 "

I wrote to the Bureau of Public Health in regard to this matter and the reply was that "the figures are exactly as received from the State and municipal authorities. The causes for the differences are not known." Why, for instance, Cleveland should have a deathrate of 18% and Cincinnati .6%, or why Pittsburg should have 16% and Newark nearly 30%, Jersey City 17% and New York City nearly 30%, is not easy to understand unless the diagnosis of smallpox is different in one place than in the other, or the statistics are not correct.

That 1,241 cases should be reported from Washington with but one death is most likely due to incomplete returns. The Bureau of Public Health should take more pains to obtain correct and complete statistics. If possible have a representative in each State instead of depending upon local authorities. To my own knowledge at least seven cases of smallpox in our own county were not reported by our State authorities until I had called the attention of the Bureau at Washington to them. In the last report I also notice that whereas there had occurred in Porto Rico from February 1 to June 15 nearly 1,000 cases of smallpox no report has been given since June 15. Are we to infer that no cases have occurred since then or that none has been reported?

If the mortality rate does actually differ as the reports indicate, upon what does this difference depend? Has vaccination anything to do with it or are different methods of treatment responsible? It seems to me the subject is one for careful investigation by some such authority as the United States Bureau of Public Health.

ORIGINAL ARTICLES

EXCISION OF THE SUPERIOR MAXILLARY UNDER MEDULLARY NARCOSIS.

BY

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Mr. G. H., aged 39, entered the City and County Hospital December 3, 1902. His family history is good and personal history free from any disease. He is an excessive smoker of a pipe, and had used alcoholic stimulants freely until five years ago, since which time he has abstained.

Two years ago, while smoking, he received a blow which drove the pipe-stem into his right jaw through the mouth, causing a wound which never healed. Two months later a lump developed, which soon broke down leaving an ulcer; the patient continued to grow worse until September, 1902, when part of the growth was removed (Fig. 1, lower incision). On examination, the entire right jaw was found to be involved with a large mass, which proved to be a carcinoma.

The patient was prepared by removing decayed teeth and the usual mechanical cleansing. Sterile cocain hydrochlorate,

.032 gram ($\frac{1}{2}$ grain), was placed in the syringe, and the piston, which was attached to a needle that had been placed into the subarachnoid space between the third and fourth lumbar vertebrae, in the center line, was then closed and enough of the cerebrospinal fluid was allowed to pass, as the piston was withdrawn, to fill the syringe two-thirds full. After the cocain was dissolved, the solution was introduced as rapidly as the piston could be pressed. Analgesia was complete in 20 minutes. The pulse during operation varied from 90 to 100; respiration remained normal. The patient was not nauseated, and remained conscious of everything, and expressed himself as free from pain.

The upper lip was divided near the middle line, extending along the side of the nose to about



Fig. 1.

one-half inch below the inner canthus; then along the lower border of the orbital region, beyond the outer canthus; the soft structures were raised and reflected outward, exposing the superior maxillary to its attachment to the zygoma; hemorrhage was controlled by means of pressure and hemostatic forceps; the hard palate and the nasal process was divided by a saw; the back part was separated with forceps and chisel, and the periosteum was separated from the orbital portion. The mass was seized with Lyons' forceps and pried with a chisel, which separated the mass. The hemorrhage was controlled by pressure and the Paquelin cautery; the soft palate was removed and the cavity cauterized. The patient did not swallow any of the blood or allow any to pass into the lungs during inspiration, as he could expectorate or retain it until it was wiped away. Analgesia was so complete when I was removing the right side that when I mentioned that there might be danger of recurrence in the other side, he requested me to remove the other jaw if necessary. Again, just as I was stitching the soft parts I requested Major D. M. Apple to give a talk to the students, and the patient was among the first and last to greet him with a clap of the hands, which would show that he was free from pain. The stitches were removed on the fifth day, with primary union, and he was discharged on the tenth day, with instructions to return if any further disease developed. (Fig. 2 represents the same operation reported in the *Journal of the American Medical Association*, November 8, 1902.)

The method offers many advantages, especially in operations about the buccal cavities:

1. The anesthetic is not in the way of the operator.
2. The danger of blood and secretions entering the

lungs and producing suffocation, or later pulmonary complications is absent.

3. It can be used in acute disease of the heart, lungs, or in kidney complications, when the anesthetic is counterindicated.

4. The shock of the operation is diminished, and there is not the severe disturbances which often follow an anesthetic.

I have used this form of analgesia in 929 cases, 76 for operations above the diaphragm, and many were similar



Fig. 2.

operations to the foregoing, excision of lower jaw, tongue, etc.

The operation and its complications are so simplified that I would fear very much to do a preliminary tracheotomy for administering a general anesthetic in any of the operations about the buccal cavity.

Surgeons are not now so anxious to use this method as they were when it was new. Possibly they have encountered some slight difficulties which they have not tried to overcome by perfecting their technic. Then again we have been educated since the days of anesthetics that it is necessary to have the patient unconscious during the performance of a capital operation. In some cases the surgeon must practise the laws of suggestion, or his patient will mistake tactile sensation for pain.

I have found the analgesia about the mouth as complete as in the lower extremities, and have failed to find any more constitutional disturbances than when the analgesia was used for operations on the lower extremities.

I am satisfied that its greatest field of usefulness is for operations in such locations where there is danger of blood and secretions entering the lungs.

Medical Aid in Factories.—A committee representing the German American Alliance will present a bill to the present Legislature of Pennsylvania requiring employers to maintain in their factories, mills, and other places in which help is employed, suitable medical and surgical materials, the object being to supply the necessary assistance and relief to accident cases or any demanding immediate assistance until the patient can be transferred to a hospital.

ON THE TRANSPORTATION OF CELLULAR EMBOLI THROUGH THE THORACIC DUCT INTO THE LUNGS.

BY

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The occurrence of large phagocytic mononuclear cells in the lymph sinuses of the mesenteric glands and elsewhere in typhoid fever and, indeed, in various other pathologic conditions is quite well recognized, and Mallory has pointed out that these cells may be recognized in the circulating blood as obtained from the ear in patients suffering from typhoid fever. He ascribes to them a considerable role in the production of the focal areas of necrosis in the liver where they act as plugs in the capillaries producing a localized anemia and states that he has also occasionally seen such cells in the vessels of the lung and in the thoracic duct. I have not found any description, however, of extensive affections of the lungs due to this cause nor any mechanical explanation of the process, such as seems to be suggested by the following case:

A young man previously in good health contracted typhoid fever, and after a sickness marked by no especial complications, but characterized by the intensity of the toxic symptoms, died in coma on the nineteenth day of the disease. At the autopsy the usual intestinal lesions were found—deep ulcers, some of which were still covered with sloughs while others were clean. There was no perforation, no peritonitis. There was moderate acute splenic tumor, and the mesenteric lymph glands were much enlarged and softened. The heart muscle was very soft and flabby, but showed no fatty degeneration. The lungs were extremely hyperemic throughout, and there was a patchy fibrinous exudate over the surface which could be easily stripped off, leaving a dull pleural surface with minute ecchymoses. Firm areas could be felt through the pleura in the underlying lung substance. On section these were found to correspond with areas of consolidation rather pyramidal in form which stretched down into the tissue. There were several of these, varying a great deal in form and size, and generally very irregular in outline. The lung substance in general was very deep red in color throughout, and except for the areas described was everywhere crepitant. The consolidated areas were dark greyish-red and surrounded by a zone of somewhat deeper red. Search with the scissors for plugs in the vessels failed to reveal any.

Microscopical sections of the lung showed that these areas of consolidation have the characteristics of an infarction. The alveoli are filled with blood richly mixed with leukocytes. The alveolar walls are not entirely necrotic, but the epithelial cells are swollen and generally desquamated.

Examination of the vessels leading to these infarcted areas shows them to contain abundant nucleated cells—indeed, one section shows a large vessel almost entirely occluded by a great mass of cells which at first sight looks almost like a fragment of lymph gland. Closer examination, however, shows that this mass is not tissue, but merely a conglomeration of cells with some admixture of blood and fibrin filaments. The cells are smaller than the desquamated alveolar epithelium and their nucleus stains more deeply. It is a vesicular nucleus, usually round, but sometimes indented. The protoplasm is abundant and stains deep pink. Many of them are phagocytic and contain smaller cells or remnants of cells. There are also many smaller cells with clear protoplasm which have in general the character of lymphoid cells.

In the smaller vessels throughout the lung these cells are found in great numbers, frequently completely occluding the lumen. Often in the alveolar walls the capillaries are plugged and widely distended with little clumps of such cells. Occlusion of such small vessels seems, however, to be compensated for, and in sections of the lung where such plugs are very abundant no necrosis of the tissue is found.

We have to deal evidently with multiple hemorrhagic infarctions of the lung produced by the plugging of the branches of the pulmonary artery with masses of cells of the type of the lymphoid cells and larger mononuclear phagocytic cells. In other places we have this embolism without any resulting infarction. What, then, is the origin of these cells?

The cells must gain access to the veins and thus reach the heart to be propelled into the lungs, and there are at least three possibilities. They may be poured directly into some systemic vein, or they may pass by way of the

portal vein through the liver, or, lastly, they may enter the thoracic duct and be thus carried into the subclavian vein. Of these the last seems to offer by far the most plausible explanation, especially since examination of the liver fails to reveal any especial abundance of these cells in its vessels.

It is, however, quite easy to understand how the phagocytic cells which are so abundant in the lymph sinuses of the mesenteric glands could be transported through the lymphatic trunks into the thoracic duct—indeed, it is hard to imagine that such a thing could be avoided. After that, the propulsion of clumps of these cells into the subclavian vein, thence to the right heart and on into the vessels of the lung, is an easy matter.

Fortunately the thoracic duct had been preserved intact as a part of a museum specimen in this case, and on opening it coagulated masses were found which contained abundant large mononuclear cells. These could be seen both in smears from this mass and in sections through the hardened thoracic duct.

In a second case of typhoid fever the contents of the thoracic duct were carefully examined fresh and in smears stained as one would stain a blood film. In both these preparations the large mononuclear cells were found in numbers, and both in the fresh and stained specimens a number of them could be seen to be phagocytic, containing lymphoid cells within their protoplasm.

Similarly in a case of amebic dysentery with liver abscess in which the lymph sinuses of the mesenteric glands were packed with large phagocytic cells, such cells were found in the contents of the thoracic duct. It seems therefore hardly to be doubted that the embolism of the pulmonary arteries was in this case due to the transportation of masses of cells derived from the lymph sinuses of the lymph glands through the thoracic duct into the heart and thus into the pulmonary circulation. In the contents of the normal thoracic duct the small lymphoid cell is predominant, while eosinophile and neutrophile leukocytes also occur. The study of the lymph is apparently very little pursued, however, although it seems in the light of this observation to offer some very important materials indeed.

THE ALBUMOSES: THEIR CLINICAL SIGNIFICANCE VIEWED FROM A MODERN STANDPOINT; THEIR DETECTION AND DISTINCTION FROM THE OTHER PROTEIDS FOUND IN THE URINE AS A MEANS OF LOWERING THE DEATHRATE IN OBSCURE SUPPURATIVE AND OTHER DISEASES.¹

BY

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The difficulties attending the accurate diagnosis of the presence of pus, especially in the greater cavities of the body, make it imperative that we should summon to our assistance every aid possible. Unfortunately, many cases of concealed suppuration remain undiagnosed until the autopsy table is reached by the patient, whose life might have been saved if the presence of pus had been demonstrated earlier, as, for example, in appendicitis. With this fact set plainly before me, I commenced the following researches over five years ago, with the hope of finding evidence which would more easily lead us to pronounce with reasonable certainty whether suppuration was or was not taking place in the cranial, abdominal or thoracic cavities or in other locations (joints, bones, etc.) when it was impossible to ascertain its presence with certainty or the symptoms were misleading, as they are unfortunately in a comparatively large

¹ From the laboratory of Dr. Thos. J. Yarrow, Jr.

number of cases of intraabdominal suppurative conditions. In fact, I have heard a number of prominent surgeons remark that the diagnosis of any obscure abdominal affection was usually made either on the operating or the autopsy table. This should not be when we take into consideration the many aids that we have derived from clinical medicine and clinical pathology during the past few years, and which have contributed markedly toward lowering the mortality in various diseases. Hematology, bacteriology and urinary analysis, etc., have all contributed their share of valuable information in many instances already familiar to the reader. Concealed or masked suppuration is one of the most frequent, deadly and treacherous conditions that we have to deal with. And just when to say that pus is, or is not present, is at times most difficult and perplexing to determine, with which I think the medical profession will agree. My purpose in this essay is to show that we do possess a valuable aid in diagnosing concealed collections of pus which has not been used or taken advantage of to any extent. The confusion in the former classification and reactions of the proteids had much to do with this, but now that this obstacle no longer exists a valuable aid lies at our command, particularly in medicine and surgery.

It is well known that there are other proteids found in the urine besides serum albumin and serum globulin, but until comparatively recently the detection and distinction of protoalbumose, deutoalbumose and heteroalbumose from serum albumin, serum globulin, and "true" peptone had not been demonstrated. In fact, the condition known as "peptonuria," strictly speaking (as Kuhne points out), has never been proved to exist, digestive peptone never having been found in the urine. The similarity between peptone, globulin, albumin and the albumoses in some of their reactions is marked, especially in the case of the albumoses and peptone, which both give a rose-red color with the biuret reaction, this fact alone leading to confusion among many observers, and thus we find cases of peptonuria reported in which the presence of the latter had been based upon the biuret test alone. Then, again, albumose is confused with albumin, as many of their reactions are identical. This has led some observers into believing that they had discovered a new proteid in the urine (aceto-soluble albumin), when in reality they were dealing with the albumoses, probably deutoalbumose, the precipitate being soluble in an excess of acetic acid. There is scarcely a test used in the analysis of urine that is not open to fallacy unless very carefully performed. As an example: the heat and nitric acid test serves for the detection of serum albumin, serum globulin, and the albumoses, and although Purdy, of Chicago, states the contrary, potassium ferrocyanid and acetic acid precipitate in addition to serum albumin; also serum globulin, heteroalbumose and alkali albumin. The biuret test serves for the detection of serum albumin, serum globulin, "true" peptone, and the albumoses. Delicate reagents such as those of Spiegler, Millard, and Tanret are worse than useless in inexperienced hands, as they in addition to the proteids precipitate alkaloids, ptomains, etc. Trichloroacetic acid precipitates, in addition to the other proteids, nuclealbumin (formerly termed mucin). It will thus be seen that we possess no specific test for each of the proteids, and to illustrate the reactions for serum albumin and the albumoses, a solution of the albumoses (proto and hetero) was taken containing 1 gram in 200 cc. of distilled water, and a solution of serum albumin of the same strength.

Serum Albumin.	Proto and Hetero Albumoses.
HEAT ALONE.	
Solution becomes opalescent, and a precipitate forms; not intensified on cooling.	No opalescence produced until a few drops of nitric acid are added; becomes opalescent; greatly intensified on cooling.
ETHYLIC ALCOHOL.	
A dense white precipitate forms immediately.	A haziness appears, not so marked as with albumin. No precipitate formed.
MILLON'S REAGENT.	
A white curdy flocculent precipitate, changing to brick-red on boiling.	Behaves likewise.
FEHLING'S SOLUTION.	
Contact with (full strength) gives a violent band at point of junction.	Contact with, gives a rose-red or pink band at point of junction.
ACETIC ACID.	
Acetic acid added to excess produces a haziness, becoming more distinct on boiling.	Produces a slight cloud, disappearing on shaking.
POTASSIUM FERROCYANID AND ACETIC ACID.	
Gives a yellowish-white flocculent precipitate; on heating, the precipitate becomes more yellow, and finally bright green. Does not dissolve on addition of ammonium hydrate.	Gives a dense white flocculent cloud not clearing on boiling, but changing to a bright green color. It is instantly dissolved on the addition of ammonium hydrate.
PICRIC ACID.	
Gives a yellowish precipitate, becoming more cloudy, and a brighter yellow on boiling.	Gives a dense yellowish precipitate.
SPIEGLER'S REAGENT.	
A dense white flocculent precipitate.	A dense white, partly granular, but largely flocculent precipitate.
MILLARD'S REAGENT.	
Dense white flocculent precipitate.	Behaves likewise.
TANRET'S REAGENT.	
Acts as foregoing.	Acts as foregoing.
SALICYL SULFONIC ACID.	
Gives a dense white flocculent precipitate, becoming more intense on heating; is not affected by the addition of ammonium hydrate.	As foregoing, but clearing up entirely on heating. Also clears up in the cold on the addition of ammonium hydrate.
PHOSPHO-TUNGSTIC ACID.	
Contact with a saturated solution gives a dense white flocculent ring at junction.	Behaves likewise.
PHOSPHO-MOLYBDIC ACID.	
Behaves as foregoing.	Behaves as foregoing.
CONCENTRATED SULFURIC ACID.	
Contact with gives a white cloud, disappearing on shaking. The acid is turned pink.	Behaves likewise.
FIVE PERCENT SOLUTION OF AURIC CHLORID.	
Produces a pale yellow flocculent precipitate.	Behaves likewise.
FIVE PERCENT SOLUTION OF PLATINIC CHLORID.	
Behaves as preceding.	Behaves as preceding.

I beg to call attention to the effect of the addition of ammonium hydrate in excess (as noted in the tests given), and suggest it as a means of distinguishing between serum albumin and the mixed albumoses when used with the preceding reagents. When 1 cc. of the albumose solution was added to 10 cc. of a very dilute solution of methyl violet 6B, the latter was changed to a faint reddish-pink color. The change was not well marked. With Koch's "fuchsin," highly diluted, the color changed to a salmon pink. With methylene-blue, highly diluted, the color was changed to a bright peagreen. These changes may or may not be due to impurities in the albumoses, but they are interesting. With eosin (ordinary and the "blaulich") no change in the color was apparent, nor was the fluorescence affected. Probably one of the best reagents that we possess for the detection of serum albumin, serum globulin, and nuclealbumin, and for distinguishing them from the albumoses, is salicyl sulfonic acid as advocated by Roche, McWilliam, and myself. It is prepared by treating pure salicylic acid with chemically pure concentrated sulfuric acid, and allowing the resulting compound to crystallize by evaporation. It is best used in the form of a saturated solution, or the crystals may be purchased

Serum Albumin. Proto and Hetero Albumoses

HELLER'S TEST.

A deep flocculent band forms at point of junction, disappears on heating and shaking, does not reappear on cooling (former caused by great excess of acid present).	Behaves likewise.
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and dissolved in distilled water. Primary albumoses are precipitated by a saturated solution; the precipitate clearing up on heating and reappearing on cooling. Deuteroalbumose is precipitated by the reagent when the suspected liquid is mixed with two or three times its bulk of a saturated solution of ammonium sulfate. True peptone or the peptone of Kuhne (not Brucke) is readily precipitated by salicyl sulfonic acid, in saturated ammonium sulfate solutions, and the precipitate is dissolved by the addition of water, glycerin, or the reagent in excess. With serum albumin it gives a white precipitate, varying from a mere opalescence to a dense coagulum, depending on the amount of albumin present. When albumoses alone are present it acts as above in the cold, but on heating the precipitate clears up entirely. The best method of performing the test, according to my own experience, is as follows: Take two test-tubes, half fill with carefully filtered urine, and if neutral or alkaline, acidify with a few drops of acetic acid. Add a small quantity of salicyl sulfonic acid ($\frac{1}{2}$ to 1 cc. to a test-tube half filled with urine) and shake well; the opalescence or cloudiness, if any appear, is best seen against a black background, such as a coat sleeve. One test-tube is heated and compared with the other to see whether the opalescence clears up. This is easily detected when two test-tubes are employed, but difficult and at times impossible when only one is used. A third test-tube filled with untreated filtered urine may be used for comparison with the other two, if any doubt arises. It is exceedingly difficult to render certain specimens of urine clear, especially in cases of bacteriuria. The addition of a few drops of acetic acid and repeated filtering through several thicknesses of heavy Swedish filter paper may be attempted, or if this fails filtering by means of a vacuum pump (Chapman aspirator attached to faucet) through a heavy compact layer of absorbent cotton placed in a funnel; or, finally, if this is unsuccessful, through porcelain. Fortunately this measure does not often have to be resorted to. I may add here that I have observed that B-naphthalin sulfonic acid acts as well or even better than salicyl sulfonic acid, and is more sensitive than the latter. It is used in precisely the same manner, as is also phenolsulfonic acid, which may also be employed with advantage. I have used B-naphthalin sulfonic acid with markedly uniform results, especially for the detection of serum albumin and serum globulin, which are always present together in nephritis. Globulin rarely occurs alone, a possible exception being in amyloid disease.

The urine when testing for the albumoses should always be freed from serum albumin, serum globulin, and nuclealbumin (before performing the foregoing tests), though a faint trace of albumin does not interfere, as the characteristic reaction of the albumoses is the clearing up of the precipitate on heating, while serum albumin is thus rendered more turbid or cloudy. I have found these sulfonic acids also very useful in differentiating the various proteids occurring in the stomach contents in transudations, exudations, the contents of old abscesses, cysts, etc. To repeat emphatically, serum albumin, serum globulin, and nuclealbumin should always be separated from the urine before proceeding to examine for the albumoses when any doubt exists in preliminary testing. In all cases when it is important to ascertain the presence of albumoses in a suspected fluid, an accurate method of separation such as that of Hofmeister should be performed, or those of Salkowski and Devoto may be used. The method of Hofmeister is briefly as follows: Test the urine (or other fluid) first for albumin by the heat and nitric (or acetic) acid test, and if no precipitate forms, the presence of albumoses may be shown by the biuret reaction, but only when these bodies are present in abundance. A further test may be made by adding, first, acetic acid, and then a mixture of acetic and phosphotungstic acids; if opalescence occurs at once or after the lapse of a short interval,

albumoses may be concluded to be present. Taking it for granted that these methods have failed to reveal the presence of mucin (nuclealbumin), albumin or globulin, the urine is treated with neutral lead acetate and filtered, 500 to 600 cc. of the clear filtrate is acidulated with hydrochloric acid and then phosphotungstic acid is added until a precipitate ceases to form. The mixture is filtered at once, and the precipitate consists of albumoses combined with phosphotungstic acid, ptomains, and other substances. It is then washed on a filter with 5 parts of concentrated sulfuric acid in 100 of water until the fluid which passes through is colorless. The salts are thus got rid of, and the precipitate, while still wet, is washed from the filter with as little water as possible and placed in a watch-glass. Sodium carbonate is added to the point of alkalinity, and the mixture heated on a water-bath at a temperature of 212° F. for 10 or 15 minutes, and the biuret test applied. Albumoses are shown to be present by the bluish-red to violet color which forms; a dirty red or dull violet forms when only a trace is present. To procure the best results, according to Hofmeister, the whole preparation should be placed in a test-tube, when the precipitate will fall to the bottom and the supernatant liquid will show the characteristic color if any of the albumoses are present; otherwise the fluid remains of a dirty-greenish hue. If serum albumin should be detected by the preliminary tests it must be got rid of by combination with a metallic oxid. The best method is as follows: The urine is treated with a solution of acetate of sodium followed by perchlorid of iron. It is then neutralized exactly with potassium hydrate, boiled, filtered, and allowed to cool. The filtrate is then tested for iron and albumin and if free from both of these substances the process described is proceeded with. I cannot insist too strongly upon the care which should be exercised in freeing the suspected fluid from albumin. This method has the advantage of removing the color from highly tinted urines. Hofmeister and Maixner use a colorometric method for the estimation of "peptone" (Brucke). Many other variations of this method have been proposed, but they all fail of their purpose and are not trustworthy. Devoto's method is as follows: Ammonium sulfate (80 grams to 100 cc.) is added to 200 or 300 cc. of urine and the mixture placed in a water-bath for half an hour, until the greater portion of the salt is dissolved. It is then placed in a steam sterilizer for half an hour at 212° F. Serum albumin, serum globulin, hemoglobin, deuteroalbumose, peptone, and nuclealbumin are precipitated, but only serum albumin, serum globulin, and nuclealbumin thoroughly coagulated. The fluid having been heated to 212° F. is at once filtered and should be free from albumin; should the fluid be turbid or react for serum albumin, etc., the process has been faulty and must be repeated. The precipitate on the filter is washed, first with warm water, then with cold. These washings are collected and tested for albumin; should this be absent the biuret test is performed and the usual rose-pink reaction indicates the presence of the albumoses. The method which I have used, on account of its being practical and speedily performed, is that of Salkowski. To 200 cc. of carefully filtered urine is added 20 cc. of hydrochloric acid, and then phosphotungstic acid until a precipitate ceases to fall. As soon as the precipitate has settled the overlying fluid is drawn off and the precipitate placed on a filter and thoroughly washed with cold water; it is finally washed off the filter into a small watch-glass and after settling the supernatant fluid is cautiously drawn off with a pipet and the residue dissolved in $\frac{1}{2}$ cc. of caustic soda solution (20%) and heated until the greenish or blue color disappears. It is then tested with the biuret reaction. I have at times not only washed the precipitate with water (in the first part of the process) but have also used alcohol and ether successively. The ether and alcohol washings frequently showed the presence of hematoporphyrin. This was

especially so in the puerperal cases, a report of which will follow. By means of the spectroscope the hemato-porphyrin was easily recognized as acid hemato-porphyrin in alcoholic and ethereal solutions. The above method is not the original one of Salkowski but a modification of my own, which lessens the time of its performance.

The following proteids have been found in the urine: Serum albumin, serum globulin, protoalbumose, heteroalbumose, deuterioalbumose, acid albumin (syntonin), alkali albumin, and sometimes classed as such, nucleoalbumin or mucin, etc. The tests will be found in the

in the urine is an evidence of disturbance of digestion, and not of any disease of the kidney, while others wrongly associate it with albumin in nephritis. It was not traced to its true source, but was classified as a result of renal changes. In the second place it was confused with true digestive peptone, due to lack of thorough and complete investigation. In the third place it does occur in the urine in certain diseases of the kidney, notably suppurative nephritis due to injury or other cause, pyonephrosis, traumatic nephritis, and in certain cases of tuberculosis of the kidney when there exists much destruction or breaking down of tissues.

TABLE OF TESTS FOR PROTEIDS FOUND IN THE URINE (Modified from Allen).

	Serum albumin.	Serum globulin.	Heteroalbumose.	Deuterioalbumose.	Peptone(?).	Acid albumin	Alkali albumin.	Mucin.
Dilution with water..	No change.	Slight opacity.	No change.	No change.	No change.	No change.	No change.	No change.
Saturation with MgSO ₄ .	No change.	Precipitate.	Precipitate.	No change.	No change.	Precipitate.	Precipitate.	.....
Saturation with (NH ₄) ₂ SO ₄ .	Precipitate.	Precipitate.	Precipitate.	Precipitated but not wholly.	No change.	Precipitate.	Precipitate.	.....
Boiling and acidulation with HCl, H ₂ O ₂ .	Precipitate.	Precipitate.	No change.	No change.	No change.	No change.	Precipitate.	No change.
Cold concentrated HNO ₃ .	Precipitate.	Precipitate.	Precipitate soluble in excess, or on heating, reappears on cooling.	Precipitated only on adding salt. Dissolved on heating, reappearing on cooling.	No change.	Precipitate.	Precipitate.	Precipitate.
Metaphosphoric acid.	Precipitate.	Precipitate.	.....	.....	.....	No change.	Precipitate.	.....
Peric acid.....	Precipitate.	Precipitate.	Precipitate soluble on heating.	Precipitate soluble on heating.	Precipitate soluble on heating.	Precipitate.	Precipitate.	When acetic acid is added.
Potassium ferrocyanid.	Precipitate.	Precipitate.	Precipitate.	No change.	No change.	Precipitate.	Precipitate.	.....
Potassium mercuric iodid.	Precipitate.	Precipitate.	Precipitate.	Precipitate soluble on heating.	Precipitate soluble on heating.	Precipitate.	Precipitate.	Precipitate.
Fehling's solution (biuret test).	Brown-red or violet color.	Brown-red or violet color.	Rose-pink color.	Rose-pink color.	Rose-pink color.	Brown-red or violet color.	Brown-red or violet color.	Violet.
CuSO ₄	Precipitate.	Precipitate.	Precipitate.	No change.	No change.	Precipitate.	Precipitate.	.....

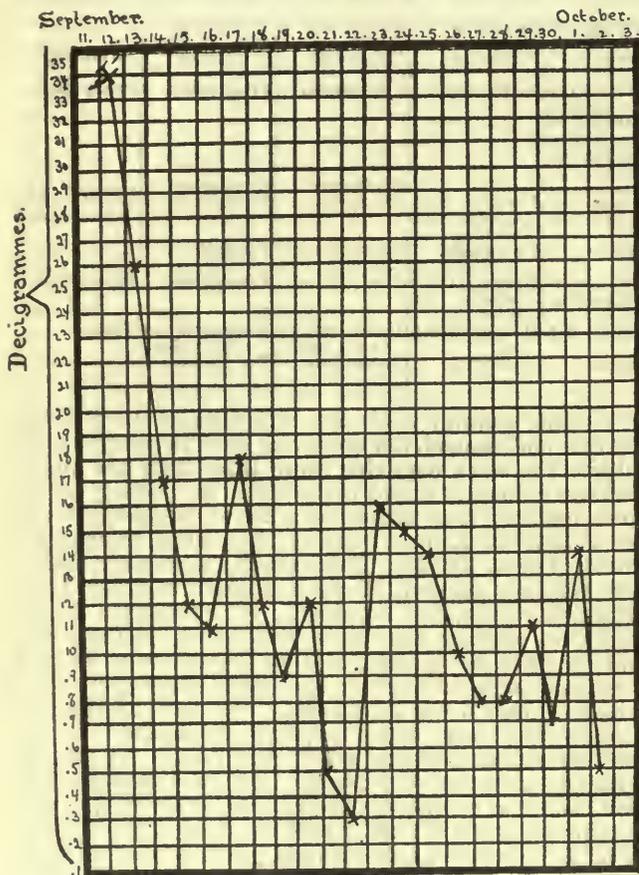
accompanying table, taken from Allen's Organic Analysis. True peptone should have been omitted from this table, as it has never been proved to exist in the secretion of the kidney. It would seem impossible that peptone could be produced, except by the gastric or intestinal ferments acting on albumin or globulin. All evidence hitherto gathered is in favor of this view. On the other hand, it is easy to comprehend incomplete hydrolytic action, as in the transformation of proteid matter into primary albumoses as, for example, various bacteria produce on albuminous culture media. The so-called "peptones" are with the greatest probability albumoses. Peptone was formerly thought to be a constituent of pus, but this error has been rectified, and what was mistaken for peptone is in reality albumose or a mixture of proto-, hetero-, and deuterio-albumoses. Although Ito has recently claimed to have discovered "true peptone" in urine, if one reviews his tests it will be observed that he probably confused peptone with deuterioalbumose, as this body approaches more closely to peptone in its characteristics than do the primary albumoses. Deuterioalbumose also is only partly precipitated as a rule in neutral solutions, and is only completely precipitated on the addition of an acid. Peptone is the only proteid which is not precipitated by saturation with ammonium sulfate. Hemoglobin might have been included in the table given.

In going through the literature of this subject one is surprised at the lack of attention hitherto paid to what is a most valuable aid in diagnosing concealed collections of pus, and we are all familiar with the extreme difficulty often experienced in locating such areas in the thoracic and abdominal cavities, and also in joints. There is a dearth of knowledge concerning the albumoses in this connection which is truly deplorable, and the standard textbooks contain no information of value. Many authors do not mention the subject, while others make statements so erroneous that it were better to have omitted them altogether. As an instance of this, one of our best textbooks states that the presence of "peptone"

In this country with the exception of Chittenden, Yarrow and Stengel, few observers have investigated the subject, the work requiring more time than the physician can generally afford to devote to it. Nearly all the work has been done abroad by a few men, among whom are v. Jaksch, Kuhne, Stirling, Neubauer, Hofmeister, Pohl, Vogel, Devoto, Pocanowski, Robischek, Maixner, William, Kosner, Koppen, Kohler, Senator, Loeb, Leube, Kottnitz, and Furstner. We agree with Kuhne that true peptone has never been found in the urine, and we have never been able to demonstrate its presence in a large number of specimens (4,000), many of which contained the albumoses. We used for the purpose of detecting "true" peptone the ammonium sulfate saturation method, which precipitates all proteids with the exception of peptone. Deuterioalbumose, however, is not as completely precipitated as are the primary albumoses, but it is readily made to do so by the addition of acid. Therefore it is strongly probable that what has been called peptone is in reality a mixture of the albumoses. The conditions in which albumoses are found in the urine are entirely foreign to those diseases in which the other proteids occur. The discovery of serum albumin in a specimen of urine makes us suspect a lesion of the kidney, or inflammation of the genitourinary tract. We may have of course an albuminuria without involvement of the kidney, the so-called "accidental" form. Albumoses are not caused to make their appearance in the urine by general circulatory disturbances, anemia, or nephritis, with the exception of what has been stated.

To a number of observers, v. Jaksch, Boeri, Robischek, Maixner, Pocanowski, and Fischel, belongs the credit of dividing albumosuria (or the Brucke "peptonuria") into four classes, viz.: pyogenic, inorganic, enterogenic, and puerperal. *Pyogenic*, the most common (pathologically), occurs chiefly in suppuration, wherever the seat of disease is located, provided that the pus is not walled off sufficiently to prevent the absorption into the circulation of its constituents. Hepatic abscess, pyosal-

pinx, pyothorax, empyema, suppurative osteomyelitis, purulent cerebrospinal meningitis in contradistinction to tuberculous meningitis (v. Jaksch), and malignant or ulcerative endocarditis are instances of this variety. *Inorganic*, such as scurvy, carbon monoxid poisoning, phosphorus poisoning, and tissue destruction generally. To these we may add leukemia, purpura hemorrhagica, and the resolution stage of pneumonia. *Enterogenic*, caused by the absorption into the circulation, through an ulcer of the stomach or bowel, of the products of proteolytic digestion. Gastric ulcer (also duodenal), typhoid fever (stage of ulceration), and advanced tuberculous enteritis are examples of this class. I have examined a number of specimens of urine, in cases of gastric ulcer occurring in young anemic females, and have been unable to detect the presence of "true" peptone. The patients were receiving peptonized milk at the time of the examinations,



Case I.—Daily amount of albumoses following normal childbirth

but the albumoses were invariably found present. *Puerperal*, which is really a subdivision of the second class, was first demonstrated as a normal constituent of the urine during the stage of involution of the uterus, by Fischel. Being much interested in septicemia following labor and also abortion, I made a large number of examinations of urine following labor and the latter condition. The proteids which I have found in the urine in these cases were serum, globulin, serum albumin, protoalbumose, heteroalbumose, deutoalbumose, and nuclealbumin. Hemoglobin and its alteration products (acid and alkali hematin) were derived from probable contamination, but hematoporphyrin was not. The serum albumin was derived both from contamination from the uterus and from the kidney and genitourinary tract outside of the vagina (globulin also), while the nuclealbumin came from the irritated genitourinary tract. Our interest being involved in the albumoses we will pass on to what

takes place after normal labor. The presence of all the proteids (after normal labor), with the exception of the albumoses, may be termed "accidental." The albumoses in the first case of normal labor (which may be seen in the accompanying chart) followed a rough though regular decrease, appearing to diminish in quantity in direct ratio with the rapidity of involution, and, to a great extent, with the size of the uterus. These results are the first quantitative estimations which have been obtained. The quantitative estimations were commenced September 11, 1899, and were carried on daily until with the most delicate reagents the urine ceased to react for the presence of albumoses. The amount generally used for analysis was 500 cc. of urine, though to test whether the amount of urine taken (from the whole 24 hours specimen) markedly affected the weight of the albumoses detected various quantities of urine were taken; as, for instance, on the seventeenth, when three analyses were made from the same urine, side by side. The difference in the results of the three examinations amounted to only a few milligrams, a very close result, and quite as accurate as quantitative estimations usually are, even when the greatest care is taken. After much laborious work I was able to determine with accuracy that the albumoses found in the urine after childbirth are protoalbumose, heteroalbumose and deutoalbumose, the latter in much smaller quantity than the former two. At the beginning of my work on this subject I soon found that hematoporphyrin proved a source of error in obtaining correct quantitative results, and also some inorganic combinations of phosphotungstic acid. Hematoporphyrin was got rid of by prolonged washings with acid alcohol, followed by ether until the precipitate was rendered colorless. These washings when placed before the slit of the spectroscope showed the characteristic bands of acid hematoporphyrin in alcoholic and ethereal solutions. The inorganic salts were got rid of by careful repeated washings with ice-cold water, to which a trace of chemically pure sulfuric acid had been added. Finally incineration was performed after previous careful weighing. No one more than myself (and I have heard Stengel express the same view) deplors the necessarily imperfect means at our disposal for the accurate and rapid quantitative estimation of the albumoses in urine, and it is with due consideration that I offer these results obtained from puerperal cases. The difficulties encountered in the performance of such analyses can be fully appreciated only by one who has been engaged in this work. Perhaps the most difficult procedure is the absolute and certain separation of other proteids as a preliminary measure. This is, however, of not so much importance in pyogenic cases, in which it is simply required to ascertain whether albumoses are or are not present. The following are the quantitative estimations obtained after normal labor (all primiparas):

CASE II.—First day, 1.9 grams; second day, .7 gram; third day, .56 gram; fourth day, 1.8 grams; fifth day, 2 grams; sixth day, .24 gram; seventh day, 1.04 grams; eighth day, .81 gram; ninth day, .61 gram; tenth day, .45 gram; eleventh day, .95 gram; twelfth day, 1.375 grams; thirteenth day, .54 gram; fourteenth day, .40 gram; fifteenth day, .60 gram; sixteenth day, .74 gram; seventeenth day, .46 gram; eighteenth day, .44 gram; nineteenth day, .48 gram; twentieth day, .23 gram; twenty-first day, a faint trace; and two days later the albumoses are absolutely negative.

CASE III.—First day, .45 gram; second day, 2.24 grams; third day, .93 gram; fourth day, .9 gram; fifth day, .8 gram; sixth day, .7 gram; seventh day, .3 gram; eighth day, .42 gram; ninth day, .87 gram; tenth day, .24 gram; eleventh day, .42 gram; twelfth day, .8 gram; thirteenth day, .4 gram; fourteenth day, .2 gram; nineteenth day, a trace; twenty-first day, negative.

CASE IV.—First day, .15 gram; second day, 1.62 grams; third day, .45 gram; fourth day, .8 gram; fifth day, 1.24 grams; sixth day, .72 gram; seventh day, .72 gram; eighth day, 1.365 grams; ninth day, 2.46 grams; tenth day, 1.4 grams; eleventh day, .84 gram; twenty-second day, negative.

There was no rise of temperature or disturbance to explain the late rise in the quantity of albumoses in Case

III. These observations are interesting as indicating the physiologic processes at work in the reduction of the bulky uterus after its function has been accomplished and the method by which nature rids herself of a now useless burden. It may be suggested that the manner in which this is accomplished is by the conversion of the albuminous bodies (composing the uterus) into simpler hydrolytic cleavage compounds by the action of a ferment in the blood or tissues of the uterus. Myoalbumin and myoglobulin obtained from muscle serum are very similar to those derived from the blood, the first is identical with serum albumin, and the second only differs by having another coagulation point (by heat). Myoalbumose is not coagulated by heat. The chemistry of the uterus during the stage of involution is apparently very complex, and it is idle to form conjectures. My object in these researches was to form a standard or to arrive at some idea of what takes place during the puerperal stage, with the view of separating this variety of albumosuria from the pyogenic form. I had hoped that light would be thrown on septicemia in a number of cases of this condition (following labor), but nothing positive was arrived at except that the quantities of the albumoses were very irregular, varying from a trace one day to as high as 2.5 grams on the following day.

Before passing on to the consideration of pyogenic or suppurative albumosuria, I wish to emphasize the necessity of examining urine freshly passed, or within at least four hours of its passage, as serum albumin and serum globulin are readily converted into their respective albumoses and globuloses by the action of putrefactive and pyogenic organisms. If it is not convenient to examine the urine immediately after its passage, it should be kept on ice. Putrefactive changes explain many of the conflicting statements observed regarding albumosuria in medical literature. If possible the urine should be examined at once.

It is hardly necessary to remind the reader that (toxic and otherwise) albumose-like bodies are produced by the action of various bacteria on culture media, and that they or bodies very similar in their reactions are found in snake venom. Some of these bodies are of astonishing toxicity, as the one just mentioned, and also the dried filtrate obtained from cultures of the tetanus bacillus, which is free from the presence of any germ to account for its poisonous effects. Brieger advanced the opinion that the diphtheria poison is a toxalbumin and disagreed with the "ferment" theory. In regard to the specific poison of tetanus he found the biuret reaction so imperfectly developed that he was inclined to believe that the toxin was not a proteid body. There are many conflicting theories on this subject which we will not dwell upon.

V. Jaksch has been engaged for some time in the study of albumosuria (Brucke peptonuria) and we quote him with great confidence in asserting that the presence of albumosuria as a symptom is of inestimable value clinically. We feel called upon, however, to remark that it will prove but a poor weapon in the hands of those who cannot exclude other causes of its appearance. One of our most prominent men (now deceased) stated about two years ago that "peptone" was regularly found in nephritis. This might be true, indeed, but its presence was not caused by the nephritis, as I will shortly demonstrate, but by decomposed serum albumin (action of germs), which, unless care be taken, might simulate an albumosuria to an inexperienced observer, giving rise to a totally erroneous impression of the case. We are much more careful to obtain fresh specimens of urine for analysis than we were ten years ago, and we are better acquainted with the reactions of the proteids contained in the urine, both in health and disease. The rapid dissolution of casts by the action of beginning fermentation, urinary ferments, etc., makes it imperative that we should procure freshly passed urine in order to secure an accurate diagnosis. I have examined with

great care the urine from 220 cases of chronic parenchymatous and chronic interstitial nephritis (in no case was the urine more than three hours old) without finding the slightest traces of the albumoses. In the urine in these cases, which contained albumin and had stood exposed for 10 to 24 hours, it was frequently present as the result of bacterial decomposition. I have also found it absent in arteriosclerosis, chlorosis, tetanus, symptomatic anemia, pernicious anemia, aortic and other aneurysms; acute and chronic bronchitis, bulbar paralysis, carcinoma of the stomach, liver, bowel, vulva, rectum, ovary, breast, penis, and uterus, cystic ovary, diabetes mellitus, diabetes insipidus, glycosuria, fatty kidney, lardaceous disease of kidney and liver, hepatogenous jaundice, urobilin jaundice, acquired and hereditary syphilis, melancholia and other insanities, miscarriage, abortion, self-induced and otherwise (at beginning of pregnancy), multiple neuritis, hysteria, delirium tremens, masturbation (both sexes), miliary tuberculosis, neurasthenia, nephrolithiasis, all forms of neuralgia, pulmonary tuberculosis (before cavity formation), sarcoma of the liver, suspected appendicitis, and typhoid fever (before the stage of ulceration), acute and chronic gastritis, catarrhal cystitis, chronic and acute rheumatic endocarditis, pruritus, toxic nephritis (due to lead), pneumonia (croupous and catarrhal before the stage of resolution), catarrhal appendicitis, pregnancy, lactation, pleurisy (without purulent effusion), accidental albuminuria, plumbism, etc. I have found it present in appendicitis (disappearing on localization and walling-off of the pus), hepatic abscess, abscess of the hip, and abscesses in all other locations; acute suppurative endocarditis (verified by postmortem examination), coxalgia (when accompanied by suppuration) invariably after abscesses from the use of the hypodermic needle, suppurating dermoid cysts, pneumonia (invariably at commencement of the stage of resolution), extensive suppurating burns of the cutaneous surfaces, pyosalpinx, carbuncle, septicemia (masked or sepsis occulta), gonorrhoea (both sexes), tuberculous peritonitis (late stage—early stage absent), purulent pleurisy, pyonephrosis, ovarian abscess, osteomyelitis, suppurating fibroid tumors, chronic carbon monoxid poisoning, ischiorectal abscess, purulent cystitis, traumatism followed by suppuration, perinephritic abscess, etc. The origin of the albumoses found in the urine in the suppurative cases, it is clear, is from the collection and subsequent destruction of leukocytes, so that the products of disintegration, including the albumose constituent, enter the circulation and are eliminated by the kidney. The albumoses of pus I have found identical in their reactions with those detected in the urine.

There has been some speculation as to whether the oppressive feeling experienced after a heavy meal is caused in part or wholly by albumoses circulating in excessive amount in the blood, thus causing torpor, headache, disinclination to mental or physical exertion, etc., in fact an autointoxication. With this object in view I obtained the urine from 10 individuals, who were habitual "over-feeders," and subjected the mixed 24 hours' urine to analysis, using 1,000 cc. for the purpose. These people always had good health (so termed), but usually ate a very heavy dinner, complaining of the sensations quoted. In all of the analyses I used the phosphotungstic acid method of Salkowski (also with phosphomolybdic acid, but found no difference in the results). In no case was there the slightest indication of the biuret reaction. It would seem rational to suppose that if excessive amounts of albumoses were circulating in the blood, a portion of them would be excreted by the kidney, but it is probable that albumoses have no part in the causation of these symptoms (unless they are not excreted by the kidney) and that other substances related to the xanthin bodies (adenin, leukomains, etc.) or the excessive intestinal fermentation (as shown by

the large amounts of indican) may play an important part in the production of the auto-intoxication.

The following will indicate the value of albumosuria as a symptom not to be lightly disregarded. In pneumonia it indicates the beginning of the stage of resolution or gray hepatization. The cell bodies are disintegrated, the exudate softened, and the debris rendered capable of being absorbed and eliminated to a certain extent by the kidney. This explains the appearance of albumoses in the urine. I have not found the retention and subsequent elimination of chlorids of any value as a symptom. At the time of the crisis, that stage looked for so anxiously by the physician and relatives, with the fall in temperature, and the appearance of the albumoses in the urine, the patient passes from a condition of marked discomfort and apprehension to a condition of comfort and a false crisis is guarded against. In differentiating malarial fever from typhoid albumoses in the urine would indicate that the stage of ulceration had been reached. Of course the finding of the specific organism would settle the diagnosis before this stage, but at times the plasmodium malariae is not easily detected. It frequently occurs that an apparently insignificant symptom is of great import. I have found it of value in indicating that ulceration and cavity formation had begun in pulmonary tuberculosis, which I have verified by repeated postmortem examinations; its presence in concealed suppuration, diagnosing this condition from acute inflammatory processes, serous effusions, transudations, exudations, etc.; its absence in acute inflammation of the ovary and its subsequent appearance when pus has formed being a valuable indication for immediate surgical interference; in appendicitis when, after the acute attack has subsided (suppurative form), its absence indicates that the pus has been walled off, and that an operation may be safely proceeded with, as the risk of infecting the peritoneal cavity is greatly lessened; in diagnosing tuberculous meningitis, in which condition albumose is usually absent, it must be remembered that it may arise "accidentally," and care should be taken to exclude ulcerative processes at work in other organs. According to v. Jaksch, it is valuable in diagnosing between tuberculous meningitis and encephalitis hæmorrhagica multiplex; albumose is present (usually) in the second disease, but very seldom in the first named. Its absence in the presence of the usual symptoms of meningitis is strong evidence of the process being tuberculous. In "latent" septicemia, or as it is sometimes termed "sepsis occulta," its value as a symptom is apparent, though I am not inclined to place as much value on it as a symptom in latent disseminated sarcoma as v. Jaksch does, a condition which, in my opinion, needs further study. Its presence in follicular ulceration of the intestine, stercoral ulcers, simple ulcerative colitis, and perforative ulcer followed by peritonitis, is of value in differentiating these conditions from carcinomas and catarrhal affections of the stomach and bowels. It is absent in intestinal obstruction. It may be noted that acute suppurative pancreatitis may produce symptoms which simulate intestinal obstruction. Its absence in catarrhal jaundice, and its presence in abscess of the liver, often distinguishes between the two conditions, and it is also absent in sarcoma of this organ. Suppurative processes in the gallbladder are thus distinguished from simple obstruction and tumors (carcinomas and sarcomas), also cholelithiasis. It is not present in either atrophic or hypertrophic cirrhosis. In suppurative pancreatitis it differentiates this form from the hemorrhagic, although we must not forget that the condition is extremely difficult to diagnose during life. Its presence in peritonitis distinguishes this condition from ascites and various growths. I have not found the albumoses present in simple ascitic fluid. It is present in both pneumonia and pulmonary abscess, but the presence of the physical signs and the detection in the sputum of

fragments of lung tissue and elastic fibers occurring in the latter condition (accompanied by the offensive odor of the breath) seldom leaves any doubt as to the nature of the trouble. The most important fact which I wish to emphasize is the necessity of studying the symptoms in each case very closely, excluding all other causes of albumosuria, and this is not a difficult task, except at rare intervals.

I will now give briefly a number of cases to illustrate the practical value of albumosuria as a symptom:

CASE I.—The patient was admitted to the Samaritan Hospital for operation. Diagnosis, supposed fibroid tumor or ovarian cyst. Her previous history pointed to a recent local pelvic peritonitis. Abdominovaginal examination revealed marked tenderness, and a large, firm mass could be felt in the right broad ligament. She had had a chill previous to entering the hospital. Her temperature now showed a septic curve, and the pulse was slightly accelerated but not "wiry;" complexion dusky, and her appearance suggestive of sepsis. Diagnosis, pelvic abscess. Urinary analysis showed marked renal involvement, with a deficiency in the amount of urea excreted. This occasioned the postponement of the operation, with the hope that an improvement in the condition of the kidney might take place and her condition be rendered more favorable for anesthesia and operation. The urinary analysis from day to day showed a constant reaction for the albumoses, but it is interesting to note that her general condition seemed to improve rapidly. Her temperature and pulse reached normal, and the pain and tenderness over the abdomen disappeared. She felt so much improved that she decided at this time not to have the operation performed. The mass in the pelvis remained the same as regards shape, size, and consistency. In the course of a week after this temporary improvement she began to complain, her temperature assumed a septic curve, pain and tenderness were again marked, and her general appearance was worse than it had been on the day of admission. Operation was decided upon, although the excretion of urea was very slightly below normal. The operation, performed by Dr. Haehnlen, confirmed the diagnosis, it being a large multilocular abscess, involving the right tube, ovary, and broad ligament. Urinary analysis seven hours after the operation showed no reaction for the albumoses.

This case is very instructive in showing that although the patient was apparently becoming better (as regards her general condition) she was in reality slumbering over the edge of a precipice, and that her life was menaced until the operation was performed and the pus removed from her abdomen. Her subjective symptoms had been somewhat misleading, and the mass in the belly might have been confused with other conditions. The point which really determined the presence of pus in her abdomen was the persistent presence of albumoses in the urine.

CASE II.—Adult woman, symptoms of hepatic abscess; a diagnosis of this condition was made by the attending surgeon, and operation suggested; blood examination (polymorphonuclear leukocytosis, moderate); urine did not contain the albumoses. Operation revealed an inoperable sarcoma of the liver.

CASE III.—Adult man, symptoms of latent septicemia, suspected suppurative endocarditis; cultures from the blood showed pyogenic cocci; albumoses persistently present in the urine; blowing murmurs, systolic in time, at the mitral and aortic orifices. Postmortem examination revealed ulcerative endocarditis at both aortic and mitral valves (of gonorrhœal origin). Albumoses found in the blood taken from the heart cavities.

CASE IV.—Adult woman; had persistent albumosuria following operation for removal of the ovary (cystic). She did well after the operation, no rise in temperature or increase in the rapidity of the pulse. Wound healed by first intention, but albumoses appeared in the urine, and persisted. Wound was carefully examined for a possible stitch abscess, but no evidence of such was discovered. Finally, an overlooked hypodermic abscess was found on the left arm above the elbow. This was opened and the albumoses immediately disappeared from the urine. At the same time two counts of the leukocytes were made from blood taken from the affected arm and from the healthy one. There was no difference in the differential counts, nor practically in the total number, and an increase of the leukocytes was not present.

CASE V.—Patient of Dr. Hawley, Samaritan Hospital. Abdominovaginal examination revealed a large semisolid mass which filled the pelvis almost completely. The cervix was pressed high up back of the symphysis. The mass, which was of firm consistency, but not hard, was apparently continuous with the cervix uteri. The patient's condition being grave at the time of admission she could not be placed under ether for a more satisfactory examination. Urinary analysis showed a marked renal involvement and a constant reaction for albu-

moses. Operation revealed a suppurating dermoid cyst of the ovary, uterus normal. In this case we looked upon the persistent presence of the albumoses as indicative of suppuration, though the exact character of the condition was not determined until the laparotomy revealed it.

CASE VI.—Adult woman, septic temperature, rapid "wiry" pulse, condition grave, marked tenderness over the region of the ovaries. Abdominovaginal examination revealed enlarged tubes on each side, extremely tender to the touch; albumoses were persistently present in the urine until after operation. Diagnosis: double pyosalpinx. Operation revealed a double pyosalpinx as well as an ovarian abscess.

CASE VII.—Adult woman, had severe and intermittent pain over both ovarian regions, slight rise in temperature and increase in the pulse-rate, though the latter was not "wiry." Abdominovaginal examination revealed immense masses posterior to the uterus and in both broad ligaments. These masses were extremely tender to the touch. Uterus apparently normal in size. Urinary analysis showed a constant reaction for the albumoses. Diagnosis: pelvic abscess. Operation revealed multiple abscesses of the tubes, ovaries, and broad ligaments on both sides, besides a perirectal abscess. Dense intestinal adhesions everywhere present in the pelvis, and the appendix was bound down in a mass of lymph, but was not diseased.

CASE VIII.—Patient of Dr. John Boger, adult male, was admitted to the Samaritan Hospital with all the symptoms of appendicitis present in a marked degree: high temperature, rigidity of the rectus muscle on the affected side, with great tenderness over McBurney's point, and a rapid, "wiry" pulse. Urinary analysis showed a marked reaction for the albumoses. His blood showed a leukocytosis of 19,000, with the polymorphonuclear cells increased markedly. Operation was delayed at my suggestion, in hope that the inflammatory process would become localized and the pus walled off. The urine was examined daily until the third day after admission to the hospital, when the albumose grew rapidly less in quantity, and finally ceased. The symptoms became less aggravated and the patient felt much more comfortable. The leukocytosis had fallen to normal. Operation showed an extensive appendiceal abscess, completely walled off by dense adhesions of recently-formed lymph.

This case illustrates the value of albumosuria in determining the course of suppurative processes and the most favorable time for operation.

CASE IX.—Patient of Dr. Haehnlen, an adult woman, seen for the first time during the second week following an abdominal section. Had had hypodermoclysis in both breasts at operation. Septic temperature and great pain and tenderness in both breasts, which on inspection were found swollen and congested; no signs of fluctuation present. Urinary analysis showed the presence of the albumoses. Operation revealed both breasts filled with pus, deeply situated. The albumoses disappeared after operation very promptly.

CASE X.—Suspected ovarian abscess; albumoses present. Operation showed that the diagnosis was correct.

CASE XI.—Suspected osteomyelitis; albumoses present (Bence-Jones' bodies not found). Operation revealed the presence of pus.

CASE XII.—Coxalgia; albumoses present. Operation, pus found.

CASE XIII.—Suspected pyosalpinx; albumoses present. Operation verified the diagnosis.

CASE XIV.—Ischiorectal abscess; no fluctuation present, albumoses present. Incision revealed pus.

This patient was probably saved from a fistula by prompt operation, as the suppurative process had burrowed its way close to the rectum.

CASE XV.—Suspected perinephric abscess; albumoses present. Operation revealed this condition.

CASE XVI.—Coxalgia; before sinus formation, pus could not be detected by inspection or palpation; albumoses present. Operation revealed the presence of pus.

CASE XVII.—Coxalgia as preceding case.

CASE XVIII.—Spinal caries; albumoses present in the urine, pus found on operation.

CASE XIX.—Suppurating fibroid (suspected); albumoses present. Operation verified diagnosis.

CASE XX.—Appendicitis; decided to be suppurative on account of the presence of the albumoses, symptoms somewhat obscure. Operation revealed appendicular abscess.

CASE XXI.—Tuberculous adenitis of the neck; glands were soft, but no distinct fluctuation could be detected. Operation revealed pus.

CASE XXII.—Appendicitis; albumoses present. Operation verified the diagnosis.

CASE XXIII.—Catarrhal appendicitis; albumoses not present. Operation showed the absence of pus.

CASE XXIV.—Suppurative keratitis; a trace of albumoses found in the urine; pus formed in the eye.

CASE XXV.—Necrosis of the metatarsus; albumoses present; pus found at operation.

CASE XXVI.—Prostatic abscess (mistaken for hyper trophy); albumoses present in the urine. Operation revealed

the condition, which the attending physician would not consider previously at my suggestion.

CASE XXVII.—Epidemic parotitis, occurring in a patient of my own, a male child of 12 years. The condition commenced with pain and swelling beneath the right ear; temperature 103° F. He experienced great difficulty in opening his mouth and in masticating his food. The swelling remained localized on the right side of his face, and I was at a loss at first to decide whether we were dealing with a simple abscess or mumps. His mother displayed great anxiety, and inquired constantly whether I thought pus would form and an abscess result. A blood examination showed no leukocytosis and no relative increase in the percentage of polymorphonuclear elements.

I was aware that Cabot had examined the blood in five cases of epidemic parotitis and had found no leukocytosis. I examined the urine repeatedly for the albumoses for several days (during which time the swelling remained of the same size) but never found them present. I was now sure that we were dealing with unilateral mumps and not with an abscess. I had the pleasure of seeing the affection disappear in a few days without any suppurative process having taken place. In this case the absence of albumoses proved of extreme value, as did the negative count of the leukocytes.

CASE XXVIII.—Suspected otitis media in a male patient. The affection commenced with persistent pain the right ear, disappearing in a few days. Albumoses were present in the urine during all this period. On the fourth day pus issued from the external meatus.

CASE XXIX.—Pyosalpinx; albumoses found. Operation verified diagnosis.

CASE XXX.—Catarrhal appendicitis; history of three previous attacks; no albumoses present. Operation showed the absence of pus.

CASE XXXI.—Cystic ovary; albumoses not present. Operation verified the diagnosis.

CASE XXXII.—Patient had much pain and tenderness over the region of the gallbladder, with moderate rise in temperature and increase in pulse-rate. Was thought by the attending physician to be suffering from hepatic abscess. Albumoses were not present; in the course of a few days several gallstones were passed and the condition immediately subsided.

CASE XXXIII.—Patient admitted to the hospital with high temperature, running pulse, and marked pain over the left lung posteriorly, with considerable dullness; albumoses present. The diagnosis of empyema was verified by postmortem examination.

CASE XXXIV.—Carcinoma of the stomach, occurring in a man of 56. The pyloric orifice was reduced to the diameter of a leadpencil; the tumor was about twice the size of a walnut and was very difficult to map out. There had never been any pain, vomiting, in fact nothing except gradual loss of strength. The urine was repeatedly examined for the albumoses, but they were never detected. Postmortem examination showed a carcinoma of the pylorus.

CASE XXXV.—Carcinoma of the stomach (cardiac opening); albumoses were never present. Condition verified by postmortem examination.

CASE XXXVI.—Adult female; abdominovaginal examination revealed nodular tumors of the uterus; albumoses not present. Operation showed a fibroid tumor of the uterus.

CASE XXXVII.—Adult woman; abdominovaginal examination disclosed a globular hard mass in the right iliac fossa; albumoses not present. Operation revealed a unilocular cyst of the ovary. The fluid which this cyst contained did not show the presence of albumoses, but did show serum globulin and serum albumin.

CASE XXXVIII.—Patient had a mass in the right testicle, which was extremely tender to the slightest touch; albumoses not present. Operation revealed a carcinoma of the testicle.

CASE XXXIX.—Adult man; affection commenced with severe pain and swelling in the right shoulder-joint; had never had rheumatism; unlike rheumatism (acute articular), it did not move successively from joint to joint. Albumoses not present. Pain and swelling subsided rapidly under appropriate treatment. This patient occupied an important mercantile position, and it was of the greatest importance that a correct diagnosis be made. The blood examination was negative.

CASE XL.—A woman of 22 was admitted to the hospital with symptoms of septicemia; self-induced abortion suspected, as all other conditions were practically excluded; microscopic examination of the discharge from the uterus negative. Albumoses were persistently present in large amounts, and I adhered to my suspicion. She finally admitted that it was true.

CASE XLI.—Adult man, aged 79; had suffered from repeated attacks of catarrhal jaundice for 30 years, from which he easily recovered. When he came under my observation he was suffering from severe and intermittent pain in the region of the gallbladder, with marked tenderness. Albumoses were at no time present. His symptoms, taken together, made the diagnosis of hepatic abscess strongly probable. He had also a

leukocytosis of 27,000. At the postmortem examination carcinoma of the gallbladder was found.

CASE XLII.—Adult negro; necrosis of the parietal region; albumoses constantly present; was operated upon (bone cured); albumoses still present after operation. At postmortem examination a recent thrombosis of the superior longitudinal sinus was found directly situated under the necrotic area externally. The thrombus was broken down, softened and its contents partially liquefied and purulent.

CASE XLIII.—Adult male; consulted me for general nervousness; appeared hypochondriacal; a marked trace of the albumoses found in his urine. Other causes excluded, gonorrhea was discovered to be accountable for the symptoms of neurasthenia. This case is one of many in which I have discovered a previously denied attack of gonorrhoea.

CASE XLIV.—Female dog; abscess of the jaw, no signs of fluctuation or pointing; albumoses found; incision revealed the presence of pus.

CASE XLV.—Severe neuritis of the left arm, which was swollen and red from shoulder to finger-tips, skin was tense and shining; albumoses not present; symptoms disappeared under appropriate treatment. This case caused me anxiety as the inflammation was of such a high grade as to make impending suppuration seem certain.

CASE XLVI.—Adult female; abdominovaginal examination revealed a hard nodular mass attached to the uterus which was immovable. Patient had high temperature, rapid running pulse, and was completely prostrated. A diagnosis of probable suppurating fibroid was made. No albumoses were found. Operation disclosed a carcinoma of the fundus and body of the uterus with general involvement.

CASE XLVII.—Adult male; diabetes mellitus complicated with carbuncle. Albumoses found disappearing when the carbuncle had been thoroughly opened and the pus evacuated.

CASE XLVIII.—Adult male; diagnosis, acute pericarditis; albumoses found. Autopsy revealed the pericardium filled with pus.

CASE XLIX.—Abscess of kidney; albumoses present. Postmortem examination proved the diagnosis correct.

CASE L.—Suspected pyosalpinx; albumoses not found. Operation revealed a cystic ovary.

The presence or absence of leukocytosis in suppurative conditions has lately been the subject of considerable controversy. I have arrived at the conclusion from numerous leukocytic counts in suppurative conditions that a single count has rarely any diagnostic value, and is not to be relied upon. There are so many apparently insignificant causes of leukocytosis that great discrimination must be observed before coming to the conclusion that the process under consideration is suppurative. It may be that in a dozen or so cases we will find the presence or absence of leukocytosis of value, then again we will be deeply disappointed. There is a sound pathologic basis for this wide variation in results which I will not discuss. If I had depended on the presence or absence of leukocytosis in the cases given herein, I would have been lead widely astray. The great disproportion between the number of erythrocytes and leukocytes, counted on the Thoma-Zeiss blood-plate, also leads to error, if we consider the great difference in the result—if two or three leukocytes are or are not counted. The proper method (which it appears to me is little used in this country) is by means of the Friedlander counting plate, which makes the number of leukocytes counted equal to the number of erythrocytes counted on the Thoma-Zeiss plate.

In the diagnosis between simple leukorrhoea and gonorrhoea I have found the presence of the albumoses in the urine of value, as sometimes throwing light (especially in women) on an entirely unsuspected condition, the apparently good behavior and morals of the patient leading us astray. I have made it a rule, in these cases, to examine the discharge for the gonococcus, and have often seen a perplexing diagnosis cleared up. It is hardly necessary to remind the reader that great care should be exercised in announcing such a diagnosis before it is absolutely certain. In pleurisy I have found it of value in indicating whether the effusion was or was not purulent, and the cases of pneumonia in which I have observed its presence to indicate unerringly the beginning of resolution are numerous.

Dr. Yarrow, Sr., has had during the past eight years seven attacks of catarrhal pneumonia. In every attack albumoses were present during the stage of resolution, which was almost always protracted and exhausting.

Albumoses are often mistaken for serum albumin and serum globulin in urinary analysis, as so many of their reactions are similar with those tests which are commonly used for the detection of albumin. More than one case has come to my notice in which a diagnosis of chronic parenchymatous nephritis had been erroneously arrived at by a lack of care in distinguishing the proteids.

A host of conditions will suggest themselves in which the presence or absence of the albumoses will prove of great value in diagnosis. I have refrained from giving a longer list of cases which I have observed, as I think those already given will illustrate what I have endeavored to bring prominently before the medical profession, with the earnest hope that many lives will be saved through this important means of determining whether pus is or is not present in the body. We might broadly say that all pathologic processes rest on inflammation and retrograde metamorphosis as a basis. A change in the function of an organ or tissue leads to irritation or inflammation, which may terminate in recovery or proceed to degenerative changes, when the broken-down tissues must be got rid of or disposed of in some manner. Following inflammation many cells are so stimulated or irritated that their death is certain, and they must be disposed of to make room for new ones. It is hardly necessary to add that pus or the products of tissue destruction always seek to escape from the body. If the ordinary path is obstructed, nature seeks in two ways, principally, to rid herself of the useless and poisonous debris, first by walling off the pus to prevent its further absorption or invasion and subsequently slow absorption and elimination; second, by direct and more rapid absorption into the circulation and elimination by the kidneys, skin, lungs, etc. The second process results in general septicemia or pyemia in many instances, although there is no doubt that it takes place to a certain extent even where the pus is safely walled off, and gives rise to the usual symptoms of sepsis which we observe. Nature always endeavors to hem in the invading bacteria by a wall or barrier of leukocytes, and if the collection of pus is not large, it is disposed of quite rapidly by absorption. From the large number of cases of septicemia in which casts and albumin are observed in the urine, I cannot help being convinced that inflammatory or toxic changes are set up in the kidney in nearly every case of septic absorption. Especially have I seen this occur in septicemia following childbirth and abortion, when I had previously examined the urine and found it normal. With recovery the casts and albumin disappeared, and rarely was there any further evidence of a kidney lesion. That such lesion is occasioned by septic products passing through the kidney seems highly probable, as the condition disappears rapidly after the poisonous products have been eliminated. This condition is also observed during the last stages of many diseases, as, for instance, carcinoma, sarcoma, diabetes mellitus, etc. (acid intoxications). In the nephritis following or occurring during septicemia, we do not find that striking diminution in the quantity of urea excreted that we observe in chronic parenchymatous or interstitial nephritis, so characteristic of the latter as to be almost a symptom.

The prompt recognition of the fact that pus is present often relieves a situation of some of its danger, as an early operation may be performed with confidence and knowledge of the condition which has to be met and grappled with. Operations undertaken during the acute stage of appendicitis (when the suppurative process is spreading) give a mortality of 20% or higher, and may be followed by a relapse. Operations undertaken during the stage of quiescence are followed by a very low mortality, and it is here that albumosuria in indicating that this stage has been reached is of great value in saving life which otherwise would have been lost. Dr. Joseph Price has said: "Surely there is not a more pitiful sight than the little child, sweating, tossing, and

dying, its abdomen an arch, its heart a high-pressure pump, on a chair by the bed a basin and a bowl of cracked ice. To see this a few times makes the most conservative shudder and wonder." And I will add that this pathetic situation often originates or is caused by the doubt in the mind of the physician or surgeon as to whether pus is or is not present. According to Deaver, ptomain poisoning, food infection or autointoxication often gives rise to symptoms which strikingly resemble those of acute appendicitis. The presence or absence of albumosuria would afford a strong clue to distinguishing this condition from appendicular abscess. Deaver and myself are also opposed to placing absolute reliance on the presence or absence of leukocytosis in such cases. In the first seven cases of various intraabdominal suppurative conditions which I observed and studied carefully (when I had not as much confidence in albumosuria as I was forced to have later) the diagnosis was rendered unerring, the presence of pus disclosed at the time of operation, and all of the patients recovered. Since then my confidence has steadily increased.

From leukemia, in which affection the albumoses are sometimes found in the urine, suppurative conditions may be distinguished by the absence in the latter of the striking and characteristic blood changes observed in the former disease, such as the enormous increase in the number of leukocytes and the pathologic variations in the differential count of the same. The inorganic albumosurias would seem at first glance to confuse the diagnosis, but when they are studied the cause of the tissue destruction is made apparent, as in phosphorus poisoning, chronic carbon monoxid poisoning, scurvy and purpura hæmorrhagica. The history of the case and the characteristic symptoms of these conditions will readily serve as a guide in the large majority of cases to prevent confusion. After labor (as I have shown) the presence of the albumoses in the urine is the result of a physiologic process. The exact chemical nature of the products of retrograde metamorphosis resulting from the process of normal involution are still unknown, with the exception of the albumoses. It may, however, be safely assumed that these proteids disappear from the urine about the twenty-first to twenty-fifth day, and that their presence later than this would indicate some pathologic condition of the uterus. The disappearance of the albumoses shortly after operation (when the pus has been removed) is interesting and important. By its persistent presence I have often detected a wholly unsuspected stitch-hole abscess.

I may add that albumosuria is invaluable in indicating beginning suppuration following traumatism such as gunshot and stab wounds of the thorax and abdomen, also in meningitis resulting from contusion or fracture of the skull. I am sure that by closely observing what I have conscientiously endeavored to demonstrate the importance of, we can greatly lessen human suffering and prolong life, diminishing the number of those conditions which often bring life to a premature termination. The pathway of diagnosis is beset with difficulties, and light from a reliable source should be welcomed, if by its means life may be saved or prolonged. In conclusion, I wish to thank Drs. Deaver, Boger, Hæhnlén, Hawley, and Schell for the interest which they manifested in this work, much of it being carried on at the Samaritan Hospital.

Homeopaths' Demand.—It is reported that Mayor Ashbridge has recommended to the City Council that the homeopathic profession in Philadelphia be granted the right to take charge of a city hospital, entirely under the control of this school. Leading physicians representing the homeopathic profession have met and taken formal action respecting the matter, and have considered the best means to carry into effect the proposition made by the mayor. The society has asked that when a new municipal hospital is completed that the old Municipal Hospital be turned over to the homeopaths for the treatment of noncontagious diseases under municipal control and where homeopathic treatment only shall be practised.

INFLUENCE OF MARRIAGE AND PREGNANCY ON DISEASES OF THE HEART.¹

BY

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A physician, consulted as to the advisability of marriage in cases of disease of the heart, should take into consideration a variety of circumstances.

In the first place he should consult in a certain measure the wishes and ideas of the person interested. I need not dilate upon the bad effects which may be produced in the case of a cardiac patient simply as a result of withholding consent to a marriage ardently desired. In addition, he must consider the degree of the lesion, particularly whether this lesion has already given rise to cardiovascular symptoms, such as hemoptysis or marked dyspnea. Under such circumstances the marriage should be disadvised, for if the heart disease under normal conditions of existence has given rise to even slight attacks of "asystole," indicating a certain tendency to cardiac "adynamia," it is probable that a pregnancy would render more marked and formidable these symptoms, on account of the new and certainly defective condition thus imposed upon the circulation. Even in such cases, however, it is well not to be too uncompromising. The various circumstances under which the symptoms have made their appearance should be carefully investigated, and the effect of treatment inquired into, so as to ascertain whether the cardiovascular disturbances have rapidly yielded to the medicinal substances employed.

The situation of the patient in respect to occupation and hygienic surroundings should also be taken into account, in order to learn whether there is anything in this connection which might result in her being exposed to prolonged causes of organic perturbations. Lastly, it should be ascertained whether she would be at liberty to keep perfectly quiet in case of unfavorable symptoms making their appearance.

If the conditions are all favorable there is no reason for objecting to marriage. However, the condition of the heart should be carefully watched, and the precautions required to be taken by the patient herself should be fully explained to her, as well as the necessity of avoiding so far as possible all effort and fatigue in case of pregnancy. Moreover, I would dilate considerably upon the importance of the preventive action of a mixed milk diet, the milk being consumed at the rate of two liters daily. This diet, rigorously applied from the third month of pregnancy, constitutes a powerful aid to the circulation by reason of its action on diuresis.

For my part, I should not offer serious objection to marriage in the absence of all cardiovascular symptoms of certain gravity, when the patient is willing to promise to observe this diet in the case of pregnancy. It appears to me that milk not only exerts a preventing action on gravidocardiatic symptoms, but also on the appearance of albumuria. In fact, I consider a milk diet an excellent preventive treatment for pregnant women from the moment pregnancy is established. There can be no doubt, however, of the aggravation of the cardiac lesions under the influence of repeated pregnancies. Pregnancy, moreover, in some cases, may cause serious disturbances in the cardiopulmonary circulation by throwing an additional amount of work upon the heart. This is more likely in patients suffering with a mitral lesion, which by affecting the lesser circulation may, sooner or later, cause lung and heart symptoms, such as dyspnea and hemoptysis.

CASE.—The patient was a woman of 31, who had no particular family history and who was healthy during childhood and early life. The menstrual function was established early and was always regular. When 21 she had an acute attack of general articular rheumatism lasting with periodic exacerbations

¹ Read before the Lehigh County Medical Society, Allentown, Pa., November 11, 1902.

for nearly two years. During this time she suffered with involvement of the heart from the rheumatic infection. Since then she has had no further attack of rheumatism. However, when she returned to her usual occupation she noticed that she got out of breath easily, her respiration had become short and she suffered somewhat from palpitation. Her health, however, remained fairly good and she married at 24. The following year she had her first child, pregnancy and labor being quite normal. A second pregnancy at 26 resulted the same way. At 27 she had a miscarriage at four months without any evident cause. There were no apparent after effects and she considered herself in good health. A year later she again became pregnant and for the first time since her marriage she began to "feel her heart." Any ordinary exertion resulted in dyspnea, the palpitation became more marked than ever before, and at times she even had blood in her sputum. The pregnancy continued, however, and she was delivered at term without complications. At 30 she was delivered for the fifth time after normal gestation. The delivery seemed normal in every way, but immediately thereafter symptoms of acute asystole became manifest, evidenced principally by repeated spitting of blood and marked dyspnea. Her general condition was that of severe prostration. She suffered from severe oppression and want of breath. The face was cyanosed and the extremities were cold. Hemoptysis and weak and irregular action of the heart continued. Jugular pulsation, strong enough to be seen at a distance, was present. This showed the existence of tricuspid incompetence with dilation, as ascertained by percussion. No evident improvement appeared to be obtained from medium doses of digitalis for the first several days. Small doses of morphia appeared to be very soothing and restorative so far as the dyspnea and arrhythmia were concerned. Auscultation could then be done better and a systolic apex murmur was found over the ensiform cartilage, which confirmed the evident tricuspid regurgitation. The patient eventually made a fair recovery, but the heart never recovered the state of equilibrium in which it was before the last, and especially before the fourth, pregnancy.

As the mitral and tricuspid lesions were not both due to the same cause—rheumatism—there was, I think, reason to believe that the influence of repeated pregnancies aggravated the original mitral lesion, causing the disturbance of the pulmonary circulation and the dilation of the right half of the heart with functional tricuspid inadequacy.

THE REPORT OF A CASE OF MALIGNANT EDEMA.¹

BY

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The condition to which I wish to call attention is that of malignant edema, a rare disease in these days of perfected surgical technic. It is a rapidly spreading inflammation, in which the tissues become distended with the gaseous products of decomposition due to the infection of the parts by a special microorganism. This germ was first described in 1877 by Pasteur, who called it the *Vibrio septique*. It was carefully studied by Koch, in 1881, and called *Bacillus oedematis maligni*. It is a widely distributed microbe, and is found in the superficial layers of the soil, in dust, in decaying matter and in foul water. It is a bacillus from 3.0 to 3.5 μ long. It is often united in pairs or chains, and may form filaments. In its general appearance it looks like the anthrax bacillus, but on closer inspection is found to be thinner and to have rounder ends. The segmentation does not resemble that of *B. anthracis claviformis*. It forms oval spores which have a greater diameter than the bacillus itself. These are situated either toward the ends or centrally and cause swellings in the organism. It is stained by the usual dyes but decolorizes by Gram's method. It is anaerobic, liquefying and slightly motile. It grows best at 37° C., but also grows at the room temperature. The most characteristic growth is obtained by seeding it in gelatin liquefied by heat. The deeper ones develop into special colonies in two or three days. When examined with the low power they are found to be permeated with a network of filaments radiating from the edges of the colony. According to Kitt,

it is pathogenic for mice, guineapigs, rabbits, horses, dogs, sheep, calves and chickens. Arloing and Chauveau state that cattle are immune. When produced artificially the smaller animals generally die, while the larger ones usually survive.

After death the liver and spleen are found to be enlarged and soft and filled with numerous bacilli. If the autopsy is made immediately, the germs are not found in the heart's blood, but if made some hours after death, the blood of the heart will contain a great many of these bacilli. At this time they are found in all the organs and in the serous cavities. Mice are an exception to the general rule. In them the bacilli may invade the circulation before death so that they are found widely distributed even if the autopsy is made immediately.

Brieger and Ehrlich report two cases of typhoid fever complicated with malignant edema, which resulted from the hypodermic injection of impure musk.

Grigorjeff and Ukke have observed a case of typhoid fever in which after intestinal perforation had taken place there was a general infection with *B. oedematis maligni*.

The gangrenous and putrefactive phenomena which are marked features of the disease are said to be due, not to the specific organism, but to the admixture of the ordinary putrefactive bacteria. According to Park, when the bacillus is injected in pure culture, it produces an extensive hemorrhagic edema without gas formation, but when an impure culture or garden earth is used, the resulting lesion is a combination of emphysemic edema and gangrene.

This organism must not be confused with *B. aerogenes capsulatus* of Welch. This is an anaerobic, gas-producing germ. It is however, nonmotile, nonliquefying and does not form spores.

The case which I wish to report occurred in my service at the City Hospital, the patient having been referred to me by Dr. J. W. Chambers.

On July 1, 1900, at 3 p.m., the patient, a boy of 12, fell from a swing. He sustained a fracture at about the middle of his left femur. The upper part of the bone cutting through the soft parts ran into the ground. He was removed to his home, where his family physician cleansed the wound and put the leg in a side-splint. Dr. Chambers was called to see the boy at 10 p.m. At this time he had a temperature of 99° F., a pulse-rate of 90, and was resting quietly. However, early the next morning the boy became delirious, and his leg began to swell. He was seen by the consultant at 2 p.m., on July 2, when he had a temperature of 103° F., pulse of 160, and respirations 40. The leg and thigh were very much swollen and dark, and emphysematous streaks extended up the thigh and spread over the abdomen. From the wound there was discharging a dark-brown, serous fluid. The boy was ordered to the hospital, where I saw him at 5 p.m. of the same day.

At this time his temperature was 105° F., while the pulse and respirations were the same as earlier in the afternoon. The leg, abdomen, and back were covered with the characteristic brown, bacon-like streaks, and the tissues over these parts cracked on palpation.

Under ether anesthesia the thigh was amputated just below the greater trochanter. The muscles were bright pink in color. A dark-brown fluid filled with gas bubbles could be pressed out from the connective tissue between the muscles. Incisions were made over the abdomen, side and back. The amputation wound was left open, and no sutures were used. The wounds were packed, and a constant stream of 1-2000 mercuric chlorid solution allowed to run over the dressings. The boy was stimulated in every way. On July 3 he seemed better. He had retained all his nourishment, and his bowels had moved. The temperature was 101° F., the pulse 120, and respirations 30. When the wound was dressed the foul smelling, necrotic tissues were cut away. The disease continued to spread, however, and by July 5 the crackling could be felt over his shoulders. He died on July 7, six days after the injury. No autopsy was allowed.

On July 2 cultures were made from the secretion from the wound and from the necrotic tissues taken from between the muscles, and *B. oedematis maligni* was found in all the cultures. The cultures contained both bacilli and spores in great numbers, as well as some contaminations.

Dr. H. Westphal inoculated rabbits with the secretion from the wound and also with bits of the necrotic

¹ Read before the Journal Club, November, 1900.

tissues. These rabbits all died in 24 hours having shown the characteristic symptoms of malignant edema. In these animals the bacilli were found in all the organs. An examination of the blood of these rabbits a short time before death did not reveal any organisms, but a short time after death the blood was found to be filled with them. The secretions from these animals produced malignant edema on being inoculated into others.

On July 3, in the coverslip preparations made from the tissues deep down between the muscles, spores of the tetanus bacillus were found in addition to the malignant edema organism. The boy was given one vial of anti-tetanic serum. He did not at any time show symptoms of tetanus. It is not claimed that this single dose of serum prevented the disease, but it was thought wise to take this precaution after finding the tetanus germs which had evidently been in the wound 48 hours.

BRIEFS ON PHYSICAL TRAINING.

BY

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No. 6.

The Most Valuable Forms of Athletics, and General Conclusions.

The previous briefs on physical training embrace rational methods of muscle building which are open to every one and which require no great expenditure of time nor complicated apparatus and no associates. The aims of muscle building have already been outlined in general. It must be remembered, however, that the principal object is after all the preparation of the muscles for exercises of a general character, involving the elements of recreation, endurance—to a moderate degree—and skill. I am laying aside altogether athletics for prowess and professional athletics, excepting in so far as what I may say may be of service in the guidance of individuals whose trend is in one or the other of these directions.

In speaking of competitive athletics I refer chiefly to athletics practiced with the sole object of achieving a record or for prizes. Practical athletics cannot be absolutely dissociated from the element of competition in such forms as require more than one individual for their practice. Thus boxing, fencing, and wrestling must necessarily be in a sense competitive, otherwise there is no zest to their performance.

It is better for the unprofessional devotee of athletics for health not to specialize but to practise different forms of athletics. There are certain principles that should be inculcated at the beginning:

1. That rational athletics aim at symmetric development and health improvement, not at gigantic muscular development. The subject should understand that the latter can often be procured only at the expense of life.

2. An attempt should be made, not to excel in prowess another individual of perhaps an entirely different physique, but to get as much out of one's self as is consistent with normal capacity.

3. That athletic exercises in the open air are the ideal forms of athletics.

4. That athletics involving quick movements are of the most practical, useful, and beneficial type. A muscle which is developed by slow movements against weight ever remains a sluggish and comparatively useless muscle. Here is the chief source of disaster to phenomenally strong men whose immense muscular development has been acquired by hard labor when they are induced by overenthusiastic admirers to enter the field of competitive athletics. The professional strong man who goes into the prize-ring very rarely achieves

more than a second or third-rate reputation. When brought in competition with athletes to the manner born the end is rarely doubtful. There are, of course, exceptions to this rule, but they are rare. To formulate a rule the quality and action capacity of a muscle of given bulk is governed largely by the manner in which its development has been acquired.

5. Athletics, when properly selected, are not only beneficial to health but increase the chances of the individual in the battle of life, a point which will be expatiated upon later.

6. One of the most salutary features of proper physical training, one which should be achieved whenever possible, is play. It is possible for an individual to train exhaustingly with gymnasium apparatus without securing for a moment that diversion of the mind which is so essential to athletics for health. The student can swing Indian clubs by the hour without forgetting for a single instant the vexatious problems of his daily pursuit. The board of trade broker can worry about the price of wheat while vigorously exercising with the dumb-bells or rowing machine. The benefits of physical training under such circumstances are very dubious to say the least.

That play is essential to exercise, and, indeed, is a natural factor of physiologic exercise, is well illustrated by the habits of young animals during the period of active growth. The play of children is chiefly responsible for such physical development as they acquire.

Before undertaking practical athletics of any kind, a thorough physical examination should be made to determine (1) the general muscular development and capacity, as an indication of the quality and quantity of exercise that are most desirable; (2) to estimate as nearly as may be the general vitality and recuperative power of the subject. This is an important point, and one which cannot be very definitely settled save by subsequent observation and careful estimation of the endurance of the individual under special forms of physical exercise; (3) to determine the points of least resistance. For example, an individual with defective heart or lungs must take up such a course of exercise as is least likely to produce heart strain, or is best adapted to pulmonary development. It should be remarked in this connection that cardiac disease is not necessarily a contraindication to exercise. Moderate systematic muscle training is oftentimes beneficial to a heart, the integrity of which has been seriously impaired by disease. The advisability of exercises tending to pulmonary development being taken in the open air is at once obvious.

There are certain forms of exercises to which the play element and the cooperation of cheerful companions are necessary concomitants. The chief among these are boxing, fencing, wrestling, handball, baseball, and the modern, sensible fad of golf. It is not possible for the individual to indulge in any of these forms of exercise while at the same time permitting his mind to be engrossed with the cares of business. This is especially true of boxing, fencing, and wrestling. Should the individual allow his mind to stray from the work in hand, he is quite likely to be forcibly reminded of his negligence by his antagonist. There is a stimulus in the muscular and intellectual opposition of one's associates in exercises involving play and skill which can be obtained in no other manner. The battle of wits and muscles is always beneficial, providing the element of muscular competition is not carried beyond normal limits.

In my judgment, the ideal form of exercise, especially when it can be practiced in the open air, is boxing. All of the faculties are alertly engaged in a boxing bout, and every muscle of the body is put in play without great danger of serious strain if the individual be at all discreet. The game is by no means as rough as is ordinarily supposed, and, contrary to the usual belief, it is in nowise productive of rowdiness. Parents may,

without hesitation, have their sons instructed in boxing with the fullest confidence that the acquirement of the art will not have the slightest tendency to make bullies of them, but, on the contrary, will impart not only confidence in their ability to take care of themselves when necessity demands it, but also a wholesome respect for the rights of others. Boxing and fencing are alike in many ways. Both of these exercises train the eye, cultivate muscular equipoise, increase muscular command, improve the carriage, and impart judgment of distance. The spinal reflex is improved in such a manner that the individual often escapes from serious injury through the automatic reflex action of the voluntary muscles. Movements of the muscles which, primarily, are purely voluntary, become instinctive and automatic after thorough training in boxing, fencing, and, to a certain degree, in wrestling. I recall an incident in which a gentleman saved himself from serious injury by instinctively parrying, with a folded umbrella, a thrust from an iron rod which lay upon the bottom of a wagon that was suddenly backed in his direction. A trick in fencing, which had been learned by careful training of the voluntary action of the muscles, came suddenly and automatically into play in the presence of danger.

The training of the various faculties enumerated must necessarily result in improved brain development, and even though the improvement be chiefly in the direction of the motor centers, the higher centers of the brain must, of necessity, participate in it to a certain degree. Certain ignorant and more or less stupid individuals among wellknown athletes may be quoted in contradiction of this assertion, but it is safe to say that even these individuals are immeasurably superior in intelligence to what they would have been without systematic muscle training. I do not mean by this that extreme muscular development fits one for intellectual work of a high order. As I have already intimated, the contrary is the case. It must be remembered that I am extolling physiologic muscle building and athletics. I am also expatiating upon the effects of certain special forms of athletic exercises, involving increased muscle control and agility. It is hardly conceivable that heavy lifting and other forms of exercise tending to produce merely an increase in muscle bulk and power against weight could do otherwise than inhibit intelligence. The average intelligence of men and women who practise athletics in moderation is certainly higher than that of the mass of humanity.

Fencing is an ideal form of athletics for women, and should be more generally practised than it is at the present time. Lightness and grace, agility, suppleness of muscle, quickness, and a springiness of step are imparted by fencing to a greater degree than by any other form of exercise. It is often impracticable for individuals to secure partners for a boxing or fencing bout. The next best form of exercise under such circumstances is the use of the striking bag. In this form of exercise quickness of muscular movement and of eye are developed, without inordinate muscular strain. The effect in increasing lung capacity and general physical endurance is remarkable.

An important point for consideration in connection with such exercises as boxing, fencing, and handball is that the development of the brain centers and the training of the reflexes thereby acquired is of inestimable value to the subject throughout life. The battle of life is a contest in which one must proceed along the lines of least resistance if he would succeed. He who is quickest to recognize and to remove obstacles from his path with the least expenditure of energy is the most likely to arrive at the goal—success.

Wrestling, if kept within proper bounds, is a safe and beneficial form of exercise, but so long as human nature is as it is, its effects, upon the average, will necessarily be injurious. Violent muscular or visceral

strain and serious traumatic accidents are likely to occur, even when the contestants are good-natured and gentlemanly. Should the slightest element of viciousness enter into the exercise, its dangers are compounded. The most scientific wrestlers in the world are the Japanese. These people make the exercise play or manslaughter at will.

The advantages of ball playing, especially for growing lads, are too familiar to require extended mention. The dangers of this form of exercise are hardly worthy of notice, so far as its indulgence as a form of play is concerned. As a form of professional athletics, it is usually abused, and contains the same elements of danger as other violent forms of professional athletics.

Football as a play game for young lads is usually a safe and beneficial form of exercise. As the game is played between rival teams of adults, both professional and amateur, it is, in my estimation, one of the most dangerous and brutal forms of athletics. The records of the prize-ring are put to the blush by those of the football field, while the statistics of the killed and maimed in the Spanish-American war present a very modest showing when compared with the number of killed and maimed in football games for the last five years. The exigencies of match games necessitate danger to the contestants under the most favorable circumstances, and if, as is usually the case, one or more rowdies are embraced in the personnel of the rival teams, the dangers of the game are greatly enhanced. The temptation to injure a competitor when the act is likely to be undetected or attributed to the exigencies of the game is too great for such individuals to withstand, and so long as the members of the rival teams are merely human, it would be too much to expect that all should be actuated by principles of fairness and decency. It is so easy to plant one's elbow or knee in a vital spot in an opponent in the course of a football scrimmage that certain individuals almost invariably succumb to the temptation. Aside from the danger of rowdyism, there is the tendency of even the fairest minded athlete to lose his self-control under the stress of great excitement.

A moderate indulgence in rowing is one of the best possible forms of physical training in the open air. The bodily movements involved are such that practically all the muscles are brought into play, and, save in contests for speed supremacy, there is little likelihood of overstrain. Even under such circumstances the brunt of the strain is usually borne by the heart rather than by the muscles in general. Boat racing is perhaps the most dangerous to the heart of any form of athletics, and the professional oarsman or over-enthusiastic amateur who escapes cardiac damage is a rarity. Even a superficial observation of the crews of racing barges at the end of a hotly contested race should be sufficient to convince even the intelligent layman of the dangers of boat racing. I recall a case in which a very powerful man was invalidated for nearly two years as a consequence of hepatic and digestive disturbance produced by the strain of a barge race. His illness began immediately the race was over. He was taken from his seat in the barge by his companions, being himself unable to move.

So far as its cardiac effects are concerned, boat racing, to borrow an expression from Hamlet, "cracks" many a heart. A heart which is literally "broken" from overexertion is by no means so rare as is generally supposed—a valve may rupture under violent strain. It is, of course, understood that degeneracy of the heart structure is usually necessary in order that even violent strain should traumatize the organ, but such degeneracy is likely to be present in athletes who continue training until middle life, or past it. It would be just to apply the term "broken heart" to the heart of the athlete, the resistancy and recuperative power of which have become exhausted by overstrain. The heart is broken in the sense that its reserve is gone, and it can no longer meet emergencies. The failing heart of an otherwise

powerful individual under the stress of exhausting diseases, surgical shock or anesthesia, is often thus explained.

It is often necessary to specialize in the direction of pulmonary development while the individual is indulging in any or all of the forms of athletics which have been enumerated. When the proportionate chest development is fair, this is unnecessary, but in many instances the converse is true, and none of the exercises described serves to correct the disproportion. Very light dumb-bells and, when the facilities are at hand, the swinging rings will accomplish the desired result. The latter application is, in my estimation, the best developer of the chest afforded by the gymnasium. The individual who indulges in the swinging exercises necessarily acquires an improved chest development and pulmonary capacity without any effort upon his part other than that involved in swinging by the hands. Light Indian clubs, when scientifically used, have the advantage of being absolutely devoid of danger of overstrain. Their use brings into play every muscle of the body, and imparts grace and suppleness, which are greatly desired.

One of the most valuable forms of indoor exercise is handball. Its practice imparts agility, training of the muscular sense, and quickness of the eye, such as are acquired in very few forms of athletics. There is no strain involved in handball, and athletes who practice outdoor athletics actively during the summer, find no difficulty in keeping in condition by a moderate indulgence in handball during the winter season. When the fad of golf playing first came in vogue, I was very much inclined to ridicule it as a form of physical training. More careful observation, however, of the game has convinced me that it is one of the most valuable fads that has ever come into existence. The necessity of exercise in the open air, and the cheerful companionship involved in the game are at once obvious. So far as its dangers are concerned, it is like all forms of physical exercise. It is likely to be abused by persons whom physical disabilities of various kinds have long since incapacitated for any form of muscular exertion. The fatalities incident to heart disease and sunstroke among golf players should not be charged to the account of the game.

The intelligent application of bathing is absolutely essential to secure the best results from physical training. The stimulus of either very hot or very cold water applied to the skin greatly increases the benefits of muscular exercise. The alternate hot and cold shower gives the best results in some individuals. Great care should be taken not to prolong the bath, and to adapt the temperature and duration to the individual subject.

A stimulating and refreshing effect may always be obtained by the judicious use of the bath. Depression, on the other hand, is quite likely to result if the bath is not used intelligently, physical exercise being thereby rendered injurious rather than beneficial. Brisk rubbing of the skin after the bath is essential.

CONCLUSIONS.

1. The general trend of the profession is toward drug, rather than therapeutic nihilism.

2. Physical training along physiologic lines is an important department of both preventive and curative therapeutics, and should be taught in medical schools. The profession at large is woefully ignorant of the objects and principles of physical training.

3. The physician should endeavor to attain physiologic development, as tending to make a favorable impression on the *morale* of his patients.

4. Such departments of medicine as neurology and surgery, particularly orthopedic surgery, are especially enriched by a knowledge of physical training.

5. The end and aim of physical training should be to utilize the inherent physical capital of the individual and develop it to its normal physiologic standard. The

individual equation is the keynote of physical training. One should strive to develop and make ready to his command such muscular fiber as normally belongs to the individual subject.

6. A general adoption of physiologic muscle building would cause a marked improvement in the physical strength, endurance and beauty of the race. Model physiques are much rarer than they should be.

7. Physical and intellectual development should go hand in hand. Neither should be perfected at the expense of the other. The harmonious development of mind and muscle is the most important factor in human society.

8. A more thorough understanding and more general practice of physical training would tend to reduce pauperism and crime, and would materially decrease the expense of our ponderous legal machinery and penal system.

9. Estimating the developmental necessities and capacity of a given individual by comparative measurements is often fallacious. The idea that an individual of a given height and weight should present definite proportionate measurements of the various portions of the body is absurd.

10. The inherent capacity for muscular development possessed by certain individuals is extreme. The muscular development of a Sandow, under precisely similar conditions, is possible only to Sandow and exceptional individuals of his type.

11. Specialism in muscle building is justifiable only in so far as it tends to bring up any given portion of the body to the relative proportions normal to the particular individual, *i. e.*, to the normal symmetry.

12. In beginning the training of adults the occupation should be considered. The muscles of the highly-trained athlete are out of place, useless and perhaps injurious to the man whose occupation is sedentary. Unused muscular fiber and visceral capacity result in muscular and visceral degeneration.

13. Certain individuals tend to become muscle and joint bound under very moderate exercise, and great care should be taken in prescribing physical training for them.

14. The systematic practice of athletics, when carried to extremes, is likely to develop the athletic habit, *i. e.*, a condition of the body in which cessation of training produces serious impairment of health. Under such circumstances the individual is a slave to training.

15. Athletic overstrain is frequent, and occurs in two forms—acute and chronic. Its evils are manifested, first, in individuals who are out of condition; second, in individuals who, while in condition, undertake inordinate feats.

16. Serious disturbances of the heart, lungs, kidneys and liver may result from overstrain, the heart, especially, being often damaged. Even appendicitis may be produced by athletic overstrain. Competitive athletics, as the term is ordinarily used, are especially dangerous in their effects upon the viscera.

17. The average professional athlete at the age of 30 has exhausted his reserve fund of vitality, and should cease active training and athletic competition.

18. Symmetric muscle building should be a preparation for practical athletics of all kinds. This muscle building should involve increase of volitional muscular control and a development of the muscles up to the individual normal standard, no attempt being made to put large and bulky muscles upon individuals in whom such muscles are not normal. The first lesson the subject should learn is the necessity of putting his brain-cell in absolute command of his muscle fiber.

19. The ideal system of muscle building is that which involves the least expenditure of time, and the use of the least apparatus.

20. Abdominal muscle development is the keynote of success in physical training.

21. Of practical athletics the best forms are boxing, fencing and handball. All forms of athletics are most beneficial if practised in the open air. Golf is admirable in this respect.

22. The element of play should enter largely into all forms of athletics, diversion of mind and cheerful companionship being a *sine qua non* in obtaining the best results.

SPECIAL ARTICLES

SOME PROBLEMS OF PREVENTIVE MEDICINE.¹

BY

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[Concluded from page 127.]

I have by no means exhausted the list of preventable diseases, nor have I gone into all the details of the prevention of those diseases which I have mentioned, being restrained by the limits of this essay. There are numerous other less important diseases which might with propriety be included in a more exhaustive discussion of this subject, and recent researches have even suggested that cancer may yet be shown to be of parasitic origin, and therefore to be placed in the same class.

It will perhaps not be out of place at this time to say something concerning sanitation as a business proposition.

It is strange that it should be so difficult to interest the average citizen in matters concerning preventive medicine and sanitary science. When a man is sick and in fear of death he is ready to give (or to offer) almost anything to be restored to health; when a community is threatened by, or is in the midst of an epidemic, there is no limit to the amount of money it will spend to stamp out the pestilence. When the individual has recovered from his illness, when the community has rid itself of the epidemic, how quickly the bitter lesson is forgotten, how slight the impression it has made!

*"Egrotat demon, monachus tunc esse volebat;
Dæmon convaluit, dæmon ut ante fuit."*

It would seem that the arguments most likely to avail in the efforts of medical men to gain the active cooperation of the public in endeavoring to prevent preventable diseases are arguments addressed to the public pocket, and of such arguments there is surely no lack. Epidemics, both directly in the enormous expenditures of public funds which they entail and the private cost to individuals, and indirectly in their effect on business of all kinds, are expensive. This statement will not be disputed, but it is not so well known that the annual expenditure of a comparatively small amount of money in the improvement of sanitary conditions and in the investigation of sanitary problems would prevent many epidemics and in so doing would make the people not only healthier but at the same time wealthier.

The business which more than any other is directly concerned with the health of the people is the life insurance business, and when we consider the enormous amount of capital invested in this business and the enormous numbers of people, including both the insurers and the insured, who are interested in it, it would seem that life insurance companies might form a powerful combination which would be capable of accomplishing a vast amount of good in this direction. Fire insurance companies have found the support of salvage corps as adjuncts to the regular municipal fire departments to be a very profitable investment; in an analogous but somewhat different way I believe that life insurance companies would find it profitable to use their money and their influence in supporting the work of municipal boards of health, and also, perhaps, in pursuing and maintaining independent investigations of the many problems concerning sanitation which remain yet to be solved.

¹ Read before the Minnesota State Sanitary Association at its annual meeting in St. Paul, December 18, 1902.

The companies pay out annually millions of dollars for death losses which result from preventable diseases. Would it not be profitable from a business point of view alone to spend some of this money in endeavoring to prevent some of these diseases? Of course life insurance companies would be unable, in case they should pursue any such policy as the one suggested, to know just what lives they were saving, and they would probably assist in saving many lives that were not insured. Fire insurance salvage corps assume that all threatened property is insured and endeavor to protect it all; I believe that the life insurance companies could well afford to do the same.

If all the life insurance companies would combine and set aside each year a fund to be devoted to a cooperative investigation of some of the problems of preventive medicine an immense amount of good would be accomplished at an expense which would be trifling to each company, and the direct return to the companies would be very large.

A procedure which I believe has never yet been adopted by any of the life insurance companies would beyond doubt save them many premature death losses and would be of indirect benefit to preventive medicine; I refer to the periodic medical examination of all their policyholders, say once in five, or even once in ten years; by so doing early signs of disease which the applicant was unaware of would be detected, and in many cases appropriate medical treatment would prolong life. It has also been suggested, and the suggestion is a good one, that life insurance companies could strike a severe blow at quackery, and at the same time do a good stroke of business by refusing to insure those who were habitual consumers of patent medicines of unknown composition, and also those who, instead of seeking medical aid when they are sick, resort to christian scientists or other dangerous pretenders. It is a wellknown fact that very many individuals die each year whose lives might have been saved by proper medical treatment, and under the present conditions ignorant and unscrupulous persons, with no pretense to medical knowledge, are permitted in all communities to treat such of the sick as they can induce by persuasive advertisements or in other ways to place themselves in their hands, and there is no disease which they do not attempt to treat. These deaths are preventable, and it is one of the functions of preventive medicine to attempt to prevent them, and as these preventable deaths cause a by no means inconsiderable portion of the death losses which life insurance companies are called upon to pay, we may naturally expect that when they are brought to view the matter in its proper light they will lend a hand.

There are many ways, some of which have been already pointed out, in which the various enormous aggregations of capital which form the bulwark of the world of business can aid the cause of preventive medicine. The great corporations which control these vast sums of money, however, owe their first duty to their stockholders, and nothing can be expected from them for purely philanthropic purposes; but show them how a direct pecuniary benefit can be derived from money expended and this money will be readily forthcoming. The life insurance companies derive a more direct benefit from the prevention of disease than do other large corporations and it will be an easier matter to enlist their direct assistance. Transportation and manufacturing corporations devote much effort and money to the prevention of accidents and are thus aiding the cause of preventive medicine by preventing deaths which might otherwise occur, but I believe that they might readily be persuaded of the economic value of paying more attention to the prevention of disease among their patrons and employes.

An immense service to the cause of preventive medicine has been already begun in some of our large cities, although much remains to be done, in the matter of the more sanitary housing of the laboring classes. A preliminary step to improve the tenement houses would be to make concerted efforts to get as many as possible of their present denizens, especially those who are unsuccessful and discontented in their city life, to take up farming on some of the many millions of acres which are waiting to be tilled. Many of these people are more fitted for a farming than for a city life, and by a little encouragement and assistance they could be sent "back to the soil," where they

could make and maintain for themselves and their families prosperous, happy and healthful homes. This temporary relieving of the congestion, however, although it would be of immense value to the comparatively small number of individuals whose lives would thus be changed, would go but a short way toward solving the real problem. Others would at once rush in to take the places of those who had left and the tenement houses and the slums would be as crowded as ever. The solution of the problem would be to abolish the slums entirely, and to see to it that there are no tenement houses save those which have been constructed and arranged with a proper regard to sanitation, so that those who are forced to inhabit them may at least have the opportunity to enjoy their share of the fresh air and sunshine and pure water which nature offers so freely to all mankind. This is perfectly practicable, and it has been demonstrated time and again that properly constructed tenements for the poor man can be made a paying investment. A vast amount of the preventable disease in all large cities is the result of the unsanitary conditions among the poor, and the presence of these diseases among the poor is a constant menace to the rest of the community.

In order to get the people interested in this reform and to enlist their cooperation, the matter must be brought before them as an economic problem, which it really is, since by far the largest part of the capital of every municipal corporation consists in the lives of its citizens, and surely nothing can be of greater pecuniary value to the corporation than preserving and saving these lives. A very large amount of the vast sums now spent for the support of municipal hospitals and for outdoor relief of the poor would be saved by removing some of the conditions which make this relief necessary.

Hospitals and dispensaries will always be necessary adjuncts of all civilized communities, and most noble is the work that they do, but at the present time medical charity is overdone from two points of view. If a portion of the immense sums of money now annually devoted to the endowment and support of hospitals, both from the public funds and from private beneficence, were diverted and intelligently expended in the cause of preventive medicine, there would be fewer hospitals needed, and if a wiser discretion were exercised in the matter of free medical treatment, the really deserving poor would be given better service.

There are numerous other problems connected with general municipal sanitation which, while lack of space forbids their detailed discussion, deserve at least some mention in an essay such as this. Sanitary reforms are urgently needed not only in the homes of the working people, where they must eat and sleep, but also in many of the shops and workrooms where their days are spent. A brief visit during the busy hours of the day to some of the crowded department stores where hundreds of young men, women and even children spend from 10 to 12 hours every day in poorly lighted, overcrowded and insufficiently ventilated rooms, breathing over and over again the same air, often germ laden and always saturated with bodily exhalations and emanations, will convince any one of the fact that such an atmosphere and such surroundings are far from sanitary. Those who spend their days in these places, however, are in paradise as compared with the lot of those who work in the crowded attics and the dark, damp cellars known by the not inappropriate name of "sweat-shops." Municipalities owe it to their citizens to put an end to such conditions, and all places where large numbers of people are employed should be inspected as to their sanitary conditions from time to time, and the proper authorities should be held responsible for the persistence of the unsanitary conditions which are the direct cause of a very large amount of preventable disease.

Municipal as well as domestic sanitation in many of its phases offers, it seems to me, an excellent field for those women in every community who have the time and the inclination to take up special work aside from their ordinary occupations, and women's clubs which spend much time in the discussion of literary, religious and even political subjects might with great profit to themselves as well as to the communities in which they live devote some of their time and energy to the study of matters of public hygiene. The civic leagues are doing much good work along these lines, their efforts being chiefly directed

toward the beautifying of cities and the cleaning up of back yards and unoccupied property. This is distinctly sanitary work and should be highly commended and encouraged, as it will undoubtedly accomplish much good for the cause of preventive medicine.

The regulation of the smoke nuisance is being demanded in large cities and it is important upon both esthetic and sanitary grounds, and an active campaign by women would start a public sentiment which would go far toward remedying the evil.

Women of the upper classes, who set the fashions for all other women, could also do much for the cause of preventive medicine by making certain changes in their manner of dressing, particularly in regard to the length of the skirt worn out of doors. To see a well dressed and attractive woman trailing a long skirt over a muddy sidewalk and sweeping up the filthy droppings of animals and the still more filthy human excretion which always lies there, is certainly a disgusting sight, and when that same woman goes home and shakes and brushes her skirt, the myriads of microorganisms which she has collected during an afternoon's shopping are freely scattered about the house to be later perhaps inhaled by herself, her husband, and her children. It can hardly be doubted that the germs of disease are thus frequently introduced into the home, and this danger would be lessened if women would never wear long skirts while walking out of doors. The educated and thoughtful women of our communities may in various ways be of immense service to the cause of preventive medicine, but they must first be made to realize the importance of the subject and how by a little intelligent and concerted action on their part they can assist in bringing about the various sanitary reforms which have been discussed in this essay.

Modern civilization and culture irrespective of creed gratefully and without reserve acknowledge their constantly accumulating debt, a debt which could hardly be itemized, to the Church and to Christianity. Without touching upon the other functions and duties of the Church, for our present purpose let us view only its power as an educator, or perhaps better, as a disseminator of education and knowledge. To very many persons there can be no stronger argument to cause them to accept as truth, not to be disputed, a statement or a theory, than the often eloquent and forcible declamation of the pulpit. The motives, too, of pulpit teachings, whatever they be sometimes the case with regard to their logic, are always the purest and the best, having almost invariably in view no other purpose than the honest desire to elevate and to strengthen those to whom they are addressed. To the Church, as a profession, belongs indisputably the high honor that its followers, much less than in any other calling, have selfish ends in view, or a desire for worldly gain. We have good reason to hope, then, that when in common with the other classes of individuals who receive the benefit of a higher education the clergy have their eyes more fully open to the possibilities of preventive medicine their aid will be freely given.

It was recently related in the *London Lancet* that a clergyman expressed to a health officer who was detailed to stamp out an epidemic of smallpox in a country district of England the desire to help, and asked what he could do. "Preach vaccination and revaccination," said the medical man. The next Sunday the clergyman took vaccination for his text, and told his congregation what it had done in the way of preventing smallpox and what smallpox had been before vaccination was known. During the following week the medical men in the parish had all they could attend to to vaccinate those who took the preacher's advice to heart. This is but an instance of what clergymen could do for preventive medicine if they would take the pains to inform themselves concerning preventable diseases, and if they would occasionally, both in their public and their private communications to their parishioners, mingle a little sanitary advice with their religious instruction. At the present time many clergymen, by giving their endorsement to quack methods of treatment and allowing their names to be used by those who advertise quack medicines, are doing great harm to the cause of preventive medicine, and I am inclined to think that if clergymen were less hostile to or less apathetic regarding scientific medicine, they would find more medical men in their congregations. It is time that both science and the Church

laid aside those ancient prejudices which have kept them apart so long and joined hands for the common good of all the people.

From the foregoing it is apparent that while the existing knowledge on the subject of preventive medicine leaves many problems still unsolved an immense amount of preventable disease exists at the present time which could be prevented if a proper application were made of the actual knowledge concerning such disease which is now in the possession of the medical profession. I have stated and reiterated that medical men alone without the cooperation of the people cannot bring to pass these urgently needed reforms, but it is entirely in the power of the medical profession to obtain this cooperation if a properly concerted effort is made to do so; and this brings me to what I believe to be the most important step toward the achievement of the possibilities of preventive medicine,—the organization of the medical profession.

There are at the present time more than 100,000 practitioners of medicine in the United States of America, the majority of whom belong to that class usually spoken of as "regular practitioners," and the rest claiming to belong to some special school or sect which has adopted a distinctive name supposed to define the method of practice of him who bears it. Many of these latter physicians are men of education, refinement, and culture, and all medical men know that their patients are treated according to the principles of modern scientific medicine and that the original significance attached to the name they bear has long since passed away.

The ancient and absurd prejudices which have kept these men apart and which have helped to maintain the so-called "schools of medicine" must be swept away, and dogmas and creeds must be laid aside as having no place in scientific medicine. Until medicine becomes an exact science, which is not at all likely to occur in the near future, there will always be differences of opinion concerning the details of the treatment of disease, but the broad principles of pathology once demonstrated are unchangeable, and are admitted as the basis of treatment by medical men of all shades of opinion. The administration of drugs, except in those few instances in which we possess specifics for certain diseases, is a mere detail in the practise of medicine, and although it often seems all important to the patient, those whose views are at variance concerning this really unimportant detail should no longer remain divided into different schools and factions. The time is coming, and there are not wanting signs that the time is near at hand, when all earnest medical men will gather together under one banner in the cause of scientific honesty and truth. Then we may expect to see the complete organization of the medical profession into a powerful army, which through its leaders can dictate to the people how they shall conduct themselves in all matters of public and private sanitation, and these commands will be heeded. This organization in this country must be accomplished through the American Medical Association, which instead of the 10,000 members which it now has should have 100,000 members, with subsidiary branches in every State and Territory in the United States. The preliminary steps for the accomplishment of this grand scheme have already been taken, and many earnest workers are now engaged in perfecting the machinery.

Truly we are approaching, indeed we have already entered upon, a new era of medicine, and although we advance with sometimes halting steps the advance is constant, and no backward step is taken. The crowning triumph of medical science is not the curing of the sick, or the relieving of pain, although these are the things which most medical men spend their lives in doing; the ultimate goal for which the medical profession is striving is the prevention of disease. Grand and glorious as have been the triumphs of medicine and surgery over existing disease, they must sink into insignificance when compared with those achievements which shall result from a realization of the possibilities of preventive medicine.

Danger in Unsanitary Barber Shops.—James Stettauer, a wealthy financier of Chicago, received a slight cut while being shaved in a barber shop. One or two days later erysipelas became manifest. This disease was followed by an acute nephritis, which resulted in death.

NATIONAL BUREAU OF MEDICINES AND FOODS: FOR PURE AND HONEST DRUGS, CHEMICALS AND FOODSTUFFS.

BY

PHILIP MILLS JONES, M.D.,
of New York.

The idea of establishing a board of qualified experts who should represent the interests and the support of the professions of medicine and pharmacy, and through the medium of such a board secure (1) more general conformity to the standards of the pharmacopeia; (2) drugs and chemicals, and foodstuffs that will be actually as labeled and can be relied upon; and (3) deal in a proper professional and ethical manner with the large and ever-increasing number of proprietary mixtures and preparations that are being presented to the medical profession, was first suggested by Dr. F. E. Stewart at the meeting of the American Medical Association in 1881.

This idea has been elaborated and plans have been formulated which it is thought will secure the objects desired. These plans have been approved by a number of representative manufacturers, physicians and pharmacists, and it is evident that if the professional interests and the people of this country (and especially the members of the American Medical and the American Pharmaceutical Association) really desire relief from the present unfortunate and distressing condition of materia medica and pharmacy, and of adulterated and dishonest foodstuffs, such relief is at hand.

Primarily, this plan contemplates the voluntary association of honest manufacturers and pharmacists who will agree with the board of experts representing medicine and pharmacy upon standards of identity, purity, quality and strength to which their products shall comply, and will further agree to carry out these standards and to comply with the necessary rules governing manufacture, etc.

Organization for the purposes indicated has been begun by the formation of a corporation on the membership plan—no stock issued and not for profit—under the name of the "National Bureau of Medicines and Foods," and all members of the American Medical and the American Pharmaceutical Associations are made members of this bureau. It is proposed that the board of directors governing this bureau be elected by these two associations, each having five directors, one from each association retiring annually and a successor elected for five years.

In order to indicate to the physician, the pharmacist or the purchaser such articles as comply with the standards of identity, purity, quality and strength, and may in consequence be relied upon to conform truthfully with the label affixed, and also to reward the honest manufacturer and pharmacist for his honesty and aid him in competition with dishonest or impure products, those manufacturers and pharmacists who affiliate with the bureau in this work will be authorized to print upon the labels of such of their products as are placed under the supervision of this bureau a certificate of identity, purity, quality and strength of a form to be indicated by the board of directors.

All possible precautions in the way of frequent inspection, analysis, or assay will be taken by the bureau in order to keep certified products up to standard and to protect the bureau certificate from fraud. In addition to the original analysis or inspection of each "batch," every article bearing the bureau certificate will be purchased in open market from time to time and submitted to analysis, assay and comparison with standard samples.

The bureau will also gather and diffuse reliable information relative to materia medica products, chemicals and foodstuffs, and to those who manufacture or deal in the same, and it is believed that in a comparatively short time such information will replace and do away with the one-sided and unreliable trade literature which is at present in many instances the only available source of information.

The work of the bureau will be purely commendatory, and not in any way condemnatory, so that it can in no event become an agent of blackmail.

As the bureau is not a commercial enterprise, is not organized for profit, nor for money-making, only the actual expense of doing the work required will have to be defrayed. It is pro-

posed to assess this actual cost upon the various manufacturers and producers whose goods are certified by the bureau, each in proportion to the amount and value of the goods so certified. This feature of the plan has been considered satisfactory by those who have signified a willingness to affiliate with the bureau.

In addition to the two associations already mentioned any scientific society that may vote to affiliate with the bureau may do so, and its members then become members of the bureau; and further, any person who so desires or who is willing to signify his approval of the aims and objects of the bureau, may become a member upon the payment of \$1.00 per year.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

March 14, 1903. [Vol. XL, No. 11.]

1. Bacteriologic Examination of the Blood During Life in Scarlet Fever with Special Reference to Streptococemia. LUDVIG HEKTOEN.
2. The Glycosuric Symptom of Disease and its Medicinal Treatment. HEINRICH STERN.
3. Some Rare Forms in Chronic Peritonitis Associated with Productive Fibrosis and Hyaline Degeneration. ALBERT G. NICHOLLS.
4. The Growth of the Tubercle Bacillus and Organisms Resembling it on Fruits and Vegetables. M. J. ROSENAU.
5. The Diagnosis of Brain Abscess. HERMAN H. HOPPE.
6. The Diseased Middle Turbinate. CHARLES H. BAKER.
7. Typhoid Fever with Perforation of the Bowel and Recovery. T. K. HOLMES.

1.—**Streptococemia in Scarlet Fever.**—L. Hektoen reviews the literature dealing with the frequency of streptococci in fatal scarlatina and also of studies of the blood during life, describing the technic and results of his own bacteriologic investigations. Streptococci occasionally may be found in the blood of cases that run a short, mild, and uncomplicated clinical course, but occur with relatively greater frequency in the more severe and protracted cases in which there also may develop local complications, and clinical signs of general infection, such as joint inflammations, but even in the grave cases of this kind spontaneous recovery may take place. Streptococci may not be demonstrable in fatal cases. The theory that scarlet fever is a streptococcus disease is not supported by these investigations. An argument for a specific primary infection is the durable immunity entirely different from anything we know of spontaneous or experimental streptococcus diseases. [H.M.]

2.—See *American Medicine*, Vol. III, No. 25, p. 1060.

3.—See *American Medicine*, Vol. III, No. 25, p. 1062.

4.—See *American Medicine*, Vol. III, No. 25, p. 1063.

5.—See *American Medicine*, Vol. III, No. 25, p. 1058.

6.—See *American Medicine*, Vol. III, No. 25, p. 1059.

Boston Medical and Surgical Journal.

March 12, 1903. [Vol. CXLVIII, No. 11.]

1. Limitations of the Uhlenhuth Test for the Differentiation of Human Blood. A. E. AUSTIN.
2. Report of a Series of Cases of Movable Kidney. H. D. CHADWICK.
3. The Composition and Alcoholic Content of Certain Proprietary Foods for the Sick. CHARLES HARRINGTON.
4. A Case of Habitual Dislocation of the Shoulder-Joint. J. COLLINS WARREN.

1.—**Limitations of the Uhlenhuth Test for Differentiation of Human Blood.**—A. E. Austin states that since Uhlenhuth showed that a rabbit or guinea pig injected several times with human blood would give a precipitin for human blood, various efforts and suggestions have been made for providing a "stock" preparation of this humanized rabbit serum ready for immediate use. The author states that his interest was aroused by these efforts to preserve this precipitin. A number of rabbits were injected exactly according to the directions of Uhlenhuth, when he found that the test was not as fully applicable as had been represented, and that only under the most limited conditions could it be employed; that other fluids of the human body, like effusions and exudates, were of little value, and that the fluid from placentas could only be used when it was strictly fresh, and that much longer time and more repeated injections were necessary than we had been led to suppose from the first oversanguine reports of the earlier investigators. His investi-

gations lead him to the belief that the precipitin resides in the hemoglobin rather than in the serum. The author gives in detail the results of his experiments. [A.B.C.]

2.—**Movable Kidney.**—H. D. Chadwick reports a series of 28 cases, 24 females and four males. In 1 man and 3 women the left kidney was movable, in the other 24 cases the right. In 1 woman both kidneys were movable. Ten of the women were married, and 8 had borne children. The author calls particular attention to the fact that many of these patients had been treated by various physicians for years, and some even submitting to gynecologic operations, without the true condition, movable kidney, having been found. Proper treatment in these cases depends on the severity of the symptoms. Palliative treatment in his hands has been unavailing. If symptoms are of sufficient severity to cause semiinvalidism, or even seriously to impair the patient's general health, nephropexy is indicated. Operation was performed in 15 of the above cases, one being a double nephropexy, with satisfactory results except in one case. Good results are as certain in these cases as in suspension of a retroverted uterus. [A.B.C.]

3.—**Alcohol and the Proprietary Foods.**—C. Harrington restricted his analyses to the percentage of alcohol, total solids and mineral matter. The yield of total solids was such as not to warrant expenditure of the time necessary for investigation of the nature of the several constituents. Liquid peptonoids yielded 23.03% by volume of alcohol, 14.91% of total solids, and 0.17% of mineral matter. Panopepton, alcohol, 18.95%; solid matter, 17.99% (including 0.97% of mineral matter). Hemapeptone, alcohol, 10.60%; total solids, 19.54%; mineral matter, 0.37%. Nutritive liquid peptone, alcohol, 14.81%; total solids, 15.20%; mineral matter, 0.69%. Hemaboids, alcohol, 15.81%; total solids, 6.36%; mineral matter, largely iron, 0.62%. Tonic beef, alcohol, 15.58%; residue, 18.16%, including 1.04% of mineral matter. Mulford's predigested beef, alcohol, 19.72%; total solids, 10.39%; mineral matter, 0.20%. The maximum daily administration recommended yields 1.25 ounces of nutriment, and the alcoholic equivalent of about 6 ounces of whisky, which might well be regarded as hardly adequate for an exclusive diet. [H.M.]

4.—**Operation for Habitual Dislocation of the Shoulder-Joint.**—J. Collins Warren reports that a man of 22 during four years had suffered a number of dislocations at the left shoulder-joint. Operation was performed in October, 1901. The tendon of the pectoralis minor was divided for the greater part of its extent. The capsule was exposed and a piece one inch in length by three-quarters inch in breadth was excised. The edges were approximated with silk sutures, putting the capsule on the stretch. Recovery was uneventful and now more than two years after the operation there has been no subsequent dislocation. [A.B.C.]

Medical Record.

March 14, 1903. [Vol. 63, No. 11.]

1. Some Observations on Vulvovaginitis in Children (with Special Reference to the Gonorrhoeal Form): Its Treatment and Possible Sequels. SAMUEL WYLLIS BANDLER.
2. Clinical Notes on a Series of Nine Consecutive Cases of Ectopic Gestation. HIRAM N. VINEBERG.
3. Mosquitos, Quarantine, and Some Statistics with Regard to Yellow Fever. QUITMAN KOHNKE.
4. The Indications for Opening the Pars Mastoidea. L. D. BROSE.
5. Hot Decinormal Salt Solution Injections in the Treatment of Hemorrhoids. LUCIEN LOFTON.

1.—**Purulent Vulvovaginitis in Children.**—S. W. Bandler thinks that the purulent vulvovaginitis in children in the majority of cases is due to the gonococcus, but sometimes to another small coccus found intracellular. A small Ferguson speculum is best adapted for examining the condition of the vaginal walls in a child. The best daily ambulatory treatment for this condition is (1) irrigation by boracic solution; (2) injection of protargol solution into the speculum; (3) washing the entire length of the vaginal canal with the aid of the speculum; (4) the introduction of the protargol stick; (5) the subsequent use of strong silver solution if necessary. If, however, one is dealing with an invasion of vagina and cervix, an absolute essential to a certain cure is rest in bed. By almost daily treatment a cure generally results within 6 to 12 weeks.

The importance of the sequels of vulvovaginitis is due to the fact that all the lesions of the adult may be reproduced in the child and a permanent injury to be avoided is one or other of the forms of atresia of the hymen or of the vagina. Atresia of hymen or vagina has generally been viewed as congenital, but the investigations of Nagel and Velt show that with a normal uterine canal it is usually acquired. Piering divided the acquired stenosis and atresia into traumatic, inflammatory, chemical, and thermal, the first two being the important ones. Bandler thinks that atresia in its various forms may occur as a sequence to gonorrhoea, to the milder forms of vulvovaginitis, or with or after various infectious diseases, most frequently after typhoid fever and scarlatina. The pathology of these different conditions is fully discussed in the paper. [w.k.]

2.—Ectopic Gestation.—H. N. Vineberg gives a clinical history of nine cases of ectopic gestation, the last one in its onset closely resembling an attack of acute appendicitis. In all but two there was more or less elevation of temperature. In two cases the temperature had reached 102.6°, and in one case it rose to 103.8°. It is generally taught that in the differential diagnosis between inflammatory disease of the adnexa and ectopic pregnancy the thermometer is of great aid, and that it usually shows an absence of fever in the latter condition. A series of cases like the foregoing disproves such teaching. It is evident, therefore, that we still have a good deal to learn in ectopic pregnancy, even from the clinical side. [w.k.]

3.—Mosquitos, Quarantine, and Yellow Fever.—Q. Kohnke, in criticising the position taken by Dr. Souchon, states that he believes that all quarantines in so far as they have been successful have been so because they prevented the entrance of infected mosquitos. He believes that the early date of introduction and number of mosquitos present—not the special virulence of individual cases—determined the extent of yellow fever epidemics in the past. The vagaries of quarantine service, actuated by an exaggerated fear of infection at one time and the interests of commerce at another, may well account for some of the phenomena of visitations improperly attributed to other causes. Kohnke illustrates the unreliability of statistics by presenting two differing records, this unreliability making five deductions valueless. He answers the assertion that the exemption of New Orleans from 1884 to 1897 was accomplished without any precautions being taken against mosquitos by showing that 40 days' detention was required in 1884, infected mosquitos probably dying in quarantine, and that from 1885 to 1895 sulfur fumigation was practised, and when this was abolished that yellow fever appeared in November of 1895 and October of 1896. [H.M.]

4.—Indications for Mastoid Operation.—L. D. Brose says operation is indicated in acute abscess of the mastoid: for any pus retention that cannot otherwise be relieved; external abscess formation with fistulous opening leading into the middle ear or mastoid, especially if occurring in an adult; cholesteatoma in the temporal bone; caries and necrosis; brain abscess; intracranial collections of pus, etc. As evidence of the necessity for operation in cases of caries, a case is reported by the author. The caries caused an acute mastoiditis, which terminated fatally. The paper is somewhat exhaustive, dealing particularly with the symptomatology in the conditions. [A.B.C.]

5.—Hypodermic Injections of Hot Salt Solution in the Treatment of Hemorrhoids.—Lucien Lofton reports the results of this treatment in 17 cases of hemorrhoids of the various kinds—external, mixed and internal. From one to two drams is injected hypodermically into each bag or hemorrhoidal protuberance. Gradual sloughing and disintegration takes place, healing by granulation occurs, no evil effects resulting. The solution is injected while hot—almost boiling—the exact temperature not being specified. The author knows of no one having used this treatment previous to his own efforts, and he hopes the profession will give the method a trial. [A.B.C.]

New York Medical Journal.

March 7, 1903. [VOL. LXXVII, No. 10.]

1. Some Scientific and Practical Aspects of Vaccination. P. H. BRYCE.
2. The Present Method of Medical School Inspection in New York. CHARLES HERRMAN.

3. Uterine Inertia: Its Causes and Treatment. JAMES MORAN.
4. Incomplete Transverse Congenital Occlusion of the Vagina, and a Theory as to Its Origin. SAMUEL M. BRICKNER.
5. Expression of the Lid Margin as a Therapeutic Measure in Blepharitis and Its Complications. PERCY FRIDENBERG.
6. The Detection of Renal and Vesical Calculi by Means of the X-rays. HENRY PERKINS MOSELEY.
7. A Case of Abnormal Temperature. LUCIEN LOFTON.

1.—Vaccination.—P. H. Bryce reviews the subject of vaccination and says that he believes the opposition to the operation lies primarily in the fact that vaccination laws are compulsory. He shows the necessity of such legislation, but also insists that we must be prepared to accept the fullest responsibility for the position taken, which must be that, if we insist on compulsion, we shall not through indifference or neglect allow anything to exist or take place by which any element of danger can enter into the results of the operation. He says that it is the conclusion of official opinion (1) that official supervision of the products of vaccine establishments by either State or Federal officers is imperatively demanded; (2) or that the production in State or Federal vaccine establishments of adequate supplies of vaccine of established quality to be sent out free or at cost to municipalities has become a necessity. He believes that no matter which scheme is adopted there is demanded before anything else adequate legislation whereby from year to year qualified public vaccinators must be appointed in every municipality who shall be empowered to vaccinate systematically and register all children born in any year. [C.A.O.]

2.—The present method of medical school inspection in New York is given by Charles Herrman. There are at present 80 medical school inspectors in the borough of Manhattan, each having three or four schools, with a total of 4,000 to 5,000 children to inspect. The inspector visits his schools before 10 a.m. every morning and examines, in a room set aside for that purpose, all pupils who have been isolated by the teachers as being possible sources of contagion. Once a week the inspector visits the class-rooms and examines each pupil. As he is seated at the window the children pass in line before him. Special attention is paid to the examination of the head, face, eyes, mouth, and throat. At the end of each week those pupils who have been absent for three or more days on account of sickness are visited and the character of the disease determined. [C.A.O.]

3.—Uterine Inertia.—James Moran enumerates the following most common causes of uterine inertia: 1. Distended bladder and rectum. 2. Paralysis of the uterus due to overdistention by the liquor amnii. 3. Rigidity of the cervix (and vagina). 4. A relaxed and pendulous abdomen. 5. The bearing of many children in rapid succession. 6. Premature rupture of the membranes and escape of the water, causing dry labor. 7. Prolonged pressure on the anterior lip of the cervix between the child's head and the pubic bone; this condition causes continued contraction of the os and the physician may mistake it for a rigid os. 8. The uterus may be weakened by wasting diseases and fevers or by profuse hemorrhage. 9. Deformed pelvis or in cases in which the child's head is out of proportion to the birth canal. 10. Carcinoma of the cervix, uterine tumors, and ovarian cysts. When the inertia is due to an overdistended uterus the membrane should be punctured and the excess of water allowed to escape. If it is due to having several children in rapid succession hypodermics of strychnin act well. In primary uterine inertia (or weak labor pains) if the os is rigid he gives 15 grains of chloral by the rectum every 20 minutes until three or four doses have been taken. He also gives hypodermic injections of morphin in doses of from $\frac{1}{4}$ to $\frac{1}{2}$ of a grain. In a few cases he has applied a 10% solution of cocaine to the cervix with good results. When the os is well dilated he gives strychnin and whisky and repeats in two hours if necessary. In cases of secondary uterine inertia it is necessary for the patient to secure sleep. To produce this from $\frac{1}{2}$ to $\frac{1}{2}$ of a grain of morphin with 30 grains of potassium bromid and 15 grains of chloral may be given, preceded by an egg-nog or milk punch. If the pains do not return after rest with sufficient force to complete labor it will be advisable to apply forceps or do version. [C.A.O.]

4.—Congenital Occlusion of the Vagina.—S. M. Brickner

reports four cases of incomplete transverse occlusion of the vagina. The condition is rare, occurring in about 1 in 5,000 cases. The transverse septa are derived from an inclusion by Müller's ducts of cells from the Wolffian duct or ducts after the formation of the genital cord, and are therefore epiblastic in origin. Their perforation is proof of the normal conduct of Müller's ducts in all other respects. Transverse septa of the vagina being normal in adult sheep, whales, dugongs, the manatee, and the chimpanzee, the author states that they represent in the human being a reversion, "a return to an ancestral type." Their function is purely speculative, but may have to do with the facilitation of conception; and when they appear in the human female may have a similar purpose in harmony with other minor defects of development. The treatment of this condition is excision of the septum with suturing of the cut edges. In unmarried women no treatment is necessary. If the septum is first seen early in pregnancy, it may be excised; if during labor, a crucial incision will be sufficient with subsequent removal of the septum. The prognosis for the child is usually bad, unless the septum is incised early, or unless it is not too strong to be burst by the advancing head; for the mother it may result in serious lacerations or fatal hemorrhage. [C.A.O.]

5.—Lid Expression in Blepharitis.—Percy Fridenberg calls attention to expression of the lid margin as a therapeutic measure in blepharitis and its complications. In the first case reported the condition of the lid margin was so evidently one of pus retention that expression and massage were performed as a cleansing procedure preliminary to making local applications. The improvement was so marked and prompt that mechanical treatment was made a routine measure with excellent results. It is now a part of routine treatment to express, massage, and disinfect the lid margin in all cases of superficial inflammation in which there was the slightest evidence of retention. [C.A.O.]

6.—Röntgen Ray Diagnosis of Calculi.—H. P. Moseley says that radiographic examination is the only positive means of detecting the presence of renal or vesical calculi by the x-rays. Good radiographs are necessary. Negatives are satisfactory only when the negative shows (a) good differentiation between the various tissues; (b) the outlines of the vertebral bodies, the intervertebral spaces, the transverse and spinous processes; (c) the last ribs, and (d) the psoas, iliacus and quadratus lumborum muscles. Two radiographs should be made and compared before any opinion can be formulated, and it is very necessary also to consider the clinical history of the case. To prevent errors due to shadows of pits or fruit stones and to increase the permeability of the abdomen to the rays, the gastrointestinal tract should be prepared almost as carefully as for a celiotomy. Calculi of oxalates, phosphates and the combinations of the different urinary salts usually give good shadows. [C.A.O.]

Medical News.

March 14, 1903. [Vol. 82, No. 11.]

1. The Etiology of Colds. JAMES J. WALSH.
2. Surgical Treatment in Nonmalignant Diseases of the Stomach: Results and Indications. HENRI HARTMANN.
3. The Etiology of Ectopic Gestation. SAMUEL WYLLIS BANDLER.
4. Apparent Fetal Substitution; Medicolegal Note. ALLEN J. SMITH.
5. The Elective System in Medical Schools. DANIEL N. EISENDRATH.
6. The Symptomatology of Tabes: An Analysis of 140 Cases of Locomotor Ataxia. (Concluded.) JOSEPH COLLINS.
7. Primary Tuberculosis of the Ear Followed by Mastoiditis: Report of Four Cases. M. A. GOLDSTEIN.

1.—Etiology of Colds.—J. J. Walsh gives the predisposing causes as draughts, nasal hypertrophies and deformities, lack of sufficient humidity in artificially heated rooms, and breathing through the mouth during severe exercise, which allows free access of cold air. Everything points to germ invasion as the exciting cause. He emphasizes the necessity of cleansing and disinfecting places of public assembly. Treatment consists in measures to eliminate the toxin from the blood. [H.M.]

2.—Surgical Treatment in Nonmalignant Diseases of the Stomach.—Henri Hartmann, of Paris, reports a series of 60 cases operated upon as follows: Three pylorotomies; 1 excision of ulcer of the lesser curvature; 1 resection of a band constrict-

ing the pylorus; 1 duodenostomy in a case of inflammatory and ulcerative lesions due to burns; 1 gastrorrhaphy and gastropepy combined; 53 gastroenterostomies. There was a mortality of 16½%. Statistics divided into two periods show a marked difference in mortality. In 23 cases operated upon from 1895 to 1899 there was a mortality of 26%; whereas in 37 cases from 1900 to 1902 there was a mortality of 10½%. Remote results were ascertained from 29 patients operated upon for from one to six years. One pylorotomy well after 18 months; 1 combined gastropepy and gastrorrhaphy well after two years; of 18 gastroenterostomies 16 were cured. The author insists that the mortality in the operations for nonmalignant diseases of the stomach depends almost entirely upon the physician and the early diagnosis. [A.B.C.]

3.—Etiology of Ectopic Gestation.—S. W. Bandler, in considering the history of those cases of ectopic gestation which have been closely noted, finds that it occurs most frequently in multiparas; that a sterile period of varying length precedes this pathologic development; and that during this period the tubes have usually suffered some inflammatory processes. The observation and studies of Duhrssen, Veit and others on this subject lead us at the present day to seek in the microscopic changes of the tubal mucosa, *i. e.*, injury to the cilia, the etiologic factor in tubal gestation. [W.K.]

5.—Elective System in Medical Schools.—D. N. Eisen-drath believes this should be generally introduced, that it would wake up those of the teaching force whom compulsory attendance has made negligent, and prevent the graduation of automatons who have been made such by overcrowding and resultant confusion of ideas. [H.M.]

6.—Symptomatology of Tabes.—J. Collins classifies the various types of tabes as (1) neuralgic; (2) that in which disturbance of the sympathetic system predominates; (3) that with predominance of motor symptoms; (4) with early optic symptoms; (5) cervical or high tabes; (6) slow development of disease; (7) precipitate development; (8) cases with cerebral symptoms not paresis. The subjective symptoms are variable, the objective constant. The prognosis varies with the clinical form. He reports cases illustrating each form. In studying the initial symptoms he finds that the patient gives not the first but merely those which have prompted him to consult a physician. Pain was the initial symptom in only 40% of his cases, while it was noted in the course of the disease in 90%. The following shows the percentage of the frequency of the most conspicuous subjective and objective symptoms in 140 cases: Lancinating pain, 90; Romberg's sign, 85; loss of Achilles-jerk, 88; loss of knee-jerk, 84; Argyll-Robertson pupil, 77; ataxia of gait, 73; hypotonia, 72; paresthesia, 73; anesthesia, 67; analgesia, 58; bladder symptoms, 55; impotency, 50; crises, 20; ocular paralysis, 10; arthropathies, 5; trophic symptoms, 8; optic atrophy, 14; girdle sensation, 30; impairment of deep sensibility, 63; diplopia, 22. [H.M.]

7.—Primary Tuberculosis of the Middle Ear Followed by Mastoiditis.—M. A. Goldstein reviews the literature on the subject and reports four cases. He believes in each of these cases the disease was primary in the middle ear. Of these four cases three involved the mastoid cells extensively, and showed an unusually active and rapid invasion. All developed from a preexisting suppurative chronic otitis media, and appeared as direct infection by *Bacillus tuberculosis*. In the three cases in which the mastoid operation was performed the wounds healed by firm granulations, and all evidences of tuberculous trouble ceased. This is in direct contrast to the healing of wounds in which the systemic tuberculous invasion is present. Each of these cases pointed to definitely localized specific infection of the cavum tympanum and mastoid cells, with the definite demonstration of *Bacillus tuberculosis* in each case. [A.B.C.]

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1. Tropical Diseases: Eighth Lecture in a Course on Tropical Diseases. CHAS. F. KIEFFER.
2. Occlusion of the Superior Temporal Artery of the Retina in a Young Anemic Girl. G. E. DESCHWEINITZ.
3. Collective Investigation Concerning the Value of Silver Nitrate Injections in the Treatment of Pulmonary Tuberculosis. THOMAS J. MAYS.

4. Some Points in the Management of Infectious Diseases. A. G. YOUNG.
5. The Treatment of Tropical Dysentery with Sulfur. T. H. WEISENBURG.

1.—**Tropical Diseases.**—Charles F. Kieffer considers the filarias and the diseases caused by these parasites. [F.C.H.]

2.—**Occlusion of the Superior Temporal Artery of the Retina in a Young Anemic Girl.**—G. E. deSchweinitz presents this case as a contribution to the literature of alterations in the vessels of the retina which result in stoppage of the bloodcurrent. The case is that of an American girl, 15 years of age. The visual field was obliterated in its lower and inner quadrant, elsewhere it was normal. The ophthalmoscopic lesions in the case evidently consisted of an occlusion of the upper temporal branch of the superior division of the central artery and beyond a large area of exudate, and beyond this again interruption of the branch curving above the macular region, followed still later by complete conversion of the larger stem of the vessel into a white cord and disappearance of its peripheral ramifications, associated with gradual subsidence of the exudate and the formation of a lozenge-shaped area of atrophy and pigment heaping. [F.C.H.]

3.—**Silver Nitrate Injections in the Treatment of Pulmonary Tuberculosis.**—Thomas J. Mays details the results obtained in treating 55 cases of pulmonary tuberculosis with silver nitrate injection and considers that the therapeutic results which have been obtained proves that the silver nitrate injections possess a decided antagonism to the pathologic and complex process which we know as pulmonary tuberculosis. The cough very frequently yields immediately to the injections; vomiting is either entirely relieved or abated in most of the cases in which it is found; in the majority of instances of night-sweats they are improved, while in a certain percent they cease; the improvement in general strength at times is decided and rapid gain in weight occurs, sometimes to an unexpected degree. [F.C.H.]

4.—**Some Points on the Management of Infectious Diseases.**—A. G. Young lays stress upon the value of a diagnosis in all infectious diseases. Unless cases of pulmonary tuberculosis, diphtheria, measles, scarlet fever, typhoid fever, whoopingcough, cerebrospinal meningitis, smallpox, cholera and typhus fever are reported to the local board of health no efficient measures against the spread of the disease are observed in 90% or more of the cases. The two most potent factors in the spread of scarlet fever are mild cases which do not come to the knowledge of the physicians and health officers, and the failure to maintain isolation until the very end of the period of desquamation, until the hands and feet are entirely smooth. [F.C.H.]

5.—**The Treatment of Tropical Dysentery with Sulfur.**—T. H. Weisenburg details the value of sulfur in the treatment of tropical dysentery as observed in a series of cases under treatment at a large effervescing sulfur spring in the island of Marinduque, P. I. It may also be interesting to record that dhobic itch, the ever-present skin malady of the tropics, rapidly disappeared as a result of the baths. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

REVIEW OF LITERATURE

Congenital Elephantiasis.—After considering the literature concerning elephantiasis, Bernhard and Blumenthal¹ report the case of a child of two years, afflicted with the disease, confined to the penis and the left lower extremity, the latter existing at birth. A phimosis operation was performed when the child was two weeks old, after which the diseased state of the parts became much more marked. They give a minute description of the penis and limb; much of the deformed tissue of the penis was excised. This was followed by gradual and general improvement of the parts. The interesting points of the case are: Its similarity to the picture of acquired elephantiasis; the proliferation and enlargement of the lymph vessels

among the proliferated connective tissue; a diagnosis of elephantiasis could not be made without the microscope; the furrows present are not amniotic, but correspond to the normal attachment of the fascia; the condition could not be traced to either heredity or inflammatory influences, nor did a bacteriologic examination reveal the cause of the disease. The case must be considered one of congenital lymphangioma. [E.L.]

A Clinical Study of Beriberi.—Bailey¹ writes an instructive article on this disease, based on observations of cases in the Japanese settlement at Cumberland, B. C., where 40 to 50 cases occur yearly. Nearby, in practically the same surroundings, is a Chinese village, but these people are never attacked by the disease. The diet of the Japanese consists mostly of rice, fish, milk, and eggs, with a few fresh vegetables. The people are employed in and about coal mines, in logging camps, salmon fisheries, etc. Beriberi is present among them at all seasons of the year. A detailed synopsis of the symptoms of 23 cases that occurred during 1900 accompanies the article. There was one female and 22 males. As to age, 12 were under 30 years, the oldest being 43, the youngest 19. All made good recoveries, 21 being office patients when first seen. Treatment consisted in change of diet, rice being forbidden, and meat and eggs recommended. A cathartic was given at the outset, and repeated as required. Five grain Bland's pill and strychnia were given t.i.d., with electricity and massage where there was paralysis. [A.G.E.]

Human and Bovine Tuberculosis.—Raw² states that there are two distinct varieties of tuberculosis affecting the human body—one produced by human tubercle, the other produced by bovine tubercle; that human and bovine tuberculosis are separate and distinct; that bovine tuberculosis entering the alimentary canal in milk may set up tabes mesentericus, more especially in children; that bovine tuberculosis is probably the cause of enlarged lymph glands, tuberculous joints, and lupus; that true human tuberculosis of phthisis pulmonalis is always conveyed from one person to another by infection, and generally from advanced cases of phthisis; that every effort should be made to stamp out tuberculosis in cattle; and that milk should be boiled before use by children. [A.O.J.K.]

Spontaneous Levulosuria and Levulosemia.—For some time it has been known that diabetic urine frequently contains other carbohydrates beside glucose or dextrose. Rosin and Labaud³ have studied the occurrence of levulose or fruit sugar in the urine, and have found it in appreciable amount not only in the urine of many diabetic patients, but also in their blood. They therefore maintain that levulose plays an important role in the carbohydrate metabolism of diabetics, and is worthy of further study. The test most depended on by them for the qualitative demonstration of levulosuria is that of Seliwanoff. It consists in the production of a brilliant red coloration when equal parts of urine and fuming hydrochloric acid are heated with a few crystals of resorcin. The quantitative determination is also described in detail. A case is reported in which the amount of grape sugar was so small in comparison with that of fruit sugar that the case might well be called one of levulosuria rather than glycosuria. Such cases have not been reported previously, but it is probable that they are not infrequent. The question as to the cause of levulosemia and levulosuria cannot yet be answered, and must be left open for further investigation. [B.K.]

A True Aneurysm of the Right Sinus of Valsalva.—Kraus⁴ reviews the literature and reports a case in which the patient died of a true aneurysm of the right sinus of Valsalva rupturing into the right ventricle. This condition is very rare. The patient, a young man of 27, had been perfectly healthy until four years ago, when he overexerted himself during his military service. At that time he experienced palpitation of the heart with dyspnea, but no pain. Since then the dyspnea grew worse and he developed cyanosis, edema, and hemoptysis. Examination showed the apex beat to be diffuse and situated in the sixth interspace, 2 cm. outside of the maxillary line. There was a systolic thrill in the second interspace, and a slow,

¹ Northwest Medicine, February, 1903.

² British Medical Journal, 1903, 1, 247.

³ Zeitschrift für Klin. Med., Bd. 47, Hft. 1 and 2.

⁴ Berliner klinische Wochenschrift, December 15, 1902.

¹ Deutsche medicinische Wochenschrift, December 11, 1902.

loud and rough bruit over the sternum. The Röntgen rays failed to show an aneurysm. At autopsy, including the ruptured aneurysm, the heart showed hypertrophy and dilation. [W.E.R.]

Bacilluria and Cystitis in Typhoid Fever, and the Action of Urotropin Thereon.—H. E. J. Biss¹ thinks the frequency and importance of bacilluria have not been adequately grasped, and cystitis in typhoid is not uncommon. If turbidity be due to bacillary particles a shimmer is seen if the liquid is whirled in a test-tube. In a series of 311 cases of typhoid, he found bacilluria in 18 and cystitis in 13. Bacteriologic examination would probably have increased the cases of bacilluria to one-fourth of the total. Cystitis results from specific infection, or from retention with perhaps unclean catheterization. There is little connection between severity of attack and either complication. Bacilluria occurs on an average about the forty-third day, and has been delayed till the one hundred and eighteenth. Bacteriuria in typhoid is not always specific. *B. coli* and pyogenic cocci may be the causal organisms, but for practical purposes all cases should be treated as infectious and urotropin administered. No serious effects have ever followed its use. A slight irritation and hematuria occasionally brought on have passed off when it was discontinued. It should be given as soon as the urine becomes cloudy, at frequent and equally distributed intervals, and in sufficiently large doses, and be kept up for a considerable period after the cessation of the condition to avoid relapse. On account of expense, Biss gives it in 5-grain doses every eight hours, on alternate days, as a routine method. [H.M.]

An Improved Method for the Microscopic Diagnosis of Malarial Fever.—Ross² advocates the spreading of a thick drop of blood, which having been perfectly dried in the air is covered with an aqueous solution of eosin for 15 minutes. As the film of blood has not been fixed, the solution of eosin takes out the hemoglobin of the dried corpuscles, and at the same time stains the residual mass, consisting of the stroma of the corpuscles, the leukocytes, platelets, and parasites. The eosin is washed off with a gentle stream of water, and the preparation is then covered with a weak solution of methylene-blue (Romanowsky stain) for a few seconds. This being washed off, the preparation is dried, and mounted in Canada balsam. The preparation containing no hemoglobin permits of the ready detection of parasites, and as the preparation contains 20 times as much blood in a given space as the ordinary blood film, the detection of even few parasites is much facilitated. [A.O.J.K.]

A New Variety of Diphtheria Serum.—Diphtheria antitoxin neutralizes the toxin of the diphtheria bacillus, but does not influence the diphtheria bacillus. Wassermann's³ experiments tend to produce a serum which will act directly on the body of the bacillus. He injected from 2 to 4 cc. of a solution of dead diphtheria bacilli, which he prepared according to the method of Aaronson, and to which he had added sufficient antitoxin to neutralize the toxin still present, into the veins of rabbits. He succeeded in producing a serum which, when added to a culture of diphtheria bacilli, brought about their precipitation, an action not possessed by the antitoxin. He concludes from this that the preparation of a serum does not depend upon the biologic peculiarity of the bacteria in question, but rather upon the substances (bacteria or toxin) used in the treatment of the animals. With this serum it may be possible to differentiate between the true and the pseudodiphtheria bacilli. By combining this serum with antitoxin in the treatment of diphtheria, we may be able to produce a cure quicker, and especially will it be of use in cases in which the diphtheria bacilli remain in the throat long after the patient has recovered. [E.L.]

Acute Leukemia of the Hemorrhagic Form.—A case of hemorrhagic leukemia has been observed by Hayem and Bensaude.⁴ The patient was a woman of 60, who for some time had inexplicable lassitude. Gastrointestinal disturbances finally appeared and, during the last 15 days, fever and multiple hemorrhages, cutaneous, mucous and visceral. Epistaxis and metrorrhagia were moderate but hematuria was severe. There

was no enlargement of liver, spleen, nor lymph nodes. The course of the disease lasted about three months. In blood removed before death coagulation occurred in ten minutes, but at the end of 24 hours the clot had not retracted and no serum had exuded. With this was associated a diminution in the number of hematoblasts. [A.G.E.]

Bence-Jones Albumosuria.—Anders and Boston¹ report three cases of Bence-Jones albumosuria, detail the reactions of the substance, and give a valuable bibliography. They state that Bence-Jones albumose is a body more or less allied to peptones, globin, histon, and the digestive albumoses, but it displays certain characteristics unknown to these substances. It is a normal constituent of spermatic fluid, and may be found in the bone-marrow in cases of myeloma. When present in the urine it is valuable as a diagnostic feature in cases of obscure multiple myeloma in which no other symptoms of the disease exist. It also serves in differentiating multiple myeloma from other bone lesions, as carcinoma, sarcoma, osteomalacia, etc. Albumosuria, if continuous, is of grave prognostic significance, and but a single exception is recorded wherein the disease has not proved fatal in less than two years. When the albumose has persisted for some time, its disappearance signifies approaching danger, and probably an early fatal issue. Since serum albumin is a common coexistent of Bence-Jones albumose, its disappearance from such urine may also presage complications of a serious character. [A.O.J.K.]

The Relation of Mental Symptoms to Bodily Disease.—N. Raw² in discussing these symptoms limits himself to temporary disturbances. The diseases in which curious mental states are observed are chiefly those of the heart, lungs and stomach. In phthisis pulmonalis the mental symptoms are often pronounced, depression, irritability and even delusions developing, the latter disappearing with the arrest of the phthisis. Hallucinations, wild delirium, or exaltation of feeling, appear during failing compensation in heart disease. The physician must not treat his patient as a hysteric or a lunatic. In the gouty contracted kidney, especially in young adults, acute mania is not uncommon. Patients have been sent to asylums as lunatics in the early stages of uremic poisoning. In gout we find the extremes of maniacal excitement and profound melancholia. In acute attacks the patient may be so irritable as to be unapproachable. In exophthalmic goiter delusions of impending danger and suspicion develop. In myxedema there is slowness of perception and conduction, and either mania or melancholia may occur. In diabetes irritability and sometimes suspicious delusions come on. In chorea we find constant fear and occasionally acute mania. Patients with pneumonia are liable to sudden frenzy. Too often a patient exhibiting mental symptoms is certified and sent to a lunatic asylum. These swell the recovery rate. They are not really insane, and it would be to the public advantage to treat them in a hospital for mental diseases, with expert physicians and a clinic of students, and where the patient and his family might be spared the stigma of his having been detained in an asylum as a lunatic. [H.M.]

Unilateral Conformation Errors of Thorax and Corresponding Upper Extremity.—In a case described by Schoedel³ the sternocostal portion of the pectoralis major, the pectoralis minor, and a small part of the third costal cartilage were missing; the corresponding upper extremity shows muscular atrophy, syndactyly and brachidactyly. He has collected the literature on the subject, and concludes the deformity to be congenital, mechanical influences between the sixth and ninth week of fetal life producing it. [E.L.]

Some Problems of Tuberculosis.—Under this title Curtin⁴ discusses three subjects: (1) The attitude of the State and the public toward resorts for tuberculous subjects; (2) the attitude of the physician toward marriage between tuberculous subjects; (3) pulmonary birthmarks versus the contagiousness of pulmonary tuberculosis. Regarding the first point he believes that a locality which can cure the disease can purge itself from any contaminating influence remaining after-

¹ Edinburgh Medical Journal, October, 1902.

² Lancet, 1903, 1, 86.

³ Deutsche medicinische Wochenschrift, October 30, 1902.

⁴ La Médecine Moderne, February 18, 1903.

¹ Lancet, 1903, 1, 93.

² Liverpool Medico-Chirurgical Journal, October, 1902.

³ Jahrbuch für Kinderheilkunde, 1902, Vol. lvi, p. 11.

⁴ Medicine, February, 1903.

ward. As to the second, it is useless and unwise to enact laws that it would be absolutely impossible to enforce. By pulmonary birthmark Curtin means the pulmonary lesions or scars in unusual situations which are transmitted to the progeny of persons with diseased lungs. He has observed that in a number of families in which either the father or mother had physical signs of tuberculous disease situated in unusual localities in either lung, especially if the disease occurred in early life, the children, although apparently healthy, would present physical signs of defect in localities precisely corresponding with those in the diseased parent. Four instances of this condition are detailed. Instances of what is called cured apical tuberculosis, so frequently found in postmortem-rooms, may have some connection with such a condition as was found in Case II, where a child was marked in utero by the latent disease in his mother. [A.G.E.]

The Value of Boracic Acid and Borax in the Preservation of Meats.—Boehm¹ says that boracic acid and borax when introduced into the animal organism in considerable quantities are deleterious to the health, and should therefore never be used as preservative agents for meats. [E.L.]

A Curative Serum for Combating Morphin Poisoning and Similar Intoxications.—Hirschlaff² discusses the theories concerned in immunizing animals against the ill-effects of the different poisonous drugs. He describes in detail a series of experiments performed on mice and rabbits that led to the discovery of a successful antimorphin serum. By gradually increasing the dose of morphin in animals, a resistive substance is obtained, which, when injected into other animals, will cause immunity to the action of morphin poison. Hirschlaff tried his serum on a patient who had taken double the fatal dose of morphin. Two injections were given and in eight hours all symptoms of poisoning had disappeared. Several chronic cases were treated in a like manner with excellent results. [W.E.R.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

EDITORIAL COMMENT

Joint Disease and Hemophilia.—The occurrence of chronic inflammations as a result of bleeding into joints in patients with a hemorrhagic diathesis was first noted by König several years ago, but still frequently passes unrecognized. Though one of the more unusual forms of joint affection it is met with frequently enough so that its occurrence should always be kept in mind. This is especially important from the fact that operation, which might seem indicated if the condition was not understood, is necessarily attended by such disastrous results. Carless,³ in a paper on surgical affections of joints, quotes statistics of Poillet, of Lyons, who has analyzed 252 cases collected from literature: This large number of cases indicates that the affection is possibly more frequent than is generally known. In his original paper König describes three stages of the affection: First, the joints become distended with blood, usually spontaneously, without any history of injury. There is a feeling of tension and pain but no tenderness or symptoms of inflammation. Ecchymosis may appear within a few days. Usually the effusion is absorbed in a short time and at first little damage is done. If the hemorrhage is repeated, however, and this is usually the case, a chronic form of arthritis is produced. The synovial membrane becomes thickened and rough, the periarticular structures infiltrated and the articular cartilages and synovial membrane are discolored with blood pigment and may be covered with partially organized fibrinous tufts and the muscles are atrophied. In the third stage of the affection loss of function and deformity

occur caused by proliferation of periarticular tissue and fibrous outgrowths. The affection appears usually in early life, frequently between the fourth and sixth years, practically always in the male sex. Traumatism does not seem to be an etiologic factor. The knee is affected in nearly half the cases, the elbow in about one-fourth of the cases and the ankle next most frequently. The prognosis is always bad in hemophilia, it being estimated that 60% of the patients die before the age of eight years, but strange to say children affected with arthritis do not seem to have so great a mortality. It is extremely important that the condition be recognized, for a considerable number of cases have been operated upon, with fatal results in nearly every case. Not even puncture or massage is advisable. The limb should be put at perfect rest, cold applications should be made and gentle compression applied. Very little can be done to arrest the progress of the disease, but if suitable apparatus be applied much can be done to prevent deformity and relieve pain.

REVIEW OF LITERATURE

Operations in Diabetes.—Kausch.¹ These patients should be operated upon only when indications are most urgent. If possible it is best to wait and treat the patient until the urine is free from sugar, or at least until the percentage of sugar is considerably reduced. In many cases the indications for operation disappear when the sugar disappears from the urine. The asepsis should be as strict as possible. Antidiabetic therapy should be continued after as well as before the operation. Kausch considers general anesthesia dangerous in these cases and advises as limited use of it as possible. Ether he considers preferable to chloroform as an anesthetic. For sometime before the operation the patient should be given large doses of sodium bicarbonate in order to lessen the liability to diabetic coma. [M.B.T.]

Adrenalin.—To determine whether adrenalin could be substituted for gelatin in cases of hemorrhage induced Letmann² to perform a number of experiments. In the case of the first animal his experiment was a total failure. He excised a section of liver and applied pledgets of cotton soaked in $\frac{1}{10}$ % adrenalin solution to the bleeding surface. In the author's opinion the adrenalin could not come in contact sufficiently with the tissues on account of the flowing blood. In other cases he injected 2 ccm. of the same solution into livers before excising. After some few minutes the section would be absolutely bloodless, and no bleeding took place when pieces of liver of various sizes were excised. No hemorrhage occurred even after hyperemia replaced the anemia of the cut surface. He believes this to be due to a formation of thrombi in the capillaries, which prevents secondary hemorrhages when the part becomes hyperemic. He recommends preventive adrenalin injections in operations performed on vascular organs. [E.L.]

Ureterocystostomy, with Traction of the Ureter.—Smith³ advocates the anastomosis of the ureter with the bladder whenever ureteroureterostomy is excluded, even though much traction on the ureter be needed to approximate the two organs. Warnings against performing anastomosis are due to fear of the ureter tearing loose from the bladder. This is apt to occur if the usual method of operating is followed, but oblique implantation of the ureter into the bladder, fully described by Smith in five steps, secures a much firmer fixation, as demonstrated by him in experiments on the excised genitourinary tract. He also performed operations on 10 dogs, with the view of determining the maximum length of ureter that could be excised and still obtain firm union with the bladder. From one to three inches were excised, union following in all but one case. In nearly every case some degree of interstitial nephritis ensued, this in some instances resulting in atrophy of the kidney on the side of operation. In a few cases nephritis of less degree was found in the opposite kidney. This was not due to obstruction, as the ureteral openings were patulous in

¹ Münchener medicinische Wochenschrift, December 9, 1902.

² Berliner klinische Wochenschrift, December 8 and 15, 1902.

³ Practitioner, 1903, Vol. Lxx, p. 85.

¹ Zentralblatt für Chirurgie, 1902, Vol. xxix, p. 1190.

² Münchener medicinische Wochenschrift, December 9, 1902.

³ Northwest Medicine, February, 1903.

all except two cases. To determine if traction on the ureter was responsible for this kidney change a ureter in each of four dogs was severed at its normal site and implanted in the fundus of the bladder without loss of substance. The results excluded traction as the sole cause of nephritis, suggesting interference with the blood and nerve supply as a probable cause. The suggestion is made that atrophy of the kidney probably results from these operations on human beings. [A.G.E.]

Lister's Relation to the Development of Operative Surgery.—Watson Cheyne¹ gives interesting data taken from his notebook made in 1872, while a student of Lister at the University of Edinburgh. Interesting facts given serve to remind us that many of the present aseptic and antiseptic surgical procedures which are regarded as of recent origin were then practised by Lister. Among these may be mentioned cutting down upon and wiring with perfect success a fractured olecranon; wiring with good results ununited fractures of the radius and femur; the removal of exostosis with chisel and hammer; osteotomies for correction of deformities; removal of the breast with a thorough cleaning out of the axilla; division and removal of the pectoral muscles; free incision, scraping and drainage of psoas abscess; free incision and tubular drainage for unabsorbed hematomas; and similar treatment for housemaid's knee. He reintroduced the operation of suprapubic cystotomy for the removal of stone. In so doing he accidentally opened the peritoneum, which was sutured with catgut. A large stone was removed and recovery followed. [A.B.C.]

Interposition of Rubber Tissue Without Removal of the Gasserian Ganglion.—Robert Abbe² reports five cases successfully treated by this method. In one case the cure has lasted over 6 years, one for 5 years, one for 2½ years, one for 3½ years, and another for 6 months. Abbe finds this method very much safer than the operation for removal of the gasserian ganglion and in his hands it has proved equally effective. In performing the operation he believes the external carotid artery may be ligated with advantage. He makes a vertical incision over the middle of the zygoma, through the temporal muscle, scraping the muscle to either side and retracting it. A small opening into the skull is then made with a mallet and gouge. The dura is pressed away and the nerves are exposed. The nerve trunks are grasped with clamps near their foramina of exit and either cut or torn from the ganglion by rotation with the forceps. A thin piece of gutta percha tissue is then laid over the foramen rotundum and ovale and is pressed into place by iodoform gauze. After a few moments the gauze may be withdrawn and the gasserian ganglion is allowed to settle down upon the rubber tissue. He finds this operation simple, speedy, and safe. [M.B.T.]

The Leukocytes in Appendicitis.—Coste³ has made careful leukocyte counts in 29 cases of appendicitis to determine if any relation existed between their number and the appearance of pus. He divided the cases into three groups: (1) In which the clinical symptoms indicate a pure appendicitis without recognizable exudate; (2) in which dulness exists without well-defined clinical cause; (3) the purulent peritonitis. He concludes from his observations: If during an acute appendicitis the number of leukocytes remains normal or shows only a transient increase to an inconsiderable height the process is localized to the appendix or the exudate is serous. In such cases the disease usually runs a mild course. A fecal stone, however, may at any time produce a perforation leading to suppurative peritonitis; such an accident would not be announced by an increase in the number of leukocytes, but rather by an increase in the severity of the symptoms. If the number of leukocytes reaches 22,000, an abscess may be counted upon with certainty. In purulent peritonitis the number of leukocytes increases only if the organism possesses sufficient resisting power against the infection. A sudden fall in the number of leukocytes is a bad omen from a prognostic standpoint. [E.L.]

Nephrectomy for Endothelioma of the Kidney.—The patient in the case reported by Sanford⁴ was a man of 47 whose

illness began two years before as an attack of hematuria lasting two days. These attacks became more frequent and painful and large casts the size of goose-quills and as long as six inches were passed. Operation revealed a large, irregular and hard kidney, that was removed after resection of four inches of the twelfth rib. The patient did well, after 48 hours of shock, until the thirteenth day, when he suddenly died. Microscopic examination of the tumor showed it to be an endothelioma. [A.G.E.]

The Evolution of Modern Surgery.—Hector Cameron¹ states that the period during which Lister was developing his antiseptic treatment of wounds, in Glasgow, extended only from 1865 to 1869. During this short time surgery was revolutionized. Wounds were found to heal without inflammation, suppuration or constitutional disturbance; compound fractures and dislocations were robbed of the former dangers which surrounded them; large chronic abscesses connected with diseased bone were proved to be no longer incurable, even when occurring in the adult; arterial trunks were ligatured in their continuity without fear of secondary hemorrhage or infection; joints opened by accident or by the surgeon's knife healed perfectly; ununited fractures were treated boldly by removing the ends of the fragments and preventing infection. He was the first to do a deliberate osteotomy, even cutting into the ankle-joint, to correct a deformity. He was the first to do a complete removal of the female breast, clean out the axilla and resect the pectoral muscles, for malignant disease of the mamma, the woman dying three years later without recurrence at the site of operation, but of a metastatic growth in the liver. [A.B.C.]

Etiology and Treatment of Congenital Muscular Wryneck.—Fridberg² reports the result of his studies in 29 cases of congenital muscular wryneck. Sixteen of these children were breech presentations, 6 were difficult forceps deliveries, and only 7 presented normally by the occiput. In 26 cases the torticollis was seen immediately or shortly after birth; in 3 only did the condition show itself for the first time after the third month. Etiologically the condition therefore, in his opinion, is due in the majority of cases to the pathologic changes arising in the sternomastoid as the result of birth trauma. In isolated cases it may arise from a pathologic position of the head during development of the fetus in utero. Eighteen of the patients were operated on for the condition and in every instance the macroscopic and microscopic picture of myositis was found. Whether a purely degenerative process, the result of the trauma, or whether a bacillary inflammatory infection arises he is not able to decide. The treatment in all cases resolves itself to extirpation or resection of a part of the muscle; in some few cases plastic prolongation of the muscle may be attempted. The clinical details of the 29 cases are appended. [E.L.]

Lupus Treated in the Electrical Department of the Western Infirmary.—D. J. Mackintosh³ reports that in beginning a Finsen light treatment a test exposure of 10 minutes to a current of 10 amperes is given, and if the reaction is not too violent the sitting is increased to 15 or 20 minutes and the current to 12 amperes, care being taken that the part be kept closely applied to the lamp to ensure its being rendered as anemic as possible. In a few cases such violent inflammatory reaction with vesication has occurred that the time of exposure has been reduced to five minutes, and in others treatment has been discontinued for some days to allow the skin to recover from blistering. In other cases no satisfactory reaction has appeared for days or even weeks. The greater the reaction to test exposure the greater the hope of ultimate cure. The reaction generally follows immediately, but the patient is not conscious of any unusual sensation until some hours afterward, when heat and tingling set in, and the local redness seen immediately after the exposure is intensified. The department has not employed the high frequency current alone in any case of lupus of the skin, but when the affected area has become skin-whole after treatment by light they use it in treatment of the

¹ British Medical Journal, December 13, 1902.

² Annals of Surgery, 1903, Vol. xxxvii, p. 1.

³ Münchener medizinische Wochenschrift, December 9, 1902.

⁴ Yale Medical Journal, February, 1903.

¹ British Medical Journal, December 13, 1902.

² Deutsche Zeitschrift für Chirurgie, Vol. lxi, p. 393.

³ Glasgow Medical Journal, December, 1902.

dense, inelastic scar, a relapse occurring otherwise. After some weeks of this the scar becomes thin, white, elastic, and scarcely noticeable. In places inaccessible to the lamps, as the mucous membrane of the mouth and nose, they employ the high frequency current by means of glass electrodes with marked benefit and without pain. In several cases of lupus at the edge of the nostrils the granulations became excessively fungoid after light treatment, perhaps because the part could not be made sufficiently anemic to permit penetration of the violet and ultraviolet rays, which then acted as a superficial irritant. [H.M.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Diabetes Mellitus and Gynecologic Operations.—Futh¹ reports from different operators several instances in which the patients after undergoing abdominal operations for uterine cancer were apparently doing well and suddenly two or three days after operation were seized with diabetic coma, from which they died. He cites also two instances in which 48 hours after operating for cataracts the patients were seized with diabetic coma, causing death. Futh therefore considers the presence of sugar in the urine a contraindication to any operative surgery requiring general anesthesia. Many minor operations, including plastic perineal operations, may be performed under local anesthesia. Before any operation, however, whether major or minor, upon a diabetic patient it is well to prepare the patient by a longer or shorter course of diet to reduce the amount of sugar in urine and blood, as its presence renders the wound more liable to infection or diabetic gangrene. In some grave cases lumbar anesthesia may be preferable to any other form. [W.K.]

A Study of Fertilization with Reference to the Occurrence of Ectopic Pregnancy.—J. Oliver,² after investigation, believes that destruction of the ciliated epithelium of the fallopian tube is not responsible for ectopic gestation. After such destruction it is more than probable that the ovum would traverse the tube more rapidly and increase the chances of the germ and sperm elements meeting in the cavity of the uterus. Separately considered, these elements may be perfectly healthy, but for some unknown reason display an absolute indifference toward each other. If the affinity is of feeble character, the sojourn of the ovum in the tube may be unduly prolonged, favoring the occurrence of tubal gestation. If the elements fail entirely to attract each other, their coalition is impossible, and we have the variety of sterility attributed to sexual incompatibility. Fecundation usually, if not invariably, occurs in the tube, and arrest in this structure is due to some disproportion in size. The ovum may be inordinately large, or may become jammed because fertilization occurred too near the ovary. Whatever tends to delay descent favors ectopic gestation. For this reason impairment of sensitivity or paresis of the tube will be a potent factor. Occasionally shock, fear, and mental anxiety by their paralyzing action may bring about this result. In the methods adopted for the prevention of conception is a still more powerful influence, exerting a very prejudicial effect on the nervous organization of the woman, directly affecting the wellbeing of so highly sensitive a structure as the tube, and interrupting its physiologic processes. Chronic salpingitis lessens the irritability of the tube, and the sclerosed changes later narrow the lumen, thus interfering with transit. [H.M.]

Bossi's Dilator in Eclampsia.—J. W. Ballantyne³ has used Bossi's fourbladed dilator in three cases of albuminuria in pregnancy, two of which went on to eclampsia. The first was a primipara, aged 23. She had four convulsions and the os was about 1 inch in diameter; the fetal position was r. o. p. He used Bossi's dilator and had full dilation in 20 minutes. As the child was dead and on account of the narrow pelvis he could not rotate

the head, he performed basilysis and rapidly extracted it. There was no laceration of the cervix and the mother rapidly recovered. In the second case, as after 50 hours labor the os remained only 2 inches in diameter without any increase for many hours, he used the dilator and completed the dilation in half an hour, and then with forceps delivered a living child weighing over 7 pounds. The third case was a primipara, aged 24. When 6½ months advanced in pregnancy she had five convulsions. There was much albumin in the urine and the cervix was very rigid, the os being an inch in diameter. With the dilator he in 35 minutes increased its size to 3 inches and delivered the fetus with forceps, it not being viable. He has dealt with many cases of eclampsia and thinks that if we accept the principle of early completion of labor as the treatment of the condition, then the Bossi dilator enables us to do this more quickly than any other means; further, it would seem to do so with safety if properly used. In none of these cases did he have the opportunity to try any prophylactic measures. [W.K.]

Anencephalus: Spina Bifida.—O. W. Parker¹ reports these two abnormalities in two successive pregnancies of a Swede woman of 30. Five normal male children had been born previously. The anencephalic monster was born in August, 1901, the body being fairly well developed. Sex, male. The child having a meningo-myelocele was born in October, 1902, and lived two weeks. It was also a male. The only history of illness in the mother was a prolonged menstrual flow lasting two months that occurred four months before conception of the anencephalic child. The father is a healthy miner. [A.G.E.]

The Treatment of Labor in Narrow Pelves in Private Practice.—According to Mueller² the prognosis of the course of labor depends not only upon the size of the pelvis, but upon the size and contour of the head, and also upon the hardness of the skull bones. He thinks the best method of determining the comparative size of the head and the pelvis is by impression, and he describes the manner of doing this. If the physician is cognizant of this unfavorable condition in time, a prophylactic measure not to be neglected is the lowering system of Prochowick. This care of diet, beginning in the fifth or sixth month of pregnancy, with the reduction by limiting the amount of carbohydrates and the measure of fluids, may ensure a slender child with soft head bones which can be delivered through the narrow pelvis. If, however, induced labor is indicated, then the most modern procedure is accouchement forcé with metal dilators. A number of these have been devised, but none better than the Bossi dilator. The highest service of Bossi, however, appears to Mueller to be the fact that he has again brought to our knowledge that the rapid distention of the os is possible. This rapid distention of the os may be secured by the fingers and hand, the classic method, which though long abandoned was never completely forgotten. The obstetrician is wont to use surgery only in exceedingly rare and exceptional cases. [W.K.]

Electric Light in Gynecology.—A. T. Orlor³ has experimented with electric light in various gynecologic affections. The "cold" white light was employed by means of a specially constructed apparatus. Incandescent lamps furnished the light, its intensity varying from 5 to 16 candle-power. Reserving details for a future report, the author offers these conclusions: Light treatment is indicated in a series of inflammatory gynecologic conditions, as metritis, parametritis, oophoritis, salpingitis, etc., in the acute as well as chronic stage; the chief action of light treatment is striking relief of pain; exudates, serous and purulent, decrease in size and occasionally disappear completely; dysmenorrhea, retroflexion of the uterus, ovarian neuralgia, cervical erosions, and uterine catarrh, especially the gonorrhoeal variety, are all benefited by the method. On the other hand, light treatment is contraindicated during menstruation, uterine hemorrhages, and pregnancy. Untoward results, such as general debility, paresthesias, etc., are apt to follow the first three or four applications. Altogether, in spite of its favorable action, the method needs further investigation. [L.J.]

¹ Deutsche medizinische Wochenschrift, January 22 and February 5, 1903.

² Edinburgh Medical Journal, December, 1902.

³ British Medical Journal, February 21, 1903.

¹ St. Paul Medical Journal, March, 1903.

² Münchener medizinische Wochenschrift, February 10, 1903.

³ Russki Vratch, January 4, 1903.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPELMAN

REVIEW OF LITERATURE

Helmitol, a New Urinary Antiseptic.—It is generally conceded that urotropin is one of the most valuable if not the most powerful urinary antiseptic we have. It owes its value to its decomposition with the liberation of free formaldehyd. Unfortunately, however, this decomposition is exceedingly slow in alkaline urine, so that the remedy fails in precisely those cases in which its action is most needed. Goldschmidt¹ describes a new form of this remedy which is constructed with the idea of overcoming the difficulty just named. Chemically it is a methylene citronate of urotropin, and is marketed under the name of helmitol. The addition of an alkali to its solution in a test-tube brings about the liberation of formaldehyd. The presence of free formaldehyd was also demonstrated in the urine after its internal administration. Goldschmidt found that beside the free formaldehyd a certain proportion of the antiseptic occurred in the urine still in chemical combination. It is very possible that this union possesses antiseptic properties. Helmitol has the advantage over urotropin of being more soluble, while its price is not excessive. In a large series of cases of cystitis, prostatitis, and similar diseases, especially in those cases with a tendency toward alkaline decomposition, Goldschmidt found the remedy in doses of one gram two or three times a day of great value. He was unable to observe any effect from the remedy in cases of phosphaturia. The same is true of infectious diseases of the urethra. [H.C.W.]

Treatment of Puerperal Insanity.—E. W. White² thinks that as soon as premonitory symptoms of puerperal insanity are observed extreme quietude of surroundings should be ensured and careful, skilled supervision of the patient enforced. The child should be weaned at once. Give liberal and sustaining diet and keep the bowels regular. Thorough examination of uterus and surroundings should be made, lochial discharges dealt with, and urine examined. Avoid any free use or abuse of sedatives and hypnotics. If there is acute maniacal excitement with insomnia, opium and all its preparations should be avoided and proper doses of potassium bromid and chloral given, subsequently sulfonal and trional. But if the mental symptoms are of the melancholy type the preparations of opium and diffusible stimulants are indicated. Other medical treatment is outlined, and as soon as strength will permit fresh air out of doors, gentle exercise, amusements, and light occupations should be encouraged. Recovery in all cases is gradual and protracted, but the final results satisfactory, as about 80% recover. [W.K.]

The Gelatin Treatment of Melena Neonatorum.—Oswald³ has seen among 6,500 newborn children, 5 with true melena neonatorum. Two were treated with 2% solution of gelatin hypodermically, 2 with ergotin and ice, 1 with ice only. One of the 2 patients treated with ergotin left the hospital before termination, the other 4 recovered. It is therefore a question whether gelatin saved the 2 patients, or whether they would not have recovered without it. On account of the rapid results, however, he believes himself justified in continuing the treatment with gelatin, should other cases present themselves. [E.L.]

The Treatment of Diphtheria by the Intravenous Administration of Antidiphtheric Serum.—Cairns⁴ advocates the intravenous injection of antidiphtheric serum in (1) the malignant forms of the disease—those characterized by hemorrhage from the nose or into the skin, by great glandular enlargement with marked cellular infiltration, and by extreme blanching of the skin; (2) any marked involvement of the lungs, either at the time of admission or subsequently; (3) a moribund condition of the patient on admission; and (4) profoundly toxic condition of the patient. In all such cases an initial dose of from 20,000 to 25,000 units is perhaps not exces-

sive, and if in 24 hours the patient fails to respond to the treatment by continued rise of temperature and increased frequency of pulse-rate and respiration-rate, and by an extension of the membrane, the dose may be safely repeated. A series of 50 illustrative cases is reported. [A.O.J.K.]

Results of the Tuberculin Treatment According to Goetsch's Method.—Roemisch¹ has treated 17 patients in various stages of pulmonary tuberculosis with tuberculin, following the method of Goetsch, with favorable results in incipient cases, and in some more advanced instances, which, in spite of conscientious carrying out of the proper hygiene and diet, and under favorable conditions, had not shown any progress for a long time. He does not recommend it in highly nervous patients, in cases with a temperature curve, and in individuals already affected with such extensive lung changes as to produce considerable tissue destruction during the reaction. To obviate the latter it is better, therefore, to choose only such cases for the treatment which, through prolonged suitable measures, have begun to cicatrize, and when associated with such measures, he believes the tuberculin treatment indicated. The method is applied as follows: He begins by injecting the active substances of tuberculin "R" in doses of $\frac{30}{1000}$ grain (.002 milligram), and increases it gradually to $\frac{15}{1000}$ grain (.1 milligram). He then substitutes the entire tuberculin in doses, gradually increasing from $\frac{15}{1000}$ to 15 grains (.1 milligram to 1 gram), repeating the last dose several times in intervals of a week. The intervals between the other injections were usually two days. The temperature was taken five times daily, and whenever an elevation occurred he returned to the next lowest dose, which was endured without reaction. [E.L.]

The Treatment of Glycosuria and Diabetes Mellitus with Aspirin.—Williamson² recommends the use of aspirin (acetyl-salicylic acid) in the treatment of glycosuria and diabetes mellitus, his observations being made on 40 patients. In 11 cases which were carefully observed for a long time the results were as follow: 1. In four very severe cases the drug did not produce any decided effect on the sugar excretion. 2. In three cases of chronic glycosuria the sugar excretion ceased when aspirin was given, the diet being kept unchanged. 3. In four cases of diabetes mellitus of the milder form the sugar excretion appeared to be clearly diminished by the aspirin. [A.O.J.K.]

Beer Yeast in the Treatment of Eruptive Fevers and of Erysipelas.—Following the discovery of the good effects obtained by the use of beer yeast in the treatment of furunculosis a number of investigators have been led to experiment with yeast in the treatment of divers affections. Among these Piétri, of Nice, and Conche, of Lyons, secured interesting results in the treatment of variola, though it appears that they had been forestalled in the use of beer yeast by Presta and Taruella, who report having employed it in June, 1901, with success in varioloid, scarlatina, rubeola and erysipelas. The results of these experiments are given, whereby it appears that beer yeast exercises in eruptive fevers and erysipelas a quasi specific action, which is attributed not to the soluble products secreted by the yeast, but to the action of the yeast protoplasm itself.³ [C.S.D.]

Intravascular Antisepsis.—Fortescue Brackdale,⁴ as a result of a series of experimental investigations, concludes (1) that rabbits injected daily with nontoxic doses of mercury oxy-cyanid, formaldehyd, chinolol, protargol, or sodium taurocholate are not thereby protected from the usual effects of a previous inoculation of virulent anthrax; and (2) that chinolol and formaldehyd in large doses (toxic) so depress rabbits infected with pneumococcus that they die sooner than an untreated animal. Generally, then, it may be said that at present there is no experimental evidence which would warrant the assumption that the course of septicemia in animals can be favorably influenced by the intravenous injection of antiseptic substances and that the only result to be obtained by pressing such a treatment beyond the maximum nontoxic dose is to hasten the death of the animal. In view of the results obtained, as well as those

¹ Therapeutische Monatshefte, 1903, xvii, p. 36.

² British Medical Journal, February 7, 1903.

³ Münchener medicinische Wochenschrift, November 25, 1902.

⁴ Lancet, 1902, ii, 1685.

¹ Münchener medicinische Wochenschrift, November 18-25, 1902.

² British Medical Journal, 1902, ii, 1946.

³ La Semaine Médicale, October 29, 1902.

⁴ Lancet, 1903, i, 98.

obtained by other investigators, it seems useless to continue trying to apply clinically a method which, while by no means free from special dangers and difficulties, is at present unsupported by any experimental evidence either as to its present advantages or future prospects. [A.O.J.K.]

FORMULAS, ORIGINAL AND SELECTED.

For Toothache.¹—

Orthoform	1 part
Carbolic acid, crystallized	1 part
Camphor	4 parts
Chloral hydrate	4 parts

Mix and dissolve.

Clean out the cavity, if possible, and dry it with a pledget of absorbent cotton wrapped around a toothpick or sharpened match end; then introduce a little wad of cotton saturated with the liquid into the cavity. A thin strip of bibulous paper may sometimes be used for drying the cavity with better advantage than cotton.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 14, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
Alabama:	Mobile.....Feb. 28-Mar. 7.....	11	
California:	Fresno.....Feb. 1-28.....	23	
	Los Angeles.....Feb. 22-28.....	4	
	Sacramento.....Feb. 22-28.....	3	
	San Francisco.....Feb. 22-Mar. 1.....	8	
Colorado:	Denver.....Feb. 22-28.....	10	
Florida:	Jacksonville.....Feb. 28-Mar. 7.....	3	
Illinois:	Alton.....Feb. 28-Mar. 7.....	1	
	Chicago.....Feb. 28-Mar. 7.....	12	4
Indiana:	Elwood.....Mar. 1-8.....	6	
	Evansville.....Feb. 28-Mar. 7.....	5	
	Indianapolis.....Feb. 28-Mar. 7.....	19	8
Iowa:	Davenport.....Feb. 28-Mar. 7.....	1	
Kansas:	Wichita.....Feb. 28-Mar. 7.....	2	
Kentucky:	Lexington.....Feb. 28-Mar. 7.....	1	
	Newport.....Mar. 1-8.....	1	
Louisiana:	New Orleans.....Feb. 28-Mar. 7.....	3	
Massachusetts:	Fall River.....Feb. 28-Mar. 7.....	2	
	New Bedford.....Feb. 28-Mar. 7.....	1	
Michigan:	Ann Arbor.....Feb. 28-Mar. 7.....	1	
	Marquette.....Feb. 28-Mar. 7.....	1	
	Port Huron.....Feb. 28-Mar. 7.....	5	
Missouri:	St. Louis.....Mar. 1-8.....	5	
Nebraska:	Omaha.....Feb. 28-Mar. 7.....	2	
New Jersey:	Jersey City.....Mar. 1-8.....	1	
	Newark.....Feb. 28-Mar. 7.....	3	
New York:	Buffalo.....Feb. 28-Mar. 7.....	1	1
Ohio:	Cincinnati.....Feb. 27-Mar. 6.....	6	1
	Cleveland.....Feb. 28-Mar. 7.....	2	2
	Dayton.....Feb. 28-Mar. 7.....	5	
	East Liverpool.....Feb. 1-28.....	2	
Pennsylvania:	Erle.....Feb. 28-Mar. 7.....	3	
	Johnstown.....Feb. 28-Mar. 7.....	1	1
	McKeesport.....Feb. 28-Mar. 7.....	1	
	Philadelphia.....Feb. 28-Mar. 7.....	17	4
	Pittsburg.....Feb. 28-Mar. 7.....	27	1
South Carolina:	Charleston.....Feb. 28-Mar. 7.....	2	1
Tennessee:	Memphis.....Feb. 28-Mar. 7.....	3	
Utah:	Salt Lake City.....Feb. 23-Mar. 7.....	26	
Wisconsin:	Green Bay.....Mar. 1-8.....	1	
	Milwaukee.....Feb. 28-Mar. 7.....	6	

SMALLPOX—FOREIGN.

Austria:	Prague.....Feb. 7-14.....	6	
Belgium:	Antwerp.....Feb. 7-14.....	1	
	Liege.....Jan. 31-Feb. 7.....	1	1
Brazil:	Rio de Janeiro.....Jan. 17-Feb. 6.....	14	
Canada:	Hamilton.....Feb. 28-Mar. 7.....	1	
	Winnipeg.....Feb. 1-28.....	2	
Canary Islands:	Las Palmas.....Feb. 7-14.....	32	
Germany:	Hamburg.....Feb. 14-21.....	1	
Great Britain:	Birmingham.....Feb. 14-21.....	8	1
	Dublin.....Feb. 14-21.....	2	
	Leeds.....Feb. 14-21.....	9	2
	Liverpool.....To Feb. 21.....	105	5
	London.....Feb. 14-21.....	7	
	Manchester.....Feb. 7-21.....	52	3
	Sheffield.....Feb. 7-21.....	4	
	Bombay.....Feb. 3-10.....	53	
India:	City of Mexico.....Feb. 15-22.....	2	1
Mexico:	Odessa.....Feb. 7-11.....	3	1
Russia:	St. Petersburg.....Feb. 7-14.....	75	14
	Warsaw.....Feb. 19-26.....	2	
Spain:	Barcelona.....Feb. 1-15.....	4	
	Malaga.....Jan. 1-31.....	3	
	Valencia.....Feb. 1-15.....	3	
Straits Settlements:	Singapore.....Jan. 10-17.....	4	
Switzerland:	Zurich.....Feb. 7-14.....	1	

¹ American Druggist.

YELLOW FEVER.

Brazil:	Rio de Janeiro.....Jan. 16-Feb. 6.....	75	
Mexico:	Vera Cruz.....Feb. 21-28.....	3	3

CHOLERA—FOREIGN.

India:	Bombay.....Feb. 3-10.....	1	
	Calcutta.....Jan. 31-Feb. 11.....	33	

PLAGUE—FOREIGN.

Brazil:	Rio de Janeiro.....Jan. 16-Feb. 6.....	4	
India:	Bombay.....Feb. 3-10.....	649	
	Calcutta.....Jan. 31-Feb. 7.....	142	
	Karachi.....Feb. 1-8.....	38	39
Mexico:	Mazatlan.....Feb. 7-14.....	41	20
	Mazatlan.....To Mar. 6.....	302	250

PLAGUE—INSULAR.

Hawaii:	Hilo.....Mar. 9.....	1	
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Changes in the Medical Corps of the U. S. Army for the week ended March 14, 1903:

BARTLETT, First Lieutenant COSAM J., assistant surgeon, is granted leave for one month.
 RAFFERTY, Major OGDON, surgeon, is granted leave for two months from April 1, or as soon thereafter as his services can be spared.
 GRANER, CARL, hospital steward, company of instruction No. 2, hospital corps, Fort McDowell, will proceed to Benicia Barracks to relieve Hospital Steward Wilfred H. Schuyler. Steward Schuyler will be sent to Manila, P. I.

Changes in the Medical Corps of the U. S. Navy for the week ended March 14, 1903:

LUMSDEN, G. P., surgeon, detached from the Hancock and ordered home to wait orders—March 9.
 WAGGENER, J. R., medical director, commissioned medical director from January 20, 1903—March 10.
 HAAS, H. H., passed assistant surgeon, and W. H. Bucher, commissioned passed assistant surgeons from January 10, 1903—March 10.
 HUNTINGTON, E. O., DENNIS, J. B., and THOMPSON E., passed assistant surgeons, commissioned passed assistant surgeons from February 10, 1903—March 10.
 DORSEY, B. H., assistant surgeon, appointed assistant surgeon, March 2, 1903—March 10.
 HURD, I. N., pharmacist, detached from the Navy Yard, Portsmouth, N. H., and ordered to Washington, D. C., for examination for retirement, and thence home to wait orders—March 11.
 BOBERT, E. S., JR., detached from the naval recruiting station, Buffalo, N. Y., and ordered home to wait orders—March 12.
 MCMURDO, P. F., acting assistant surgeon, ordered to the Gloucester—March 12.
 GROVE, W. P., passed assistant surgeon, detached from duty with marine detachment, Culabra, P. R., and ordered to Naval Hospital, New York, for treatment—March 12.

Changes in the Public Health and Marine-Hospital Service for the week ended March 12, 1903:

THOMAS, A. R., passed assistant surgeon, granted leave of absence for two months from February 25—March 5, 1903.
 KERR, J. W., assistant surgeon, leave of absence granted by department letter of September 20, 1902, amended so that said leave shall be for one month and fifteen days—March 2, 1903.
 FOSTER, A. D., assistant surgeon, upon return of medical officer in command, relieved from duty at Wilmington, N. C., and directed to proceed to Charleston, S. C., and assume command of the service, relieving acting assistant surgeon F. F. Sams—March 6, 1903.
 BEAN, L. C., acting assistant surgeon, granted leave of absence for two days—March 9, 1903.
 GOLDSBORO, B. W., acting assistant surgeon, granted leave of absence for one day—March 9, 1903.
 PATRIE, W. E., acting assistant surgeon, granted leave of absence for fourteen days from February 27—March 10, 1903.
 RODMAN, J. C., acting assistant surgeon, granted leave of absence for three days—March 7, 1903.
 ACHENBACH, J., pharmacist, relieved from duty at Port Townsend quarantine, Washington, and directed to proceed to Port Townsend, Washington, and report to medical officer in command for duty and assignment to quarters, relieving pharmacist R. F. Troxler—March 6, 1903.
 THURSTON, E. J., pharmacist, to proceed to Gulf Quarantine and report to medical officer in command for duty—March 6, 1903.
 WOODS, C. H., pharmacist, granted leave of absence for twenty days from March 21—March 9, 1903.
 DAVIS, H. E., pharmacist, relieved from duty at Louisville, Ky., and directed to proceed to Memphis, Tenn., and report to medical officer in command for duty and assignment to quarters, relieving pharmacist E. M. Holt—March 6, 1903.
 TROXLER, R. F., pharmacist, upon being relieved from duty at Port Townsend, Washington, to proceed to Port Townsend Quarantine and report to medical officer in command for duty—March 6, 1903.
 HOLT, E. M., pharmacist, upon being relieved from duty at Memphis, Tenn., directed to proceed to Louisville, Ky., and report to medical officer in command for duty and assignment to quarters—March 6, 1903.

Promotion.

PARKER, H. B., assistant surgeon, commissioned as passed assistant surgeon, to rank as such from March 3, 1903.

Resignation.

THOMAS, A. R., passed assistant surgeon, resigned to take effect April 25, 1903.

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Relation of the Physician to the Illegitimate Child, Its Mother, Etc.—We regret extremely that the engagements of our space are such that we cannot reproduce in our pages the noble article by Hastings H. Hart, LL.D., on "The Illegitimate Child in Chicago," published in the March number of the *Chicago Medical Recorder*. Dr. Hart's description of Chicago as "the great dumping ground for the social wreckage of the interior," is of course applicable to every large city. The personal aspect of the question is inevitably bound up with the function of the physician, and every general physician must have realized many times the poignant fact described in the following quotations:

When one contemplates the multitude of young women, timid, inexperienced, shamefaced, driven into the maelstrom of a great city by the coldness of their friends and the hostility of their native communities; when one considers the suffering through which they pass, alone and unprotected; the perils to which they are exposed with no sufficient counselor, the perpetual stream of these poor creatures pouring into the houses of prostitution to become bondwomen, doomed to a brief life of misery and an early and forgotten grave, his heart is stirred with a desire to do some small part in redeeming them from their sad fate and restoring them to a happy and womanly life.

The physician more than any other public servant is the guardian of the sexual morals of the community. His relation to his patient is such that he is able to exercise a potent influence at the time when it is most needed. Many a man has been saved to honor and rectitude; many a young woman has been rescued from dire peril and has become a good wife and mother, through the wise and timely intervention of a faithful physician. He can do what neither parents, clergymen nor friend can do. He is invariably consulted, sooner or later, and his advice is usually followed. A great responsibility rests upon him, therefore, because he practically controls the policy of the community in dealing with this important social question.

Four parties are concerned in the illegitimate child, says Dr. Hart—the child, the mother, the father, and the community, including relatives and friends. Concerning the child we are delighted to learn that it is not necessary to allow it to be killed in Chicago. It is not necessary to sell it to be killed; not necessary to deny it the mother's breast and care in order for the mother to become a wetnurse. It is not necessary for the mother to give it up in order to earn her living. As to the young mother, the physician can help to reform her, help her to meet her maternal obligations; often the parents can be prevailed upon to take her back; if not, places can be found for both mother and child

whereby lives of decency and morality and even honor may be led. As to the father, he that suffers least of all, he can often be brought to face his obligation, and either to marry or support the mother and child, and especially if the effort is made before the birth of the child. To fail to bring him to account is often to fail lamentably in the physician's duty and in the whole problem. If he cannot be brought to book, the law with all its sternness should be called in. As to the community and the relatives, every counsel urges that the saving of both mother and child for future lives of service and respectability is the one rule that must govern all action. Dr. Hart says:

I desire to say in behalf of the Illinois Children's Home and Aid Society that the services of the society are freely offered to every physician who may desire counsel or assistance in dealing with any case of illegitimacy. We do not lay down any fixed rules for dealing with such cases. We employ trained agents and we endeavor first to find out just what ought to be done in the particular case before us, and then, if possible, to do that thing. It may be to take the child from the mother and place it in a family home; it may be to secure a situation for the mother where she can nurse her baby and keep it with her; it may be to secure a boarding place where the mother can pay board for the child; it may be to care for the mother and child together in a suitable institution for six months or a year; it may be to induce the grandparents to adopt the child as their own; or it may be to bring about a marriage between the parents.

Are there such institutions and helpers in other cities to whom the physician may turn for aid when these pitiable victims come under his care and appeal to him for advice?

Doctor or Patient—The Point of View?—When a book, an article, or a discovery of possible medical value appears, the medical journals, reviewers, critics, and, generally speaking, the judges at once take up an attitude toward it. The attitude taken to the new proposal may be good, or indifferent, or bad, but we wish today to fix in mind one habit that exists, and which seems to be both dangerous and increasing. This is the tendency of the judges to take the point of view of the doctor and of the profession rather than that of the patient and of the world of patients. It is most natural, often inevitable, that this should be so, because the alleged discovery or proposal is of course at first viewed from the scientific or the professional standpoint. But

it should be viewed not only and not always from that position! For there is no more stale truism than that doctor and profession exist for the benefit of the patient. If we are not here finally to cure and prevent his diseases we have no right to be here at all. It is not only conceivable but it is actually true that the professional attitude, the frame of mind that looks at a book or proposal purely from the point of view of the doctor and of medical truth may not coincide, may even be opposed to the practical curing and preventing of the patient's disease. The doctor who is interested in diagnosis alone, not in therapeutics, is an illustration, and both he and other numerous examples do in fact exist.

An Illustration of a Bad Point of View.—Let us suppose that one person in a hundred in the United States has or has had a severe disease that, if not fatal, at least renders life intensely miserable. Let us suppose that of these 700,000 patients 70,000 have been cured of this disease, that they can testify to the fact, and that hundreds of reputable physicians will also testify that it is their treatment which has given the relief. Let us suppose further that 200,000 other physicians have unconsciously drifted into the habit of ignoring the fact and the philosophy of these cures, and that most of these disbelievers are scoffers of the theory. Of those who ignore and do not scorn a number have come in some measure to see that the disease in question may be curable by the method advised. They indeed admit it and, in a way, urge it, but they add and emphasize the addition until it is the only result left in the mind that the advocates of the new truth are great exaggerators and hobby-riders. It is a truth, but, but, but, and but, again, until there is nothing but but, nothing except exceptions, left in the attention of the bewildered seeker of advice. He, indeed, if he is more interested in his patient and less in the personal, competitive, or professional standpoint of the critic, he will ask, How am I to know how far to go in the theory, when to try it or not in the cases of Mrs. Jones, Mr. Brown, and the Robinsons?

The patient's point of view may be entirely ignored through the exaggerating clamor against exaggeration and the passionate attack on hobbyriding by the critic and the evidence-weigher. He, indeed, is always more interested in the exception and the critical attitude than in the cure of a patient. He admits perhaps the limited truth, but kills it by harping on the danger of "over-enthusiasm," and buries it very deep by a hint that the specialist's interest in the matter is at bottom self-interest. "Typhoid fever may, of course, be due to contaminated city water, scarlet fever to milk, but not always, and then the sanitary cranks are not the only doctors in the world." "Headaches and sick headaches and biliousness are sometimes due to eye-troubles, but these oculists—really, you know, we can not accept the broad conclusions and extravagant statements, etc." "Disorders of digestion are sometimes due to dental troubles, but we shall hardly turn our practice over to the dentists, and go out of business, etc." And for a generation the deaths go on from pol-

luted water, one in ten continues to suffer for a lifetime with the daily agonies of headache, sick headache and biliousness, and every second child is still left with teeth unattended to. The point of the matter is that this neglect is by the leave and encouragement of the conservative and critical sneerer, until some "over-enthusiast" immolates himself on the critic's altar and by iteration does at last get the neglected truth attended to. Then the critic turns over in his grave and with the old murderous self-satisfaction he softly whispers to the over-enthusiast, his next-door neighbor, "*I told you so; I always said that this was a great truth!*"

The Patient Who is Not Advised, and if Advised Cannot Get Treatment.—Is it possible in these days of an overcrowded profession and an over-bedrugged world of patients, is it possible, one asks, that any patient cannot get medical advice and scientific treatment? Strange as it may seem, that is a fact, one over-neglected—one tremendously important. It is also a fact that the critic of specialists and hobby-riders, the weigher of evidence, the represser of over-enthusiasm needs to ponder for a few years, perhaps for the rest of his life. He thinks only of the well-to-do of the great city, or of the well-to-do of the small cities and country. He ignores the greater mass of the lower middle classes, and the yet vaster masses of the poor. These in the country—far removed from the city—frequently find it impossible to secure that expert advice which will relieve them of the original sources of their miseries. There are millions of people who are unadvised or incapable of consulting the specialist who only is capable of scientifically treating them. The self-chosen represser of "the specialist's exuberance" should put himself in their place. The general physician is the only adviser whom these millions can reach. The skill and learning necessary to cure certain affections of the ear, of the teeth, of the eye especially, of the nose and larynx and other organs, cannot be expected of the country physician, and often the patients could not pay for it if such skill were obtainable. Least of all can they consult the city specialist, especially if they have heard from the judges that these over-zealous specialists greatly exaggerate the power of abnormal dentition, eyes, ears, etc., to produce systemic disease.

"Cleaning by Vacuum."—We are slow to learn that the prevention of disease may consist in some small easily overlooked matter. When we reach a scientific conclusion, *e. g.*, as to the germ-origin of disease, we still for years neglect some simple little practical application needed to make the discovery of real use. In illustration, the *Lancet* and the Health Department of Chicago are wise in urging the great hygienic significance of a new device for cleaning carpets, furniture, etc. The broom and dust brush stir the dust up, spread it through the atmosphere for better inhalation, the residue then being left to settle where it was. The compressed air method is no better, but is even worse. The "vacuum cleaner" is a method of sucking the dust out of carpets, curtains, etc., as they lie or hang, and conveying it through rubber tubes to an exhaust cylinder

and thence to the furnace. Not only is the dust taken away, but fresh air is drawn into the rooms by the process itself. If it works as described it should be used in every household. But if of use in the home it is of course of greater service in the sick-room, in hospitals, etc., where the germs of infectious diseases are more numerous.

Homes for the Homeless Children.—The Children's Aid Society of Pennsylvania does not believe in the institutional care of homeless and destitute children. For 21 years it has been carrying on its work of finding individual homes for them, and its "Well done" will be seconded by all. New York and Boston also have similar societies, but there should be one in every city of the land. From the Pennsylvania Society's latest report we notice that of 1,076 overseen in 1902 there were:

Orphans	24
Half orphans	145
Deserted	29
Of dissolute parents	78
Of parents unmarried	47
Of invalid and insane parents	37
Of cruel parents, through S. P. C. C.	41
Of parents separated	95
Of parents unable to control	15
Vagrancy	5
From Court and Magistrates previous to passage of Juvenile Court Act	55
From almshouse authorities	317
Foundlings	4
Committed by Juvenile Court	161
From police station	3
From other sources	19
From the street	1
Total	1,076

The application of the home principle to young law-breakers is of especial interest to the public this year through the accumulation of cases of that class committed to the Society by the Juvenile Court. Since June 14, 1901, on which date the Juvenile Court Act went into effect, the Society has received by commitment from the Judges 161 children. These children were received under the following charges: Burglary, 3; larceny, 28; till-tapping, 1; malicious mischief, 2; vagrancy, 4; assault and battery, 2; incorrigible, 34; runaway, 6; abandoned, 3; delinquency, 1; homeless child, 1; neglected, 76—total, 161. They were all placed immediately, with one exception, in separate homes in the country, put into school, and were made subject to the rules of the Society; 149 of these are doing well; 2 are still on trial with but slight improvement; 3 were returned to parents by order of the Court; 7 failed to be benefited.

The result of the work in New York was that whereas in the year before the Children's Aid Society's plan was adopted, hardly one foundling in a hundred had survived in the barracks; the deathrate fell to 50% in the first year of the change, 30% in the second year, and a trifle over 10% in the fourth year; this is lower than the average foundling deathrate throughout the country.

The Barbarism of the Poorhouse Treatment of the Insane.—We have several times referred to the horrors of the system of confining the insane in poor-

houses, but the conditions in the State of Missouri are probably worse than those elsewhere in the civilized world. According to the 1901 report of the State Board of Charities (quoted in *Charities*), there are 1,260 insane persons confined in the poorhouses of the State. Dr. Charles A. Ellwood, head of the Sociological Department of the State University, writes of these insane inmates of poorhouses:

"In many cases they are kept in chains for months and years. In one poorhouse in this State are confined in chains 3 violently insane persons. One has been in chains for 15 years, one for 7 and one for 3 years. These persons live in filth and are deprived of almost every comfort. Doubtless such cases of 'barbarity,' though sufficiently frequent to make one shudder, are exceptional, but the barbarity of mere neglect is found everywhere where the insane are permitted to remain in the poorhouses, and instances of this I can report from seeing with my own eyes. Unfortunately I have had opportunity to visit only a very few almshouses in this State. But even with my limited experience I have seen an insane paralytic left lying in his own filth, shut up in a steel cell. I have seen an insane old man, dying of cancer, shut up in a steel cell and left uncared for and unattended. I have seen others half naked in their cells, 'because no clothing could be kept upon them.' Reports by my students from almshouses I have not seen have confirmed my belief that such neglect as this is common in all almshouses in the State in which the insane are kept."

The Tragedy of the Homeless and Friendless.—In the year 1902, in the Borough of Manhattan, there died of tuberculosis, chiefly in the various hospitals of the city, 1,787 patients. Of these 950 were "not known" at the addresses given; 456 gave no address; 275 gave the address of a lodging house; and 106 gave an address outside of the city. It must be remembered that these deaths constitute only about one-seventh of all the deaths that took place. Moreover, for every death there are, according to Dr. Farr, about two years of illness endured. When one thinks how much our happiness, even in health, depends upon home and love and friendship, and that in illness and death the blessedness of these things is vastly increased; and then when one realizes that there are so many thousands of the sick and dying in our cities utterly homeless and friendless, the pity of it all becomes, indeed, terrible. The tragedy of obviably disease and needless death kindles our zeal to stop the spread of infection, to discover the means of preventing the suffering, and when this is not possible, to surround the lonely sick and dying with the best medical skill, attention, and kindness that is possible. The desolation of their appalling loneliness is often doubtless greater than that of their illness and oncoming death combined.

The Financial Argument For and Against Sec-tarianism.—The same mail brings us two sorry evidences of pitiable bigotry. The first is from a "regular" who, by grammar and spelling that would make a fonetik reformer laf, and by arguments that would make a logician grin, fights vociferously against the attempt of the American Medical Association to unite the profession in some kind of effective organization. The source of the movement is traced to the desire of the editor of the Association journal to increase the circulation of the journal, and also his "selera"

(salary), and he will have no reform "tainted with homeopathy." The specialists also aid, he says, in order to get consultations with the hated irregulars. His printed circulars, letterheads, etc., seem to show that he has some following. His earnestness is quite equal to his ignorance. The second proof comes from the other side, and is as silly and wrongheaded. We can do no better than to quote from the *Medical Century* of March, 1903:

"Getting right down to the milk in the cocoanut, the whole scheme of union of the schools, as promulgated by the American Medical Association, is simply to get us out of the way. Our success has staggered them; they know that wherever there is a homeopathic physician there is a prosperous practitioner; that wherever a homeopathic physician is employed there is wealth, intelligence and culture; they know that in communities where there are ten allopaths to one homeopath, the latter has the cream of the business and is pulling the silver door-knobs. Why? Because we are trading on a name? By no means; simply because we have the success. It is our success, our growth, our progress that is making inroads upon our brethren of the old school. We are getting some of the plums in municipal, State and national institutions; our colleges are growing, and our threatened movement along the line to strengthen our fortifications has excited an unrest among our enemies. It is more their own financial interests that are involved than ours; it has ever been a thorn in their flesh that they could not perfect a medical monopoly. . . . It is the homeopathic scalp that is wanted. When that is obtained the financial interests of the sectarian schools and journals will be out of the way, and their own financial horizon cleared. . . . We prefer to hold to our 'invested interests' a while longer."

Except the last sentence there is not a word or glimmer of truth in the contention of either contender. If either of these malignant dunderheads had a spark of true professional feeling he would welcome every attempt to extinguish sectarianism in medicine.

The Notification of Chickenpox.—Iowa is the Massachusetts of the west, and, like her eastern prototype, is in the vanguard of sanitary progress. The latest regulation put into force is the notifying and placarding of chickenpox. At present this is confined to Des Moines, but no doubt it will soon be adopted by other cities in the State. There is a possibility that boards of health may go to extremes in the matter of notification, and we must confess that we scarcely think it necessary to placard the house in which there is a case of chickenpox. During the prevalence of an epidemic of smallpox we should favor having all cases of chickenpox reported to the authorities, because many cases of variola are then likely to be treated, either wilfully or unintentionally, as chickenpox. Anything more than this, however, is probably too drastic. There is just as much, or just as little, reason for reporting and quarantining all cases of sore throat, because some of them might turn out to be diphtheria.

Vacuum Apparatus for House Cleaning.—The Chicago Department of Public Health advocates the vacuum method for house cleaning. This consists of a mechanical apparatus consisting of tubes of varying lengths, which are conveyed to different apartments. The dust and dirt particles are picked up and carried to a central receiver by a suction force, which eliminates all dirt and dust and does away with the necessity of taking up carpets, the removal of upholstery, furniture, etc. It is said to be especially applicable for the sick-room, from which the ever gathering dust can be removed without fear of contamination.

AMERICAN NEWS AND NOTES.

GENERAL.

The American Urological Association will hold its annual meeting in New Orleans, La., May 8 and 9.

Smallpox, as officially reported in the United States from December 27, 1902, to March 20, 1903, amounts to 12,281 cases and 369 deaths, as against 24,157 cases and 707 deaths for the corresponding period of last year.

The National Confederation of State Medical Examining and Licensing Boards will meet in New Orleans, La., May 4, 1903. Members and ex-members of State Medical Examining Boards, physicians and educators who are interested in higher medical education are cordially invited to attend.

Deaths Due to Accidents.—According to the United States census a person is twice as liable to die from accident as from old age, and people die more frequently from accidents in the mountainous regions of the country than on the coast. It appears on the whole that nearly 6% of all deaths in the country are due to accidental injuries, the average age of death from accidents being about 33½ years.

Lepers to be Colonized in the Philippine Islands.—It has been decided that the proper method of treating lepers in the Philippine Islands is to colonize them at a central point, and the island of Camalin has been selected for this purpose. The colony will be to a certain extent self-governing, since a number of the lepers are persons of high intelligence and ability and capable of participating in the governmental affairs of the colony. All recent cases will be segregated from those which are chronic in character and marriages will not be permitted. Near relatives and friends will be permitted to visit the patients at certain times under restrictions. Plots of ground will be assigned to the various patients and implements given them. Vegetables and fruit may be grown to assist in sustaining the members of the colony.

Contagious and Infectious Diseases Among Animals.—The Department of Agriculture has announced a new code of regulations for the suppression and eradication of contagious and infectious diseases among domestic animals. It is required that all persons owning, managing, or transporting animals must ascertain that they are not affected with nor exposed in any manner to contagious or infectious disease. Persons having charge of affected or exposed animals must keep them segregated from other animals, and premises or vehicles where diseased or exposed animals have been shall not be occupied by healthy animals until thoroughly disinfected. Any place where there exists contagious or infectious disease among animals is to be considered an infected locality and the conveyance of susceptible animals into or through an infected locality will be governed by these regulations and any subsequent orders of the Secretary of Agriculture; vehicles used for their transportation must be cleaned or disinfected according to the Secretary's orders. The shipment or removal of hay, straw, fodder, or other similar materials, or of meats, hides, or other animal products, through an infected locality is prohibited. Shipments of live stock and products may be stopped in transportation for inspection and disposed of if found liable to disseminate contagion. Violations of these regulations are made punishable by a fine of \$100 to \$1,000, or by imprisonment not exceeding one year, or both fine and imprisonment.

Hospital Benefactions.—BALTIMORE, MD.: Under the will of the late Lavinia E. Frey, of this city, the Presbyterian Eye, Ear, and Throat Charity Hospital will receive \$500. PHILADELPHIA, PA.: Under the will of the late William McClary, which was recently adjudicated, many bequests are left to charities and other institutions. Among these is \$5,000 to the Protestant Episcopal Hospital to endow a bed in memory of the testator's dead wife, Esther J. McClary, the Church of the Nativity to name occupants. Sums of \$5,000 each are also left to endow beds in the Presbyterian, German, St. Joseph's, and Samaritan Hospitals.—Under the will of the late J. Alfred Kay, \$5,000 each is allowed to the Pennsylvania, Germantown, University, Jefferson, Orthopedic and Polyclinic Hospitals. St. Agnes', St. Joseph's, German, Gynecean, Howard, Medico-Chirurgical, Jewish, Hahnemann, and Presbyterian Hospitals will each receive \$1,000. A similar amount was given to the Pennsylvania Institution for the Instruction of the Blind, Philadelphia Dispensary, and the Howard Hospital and Infirmary for Incurables. One-sixth of the residuary estate not named is divided among the Pennsylvania, Germantown, University, Jefferson, Orthopedic and Polyclinic Hospitals. PATERSON, N. J.: The Paterson General Hospital, St. Joseph's Hospital, Paterson Orphan Asylum, and the Catholic Orphan Asylum will each benefit \$25,000 by the death of William D. Laverack, of this city, which occurred recently. These are bequests from the late Mary Laverack, who left all her estate, which amounted to over \$100,000, to Mr. Laverack during his life. At his death, if he had no children, it was to be equally

divided among the two orphan asylums and the two hospitals. Mr. Laverack married, but had no children. DOVER, N. H.: The late Aricoh Wentworth, of Swampscott, Mass., has bequeathed \$100,000 to the town of Dover, N. H., for the erection of a hospital to be called the "Wentworth Hospital."

Typhoid Fever and Its Mortality.—From the Registrar of Vital Statistics of the New York Health Department are obtained statistics which give us some idea of the relative prevalence of typhoid fever and its mortality in the various large cities of the United States and in foreign countries. From these it will be seen that the capital city of the United States, whose municipal administration is practically under the control of Congress, has the highest mortality of any other American city, while among foreign countries the comparative rarity of the disease and its mortality are strikingly different. The rigid administration of sanitary law and the careful supervision of the water-supply are doubtless the most important factors in these strikingly divergent figures:

AMERICAN CITIES.

	Population.	Deaths.	Deathrate per 10,000.
Washington.....	278,718	161	5.78
Chicago.....	1,698,575	509	3.00
Boston.....	573,579	142	2.48
Philadelphia.....	1,321,408	444	3.36
Providence.....	178,000	47	2.64
New York.....	3,536,517	727	2.06
St. Louis.....	598,000	198	3.31
San Francisco.....	369,000	70	1.94

FOREIGN CITIES.

Belfast.....	351,083	349	9.94
St. Petersburg.....	1,248,643	1,060	8.49
Cairo.....	608,910	485	7.96
Glasgow.....	764,467	198	2.59
Liverpool.....	686,451	165	2.41
Dublin.....	376,081	104	2.77
London.....	4,544,983	548	1.21
Paris.....	2,660,559	343	1.29
Berlin.....	1,891,900	88	0.47
Vienna.....	1,735,740	76	0.44
Munich.....	503,000	24	0.48

NEW YORK.

Deaf to Hear.—It is reported that a device resembling an ordinary telephone has been invented by an electrician of New York, which when placed in the vicinity of the ear of a deaf person will enable him to hear distinctly. The outcome of this reported discovery will be awaited with interest.

Coroner's Bill Passed.—The bill abolishing the Board of Coroners in New York City has passed the Senate. The act authorizes the Board of Health of New York City to appoint a chief medical examiner at \$6,000, and medical examiners at \$3,500, to take the place of the coroners at present in office, and whose terms do not expire for three years to come. The investigations of crime are to be made by the city magistrates and by the district attorney.

Registered Nurses.—The bill before the New York Legislature, which requires nurses to appear before a board of examiners to receive the degree of Trained Nurse before they can follow their vocation in that State, is likely to be amended. The proposed amendment provides that any nurse who has been practising her profession in the State to the exclusion of all other business for five years prior to the passage of the act and whose character and qualifications are endorsed by three licensed physicians of the State may be registered and entitled to the distinguishing mark of R. N. (registered nurse), provided the application therefor be made prior to July next.

PHILADELPHIA, PENNSYLVANIA, ETC.

Joined Twins.—Dr. J. H. Sargent, of Philadelphia, was attending physician at the birth of male twins united in exactly the same manner as were the famous Siamese brothers. The mother was a young married woman in the southern portion of the city. A band of flesh about seven inches long united the thorax of one child to that of the other. Neither child lived.

German Hospital.—The forty-third annual report of the medical board of the German Hospital has just been issued. During the year there were 2,715 patients admitted to the hospital proper and 355 patients were received in the Marine Hospital department. There were 1,615 surgical operations performed and in the various clinics of the dispensary service 41,909 patients were treated.

Health of Philadelphia.—A slight decrease has been noted in the number of cases of typhoid fever reported for the week ended March 21. In all 247 cases were reported with 27 deaths, as against 272 cases and 38 deaths for the preceding week. There were 26 new cases of smallpox and 1 death, as against 44 cases and 5 deaths in the previous week. The whole number of deaths from all causes was 535, showing a falling off of 42 as compared with the foregoing week and an increase of 59 as compared with a report of the corresponding week of last year.

Preparing for Bids on New Hospitals.—It is stated that within the next few days proposals will be received for the erection of the hospital for the insane and for the indigent on the sites selected adjoining the House of Correction at Holmsburg. Those in authority state that contracts for the work will be awarded by the end of the present month. The administration building and the new wards for the Hospital for the Insane are to be pushed as rapidly as possible to provide sufficient accommodations for the nearly 1,500 insane patients now in the old hospital in West Philadelphia. When completed the new Hospital for the Insane will accommodate 3,000.

State Bacteriologic Laboratory.—A bill was recently introduced into the Pennsylvania Legislature appropriating \$25,000 for the establishment of a bacteriologic laboratory at Harrisburg. It also provides for the appointment of a chief by the Governor, at an annual salary of \$5,000. The urgent need of such an institution is clearly set forth in the preamble of the bill, which states "there are many acute specific diseases prevalent in the State which are caused by certain known germs, such as tuberculosis, diphtheria, typhoid fever, etc., and whereas, our seaports are subject to an invasion of bubonic plague, cholera and other infectious diseases; and whereas, the State Board of Health is often called upon to make an analysis of water for the typhoid fever bacilli by many boroughs and townships throughout the State, and has not the facilities for so doing; and whereas, such a laboratory would be a sure means of determining the nature of such infectious and contagious diseases, thereby preventing epidemics and the useless sacrifice of human life. . . ."

New Jefferson Hospital.—It is announced that the demolition of the old buildings, at present occupying the site upon which the new hospital is to be erected, will be started at once, and that so soon as the appropriation expected from the Legislature is received work will be begun on the superstructure. The proposed new hospital will be an absolutely fireproof structure six stories in height with a basement and roof-garden. The basement will contain the power plant, x-ray-room, incinerating plant, and postmortem and disinfecting rooms. The administration office, eye department, men's receiving ward, surgical, and out-patient departments will be on the first floor, while on the second floor will be the men's department, with a semicircular surgical ward, operating-rooms, medical ward, dining-rooms, quiet-rooms, baths, etc. The women's department, similarly arranged, will occupy the third floor. On the fourth floor will be the children's ward, while on the fifth there will be 29 bed-rooms, drug-rooms, diet kitchens, etc. The sixth floor will contain dining-rooms, private wards, storage-rooms, etc. The cost will aggregate \$700,000.

The Philadelphia Polyclinic has established a phototherapeutic department and is prepared to treat patients with concentrated chemical rays of light and with the Röntgen rays. The installation of a new and powerful electric coil also offers increased facilities for radiography. A limited number of poor and deserving patients will be treated without charge, but from those who are able to pay, a moderate charge will be made for the treatment. The professor of diseases of the skin will examine each patient and determine the character of the treatment to be employed. The department is prepared to undertake the examination of patients referred to it for Röntgen ray diagnosis. Each application should be accompanied by a statement of the nature of the case, an outline of the history and a careful explanation of the diagnosis desired. No patient will be examined unless referred by a physician. A graded fee will be charged according to the nature of the part to be examined. The lamp to be used for the Finsen light treatment was made in England and is said to be a marked improvement upon the original. The Polyclinic is the first medical institution of Philadelphia to procure from Europe such an apparatus.

Higher Requirements for Doctors.—A bill has been introduced into the Pennsylvania Legislature which is intended to elevate the medical profession from the standpoint of preliminary education. It is also intended to amend the Medical Council Act of 1893, which establishes three State Boards of Medical Examiners. Under the present law the Council selects the questions to be submitted at each examination. The bill proposes to so amend the present law as to permit only the medical members of the Council to pass upon the questions submitted, and also that a certificate granted shall have inscribed upon it the name of the particular board under which the licentiate was examined. The educational test requires from candidates for license to practise medicine a diploma of graduation from a reputable college or university, or a diploma of graduation after a four years' course at a State normal, a high school, or academy, or a certificate of having passed the examinations for admission to the freshman class of a reputable literary or scientific college or university. After January 1, 1907, the bill provides that applicants for license must furnish proof that they have pursued the study of medicine "for four years, for at least eight months in each year in four different calendar years in some legally incorporated reputable medical college." At a meeting of physicians held recently in Philadelphia it was declared that the welfare of citizens would be much advanced by the passage of this bill, and it was therefore heartily

endorsed by the members of the profession present, and it was resolved to petition the authorities for its enactment into a law.

SOUTHERN STATES.

Röntgen Rays in Trachoma.—It is asserted that a patient with trachoma has been successfully treated at the Maryland General Hospital by exposing the eyelids to the Röntgen rays. The treatments were given three times a week, the duration of each being from 7 to 10 minutes. It is stated that a cure was effected in about two months.

WESTERN STATES.

Compulsory Vaccination for Waiters.—The Bulletin of the Health Department of Chicago for the week ended March 14, 1903, states that a prominent club in the city, which frequently employs from 40 to 60 colored waiters and attendants, has adopted a standard rule requiring satisfactory evidence of recent successful vaccination as a condition of employment in any capacity about the club-rooms. The example should be followed by every club in the city.

Persons Suffering from Tuberculosis to be Excluded from California.—It is announced that the committee appointed to investigate conditions concerning the ingress of the tuberculous into California from other States will recommend to the Legislature measures restricting such persons from coming to the coast. It was also decided not to advise the establishment of a State Sanatorium for the treatment of tuberculosis as it is believed such a project would encourage the tuberculous to come to the State.

Hydrophobia in Chicago.—The death by hydrophobia of a son of Dr. Henry P. Loomis, of Chicago, has called attention to the unusual prevalence of rabies in the city. It is reported that the Pasteur Institute is receiving many more than its usual quota of patients at this season of the year. The Health Department, which has also under its care patients whose cases may eventuate in rabies, likewise reports unusual activity. The seriousness of the condition is probably overestimated from newspaper reports, but there still probably remains some ground for the manifest interest taken.

To Restrict Practice of State Employes.—The following is taken from the *Journal American Medical Association*: The resolutions recently adopted by the San Joaquin Medical Society, directed against private practice by the physicians at the State hospitals, have been crystallized into a bill which has the following provisions:

The medical superintendents and assistant physicians of the several State hospitals for insane persons must not engage in the private practice of medicine, but must devote their whole time to the performance of their duties, unless granted leave of absence by the board of directors. If any of such physicians shall engage in the private practice of medicine his office shall thereon become vacant, and the board of directors, or other appointing power, shall immediately appoint some qualified person, other than the officer whose office shall have become so vacant, to fill such vacancy.

Physicians Again Duped.—From Indianapolis (Ind.) comes the news that two young men, who represented themselves as agents of the "Medical Alliance of America," victimized about 100 physicians and business men in that city. The doctors were to pay an initiation fee of \$10 and \$1 a year dues and furnish a list of patrons to the "Alliance," which was incorporated by one of the young men in question. The agents then went among the patrons of the physicians and induced a number to become members of the alliance by paying an initiation fee of \$1, in lieu of which they were promised free medical attention. Others joined at \$2 a head. The alliance was to issue policies for the payment of death benefits, etc. They secured about \$5,000 in money. The young men disappeared, leaving their victims wiser, somewhat poorer and with the "alliance" on their hands.

To Eradicate Plague in San Francisco.—According to the Public Health Reports active measures for the eradication of plague are being enforced daily. Overcrowding in tenement and lodging houses has been prevented and over 200 arrests have been made for a neglect to comply with the cubic air-space ordinance. Scavengers are employed to remove garbage frequently, sweep the streets, and sprinkle them afterward with HgCl₂ solution three times a week. Lining of unsanitary places, such as closets, urinals, cellars, back areas, and unclean alleyways, is progressing rapidly, and at the completion of this form of disinfection the same territory will be covered again, using instead carbolic acid spray. The sick are inspected daily, the dead examined carefully, and necropsies insisted upon in doubtful cases in order that no case of plague escape detection. The extermination of rats by means of traps and poisons continues unabated.

Increased Birthrate of Chicago.—The Bulletin of the Health Department, in discussing the increased birthrate of the city, proves conclusively that it cannot be attributed to the

great numbers of immigrants who have settled in the city. It states that of the three principal cities having populations of more than 1,000,000 each in 1900, Chicago had next to the largest proportion of "native born," and a larger proportion even than the typical American city—Boston. The following figures are from the twelfth United States census:

	Native population.	Native born.	Native born, per cent.
New York.....	3,437,202	2,167,122	63 0
Chicago.....	1,698,575	1,111,463	65.4
Philadelphia.....	1,293,697	998,357	73.2
St. Louis.....	575,238	463,882	80.6
Boston.....	560,892	363,763	64.9
Baltimore.....	508,957	440,357	86.5

Philadelphia, St. Louis and Baltimore are out of the immigration wave; immigrants are not attracted and do not settle in these cities—therefore no comparison can be made with them. Eliminate these cities, and it is seen that Chicago has the largest proportion of native born population of the important cities of the country, and that its increasing birthrate cannot properly be attributed to the immigration factor.

CANADA.

New Medical Building for the University of Toronto.—According to the *Chicago Medical Recorder*, a deputation from the medical faculty of the University of Toronto waited on the Premier of Ontario recently to ask for a further grant of \$50,000 to finish and equip the new medical buildings now nearing completion in the Queen's Park, Toronto. The original sum of \$125,000 has been found inadequate, and the medical faculty seeks to borrow another \$50,000. This building when completed will be the finest type of modern college building on the North American continent. It has been constructed on the "unit system," the standard size of the class-rooms being 23 by 30 feet. The lecture-rooms are supplied by a number of "research" rooms in which students can carry on independent investigations. It is the first university building to be constructed on this unit principle since it was laid down. Toronto University now has the largest number of medical students of any Canadian university, even leading McGill, which for so many years took first place. There are at present 420 medical students on the rolls.

FOREIGN NEWS AND NOTES

GENERAL.

First Medical College for Women in China.—A medical college for women was opened with appropriate ceremony in Canton, China, December 17, 1902, by the United States Council. Many missionaries participated in the ceremonies and a high tribute was paid to Doctor Mary Fulton, who has labored long and extensively among the Chinese. It is said that 13 young women are studying medicine in the institution and the applicants for admission for next year already number 60.

GREAT BRITAIN.

Antityphoid Serum.—Trustworthy information is at hand to the effect that Lord Lister has communicated to the Royal Society a paper by Dr. Allen MacFayden, director of the Jenner Institute of Preventive Medicine. Lord Lister sets forth a prophylactic and curative treatment for typhoid fever, as worked out by Dr. MacFayden, who it is claimed found that the cellular juices obtained by crushing typhoid bacilli in liquid air can be used for the purpose of injection. It acts as a curative agent and as a means of prophylaxis in the treatment of typhoid fever. Practical results from this reported discovery will be awaited before much credence will be placed in this novel theory.

Measles in London.—It is stated that measles is very prevalent in London, and while it is not one of the diseases requiring compulsory notification, yet the London County Council are reported to be taking active steps to combat its spread. It appears that the public schools are the particular avenues of dissemination. That death from measles is more common among children than is ordinarily supposed is illustrated by the fact that in London in the year 1901 there were 1,952 deaths reported from the disease, which is equal to a death-rate of 0.43 to each 1,000 persons living, whereas the mortality from scarlet fever the same year was only 0.13, and diphtheria showed 0.20; whoopingcough for the same period, 0.35.

CONTINENTAL EUROPE.

Endowment for Hospital Bed.—It is asserted that Mrs. Robert Goelet, of New York, has given \$2,500 to endow an American bed in the Victoria Hospital of Nice, France, in memory of her daughter Beatrice. The only other American bed in the hospital was endowed five years ago by Andrew Carnegie.

Bacteria to Give Light.—Prof. Hans Molisch, of Prague, believes he has discovered a use for bacteria in a mining lamp. The lamp consists of a glass jar in which there is a lining of potassium nitrate and gelatin previously inoculated with bacteria. The latter multiply enormously in two days, causing the jar to become illuminated with a bluish green light. This lasts brilliantly for several days, gradually dimming until it disappears in from two to three weeks. It is stated that the lamp thus provided is suitable for mines, powder magazines and other places where explosives are likely to be kept.

OBITUARIES.

Edward W. Jenks, of Detroit, Mich., March 19, aged 70. He was graduated from the Bellevue Hospital College, New York City, in 1864. He was a Fellow of the American Gynecological Society and Obstetrical Society of London, Eng.; a member of the American Medical Association and Detroit Academy of Medicine; honorary member of the Ohio State Medical Society, Maine Medical Association, and the Cincinnati Obstetrical Society; and ex-president of the Michigan State Medical Society. He had been a member of the Michigan State Board of Corrections since 1894.

Major Norton Strong, a retired army surgeon, died in Baltimore, Md., March 23, aged 51. He was a graduate of Harvard Medical School, and after leaving that institution he went to St. Luke's Hospital, in Chicago, where he earned quite a reputation as a bacteriologist. In 1880 he was appointed to the position of surgeon in the United States Army.

T. Harper Rice, at Pottstown, Pa., March 14. He was a graduate of the medical department of the University of Pennsylvania, Philadelphia, and was also a licentiate of the Royal College of Physicians, London, and of the Royal College of Surgeons, Edinburgh. He served as surgeon in the Boer army during the South-African war.

J. Augustus Carnross, of Philadelphia, March 19, aged 58. He was graduated from the Jefferson Medical College in 1876. He was connected with the State Hospital for the Insane at Warren, Pa., and the Philadelphia Hospital. He was a member of the Philadelphia County Medical Society and of the Philadelphia Medical Club.

Charles A. McCall, of Philadelphia, March 12, aged 67. He was graduated from the medical department of the University of Pennsylvania, Philadelphia, in 1855, and afterward served for several years as chief resident physician in the Pennsylvania Hospital. He served as assistant surgeon in the Civil war.

John H. B. Browning, at Smithtown Branch, L. I., March 17. He was graduated from the Columbian University Medical School, New York City, in 1883, and was at times assistant resident physician of the insane asylum on Ward's Island and house physician and surgeon of St. Francis' Hospital.

Samuel McLean, of Hillisboro, Ill., March 18, aged 56. He was graduated from the Eclectic Medical Institute, Cincinnati, Ohio, in 1874, and at the time of his death was superintendent of the Illinois Asylum for Feeble-minded Children at Lincoln, Ill.

James J. Larkin, of Chicago, Ill., March 12, aged 49. He was graduated from the Chicago Medical College in 1830. He was a member of the Chicago Medical Society and Physicians' Club and was surgeon to the South Chicago Hospital.

Levi B. Ward, in Canon City, Colo., February 21, aged 37. He was graduated from the Kentucky School of Medicine, Louisville, in 1896, and was a member of the Colorado State and Fremont County Medical Societies.

Henry R. Potter, of Bismarck, N. D., died at Agra, India, March 3, aged 55. He was graduated from the University of Georgetown, Washington, D. C., in 1872. He was an acting assistant surgeon in the Army.

Walter W. Bunyan, at Chicago, Ill., March 16. He was graduated from the Northwestern University Medical School in 1901, and at the time of his death was serving as interne in the Cook County Hospital.

Joseph C. Shepard, of Wilmington, N. C., March 5, aged 63. He was graduated from the New York University in 1860, and served as a surgeon in the Confederate army during the Civil war.

Jonathan Cilly, of Cincinnati, Ohio, March 18, aged 65. He was graduated from the Miami Medical College, Cincinnati, Ohio, in 1866. He served as an army surgeon during the Civil war.

Rutherford R. Price, of Toronto, Ohio, died at Phoenix, Arizona, February 26. He was graduated from the Western Pennsylvania Medical College, Pittsburg, in 1900.

Frank Merritt, of Charlotte, Mich., March 17. He was graduated from the Detroit Medical College, Detroit, Mich., in 1877. He served two terms as Mayor of Charlotte.

Benjamin P. Hooke, of Loysville, Pa., March 11. He was graduated from the medical department of the University of Pennsylvania, Philadelphia, in 1855.

George W. Smith, of Monongah, W. Va., at Fairmount, W. Va., February 26, aged 28. He was graduated from the Rush Medical College, Chicago, in 1894.

William F. G. Noetting, in East Hampton, Conn., February 28, aged 83. He was graduated from the University of Heidelberg, Germany, in 1842.

John N. Kendig, of Akron, Ohio, in Cincinnati, Ohio, February 26, aged 28. He was graduated from the University of Maryland, Baltimore, in 1898.

John K. Faust, at Hyndman, Md., March 8, aged 68. He was graduated from the College of Physicians and Surgeons, Baltimore, Md., in 1886.

Theodore A. Grover, at Wilmington, Del., March 6, aged 63. He was graduated from the Starling Medical College, Columbus, Ohio, in 1869.

Henry Edward Newell, in West Derry, N. H., February 24, aged 51. He was graduated from the Long Island College Hospital, Brooklyn, in 1873.

William Campbell Goodlett, in St. Louis, Mo., March 1, aged 80. He was graduated from the University of Pennsylvania, Philadelphia, in 1849.

Richard D. Greene, in Lexington, Ky., February 25, aged 63. He was graduated from the Bellevue Hospital Medical College, New York, in 1867.

James Henry Dugan, of La Salle, Ill., March 2, aged 30. He was graduated from the College of Physicians and Surgeons, Chicago, in 1899.

J. R. Simms, in Linden, Cal., February 27, aged 82. He was graduated from the Medical School of the Valley of Virginia, Winchester, in 1849.

William H. Baird, of Oxford, Miss., died at Jackson, Tenn., March 5. He was graduated from the Tulane University, New Orleans, in 1869.

Daniel C. Dickinson, in Union Hall, Va., March 6, aged 45. He was graduated from the Medical College of Virginia, Richmond, in 1878.

Sherburne R. Merrill, in Paterson, N. J., March 16, aged 81. He was graduated from the Jefferson Medical College, Philadelphia, in 1851.

Enoch P. Jones, in Marion, Ind., February 26, aged 75. He was graduated from the Eclectic Medical Institute, Cincinnati, Ohio, in 1854.

Noyes Barstow, a retired physician of Springfield, Mass., March 16, aged 82. He was a graduate of the medical school at Woodstock, Vt.

Elliott W. Leech, in Shelbyville, Ind., March 5, aged 70. He was graduated from the Kentucky School of Medicine, Louisville, in 1891.

James C. Patton, in Francisco, Ind., February 19, aged 76. He was graduated from the Medical College of Evansville, Ind., in 1850.

George W. Bishop, in Snow Hill, Md., March 6, aged 76. He was graduated from the Jefferson Medical College, Philadelphia, in 1848.

H. T. Bass, at Tarboro, N. C., March 16. He was graduated from the medical department of the University of Pennsylvania in 1874.

Charles W. Roberts, of Scranton, Pa., March 21. He was graduated from the Hahnemann Medical College, Philadelphia, in 1889.

John Graham, in Plainville, Ill., February 23, aged 65. He was graduated from the Eclectic Medical Institute, Cincinnati, in 1878.

Francis Rourk, in Detroit, Mich., February 22, aged 61. He was graduated from the University of Maryland, Baltimore, in 1865.

Benjamin M. Van Sickle, at Newark, N. J., March 15, aged 46. He was a graduate of Bellevue Medical College, New York City.

Albert B. McKee, of Edwardsville, Ill., March 17, aged 40. He was graduated from the Rush Medical College, Chicago, in 1893.

David F. Rupp, in San Diego, Cal., February 25, aged 53. He was graduated from the Kansas City Medical College in 1879.

John N. Davis, of Boulder, Colo., February 22. He was graduated from the Eclectic Medical Institute, Cincinnati, in 1880.

Edward E. McCall, at Lima, Ohio, March 23, aged 37. He was graduated from the Baltimore Medical College in 1894.

Samuel C. Hanford, in Hempstead, L. I., February 24, aged 80. He was graduated from the New York University in 1845.

Jonathan Baker, at Des Moines, Iowa, March 15. He was graduated from the Chicago Physio-Medical College in 1888.

L. W. Bishop, in Batavia, Ohio, February 27. He was graduated from the Medical School of Ohio, Cincinnati, in 1870.

Edward R. Kittoe, in Galena, Ill., February 18, aged 57. He was graduated from the Chicago Medical College in 1869.

Henry W. Richter, in Brooklyn, N. Y., March 4, aged 63. He was graduated from the New York University in 1861.

Lester Joslin, in Ionia, Mich., February 26. He was graduated from the Cleveland Medical College in 1867.

T. W. Wright, in Farmington, Iowa, March 1. He was a graduate of the Keokuk (Iowa) Medical College.

H. Hungerford Drake, of Winsted, Conn., March 16, aged 70.

Hezekiah Henry Bean, at Baltimore, Md., March 18, aged 83.

William J. Enders, in Hamilton, Ohio, March 7, aged 26.

John McCormick, of Shubuta, Miss., March 17, aged 29.

A. D. Griffin, in Vinton, Iowa, February 25.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

THE STUDY OF DIFFERENTIAL DIAGNOSIS.

BY

JOHN L. BURNHAM, M.D.,
of Las Cruces, N. M.

The following cases, which have come to me during the year, illustrate the difficulties that must be contended with in an isolated district where cases cannot be referred to the specialist:

CASE I.—A Mexican had been treated for three months by other physicians for dysentery with no relief. The patient coming to me, after one week of fruitless treatment upon ordinary lines I examined a fresh specimen of feces microscopically and found the feces swarming with *Amoeba coli*. Two weeks' use of quinin, 1-1,000 enemas, cleared the feces from amoeba, and the patient made a fair recovery.

CASE II.—A young woman of 17 had been treated a year by several physicians for chronic bronchitis and asthma. Coming to me, my examination showed exophthalmic goiter, two of the cardinal symptoms being present, rapid heart and paroxysmal palpitation with dyspnea, and goiter present. Exophthalmos was wanting. Laryngeal cough, presumably from pressure on recurrent laryngeals, furnished "chronic bronchitis," and paroxysms of tachycardia with dyspnea and the "asthma." Patient was well in six months.

CASE III.—A girl of 12 for six months had been treated by several physicians for "tonsillitis," "wry neck," "neuralgia" of occipital region extending to top of head and down on front of neck. My examination showed head and neck rigid—a case of caries of the upper cervical vertebra. Rest in bed with confinement of joint brought about great amelioration in a month, with subsequent steady improvement. The cause of the symptoms was discovered and the patient treated accordingly.

CASE IV.—For a year a cowboy had noticed a lump in the pit of his stomach, which slowly increased in size and became tender and painful after a day's work in the saddle. His physician diagnosed "chronic abscess," and advised incision. Physician and patient came to my office for advice, and operation if necessary. Examination revealed a boggy tumor, the size of a large hen's egg, in the middle line about midway between the umbilicus and the ensiform cartilage, slight impulse on coughing, not tympanitic. Putting patient on his back with shoulders raised, gentle taxis restored the "abscess" to the abdominal cavity—an omental epigastric hernia. The results of incision can be imagined.

My guiding principles from the beginning of my practice of medicine in the study and treatment of the sick have been two maxims of two of my teachers—Professor P. S. Connor, who said, "Take no man's diagnosis; make up your own mind from your own study of the case;" and Professor C. P. Nancrede, who gave as a definition of skill "A knowledge of what will and may happen, and attention to detail."

APOMORPHIA HYDROCHLORATE.

BY

EDWIN R. SHANNON, M.D.,
of Waterloo, Iowa.

Previous to 1896 my knowledge of this drug consisted of its value as an active emetic. In the summer of that year I found myself early one morning with strength and patience nearly exhausted, having been in attendance nearly the whole night upon a young woman suffering (or causing me to suffer) with hysteroepilepsy. The usual antispasmodic treatment had proved futile, and chloroform was finally resorted to, which gave only temporary relief.

Having lost patience and perhaps sympathy because of the obstinacy and character of the case, it occurred to me that a restful change in picture and symptoms might be secured by giving an emetic. Apomorphia was then administered in full emetic dose and my surprise and satisfaction were intense when, after an unnecessarily severe vomiting spell, the patient relaxed and fell into a peaceful sleep, giving me no more trouble for several months, when a recurring attack was quickly relieved by smaller doses of the same drug. I learned later that Gowers had recommended the drug in this form of hysteria.

In 1897 I was called to see a man of 76, who had been hiccupping constantly for six days. He had been under the care of several physicians and on account of his age and extreme debility little hope of recovery was entertained. I gave him 3 mg. ($\frac{1}{20}$ grain) of apomorphia hydrochlorate; nausea and alarming heart weakness followed in a few minutes, succeeded, however, within 15 minutes by relief from the hiccup. I found it necessary within the next three days to give only two more doses of 2 mg. ($\frac{1}{20}$ grain), after which the patient made rapid recovery and is still alive.

In June, 1902, I was called to attend a married woman whom I found in a most alarming condition of suffering; nearly every muscle of her body was in spasmodic contraction, so intense about the neck and back as to produce opisthotonos. I could learn nothing from her as she was in a state of delirium from pain. Her husband informed me that she had experienced dozens of these attacks, that a number of physicians had attended her during seizures, that she had contracted the morphin habit from the treatment thereof, and that chloroform had been the only means of giving relief. Now, I had tried that all-night chloroform treatment before, and here was a case with manifestly no inflammatory or organic lesion, and apomorphia occurred to me at once. Three mg. ($\frac{1}{20}$ grain) were administered, and I left my patient asleep in 20 minutes.

There are two other conditions in which this drug has been quite uniformly useful to me: The insomnia of acute alcoholism and angina pectoris. It is not the purpose of this paper to define the exact diagnostic conditions calling for this remedy or to formulate a theory of its action. The cases cited do both in a practical way.

The dosage should be as light as possible, preferably to secure nausea without emesis. Ordinarily 3 mg. ($\frac{1}{20}$ grain) hypodermically is about the proper dose, though in old people this may be too much. In the whole domain of medicine no drug has given me so much satisfaction as this, for its results are immediate and positive, and the class of cases calling for its use are usually the most trying that a physician is called upon to attend. If the reported action of this drug will be the means of doing my readers any part of the good it has done some of my colleagues and myself I shall feel well repaid for this effort.

NEVUS OF THE MOUTH.¹

BY

FREDERIC GRIFFITH, M.D.,
of New York City.

Surgeon Bellevue Dispensary; Fellow of the New York Academy of Medicine.

The patient, aged 25, is a Jewess, brunet, and single. She consulted me in February, 1903, in regard to a congenital formation. The growth was situated upon the right side of the mouth cavity and consisted externally of the bulged lips and corner of the mouth, extending backward to the anterior border of the masseter muscle. The tumor was purplish-red in color, movable but with a broad base; was painless, pulseless, and while tense to the touch it was readily determined to be made up of congeries of enlarged veins or capillaries. The mass felt not unlike lobes of varicocele. Shot like bodies of a size No. 5 could be felt, which later were found to be spheres of fibrous blood-clot formed probably by attrition during functional activity of the parts.

In spite of the fact that when the mouth was opened the tumor took its place between the teeth the patient affirms that she never had it to catch between her jaws when eating or talking. The truth of this statement was witnessed by the glistening, velvety, unscarred mucous surface which was presented. Four weeks ago with the aid of local anesthesia produced by a .25% cocain solution I was enabled to accomplish the removal of the growth. The patient's desire for active interference rested entirely upon the cosmetic effect which the gradually growing nevus produced. My thought in advising operation rested upon the danger from possible future malignant change or hemorrhage from rupture. As I was unattended the difficulties which were considered at the time of operation were control of the bleeding and the amount of subsequent deformity which would result from nerve or muscular involvement. After injecting the mucous membrane and submucous tissue I passed numerous silk sutures from beyond the lateral limits of the growth through the base and almost to the cheek surface in depth. Left long the ends were clamped and

¹ Presented to the Surgical Section, New York Academy of Medicine.

weighted by hemostats. The anterior sutures were passed from before backward to provide for the formation of the corner of the mouth. Dissection was done with blunt-pointed, curved scissors and forceps, commencing posteriorly, as the blood supply seemed to come from in front and below. Bleeding was free, but was readily controlled by tying the sutures consecutively as I passed over the area covered by each. All of the sutures were removed during the course of the first ten days. The surface was smoothed off and the outline of the mouth rendered as though undisturbed by careful application of silver nitrate at intervals. Home treatment consisted in the daily use of a 20% hydrogen dioxide solution.

The case is presented for interest (as the books give nevoid growth from mucous membrane as being uncommon); for the successful control of the hemorrhage by the method given, and for general result.

CHLOROFORM IN LABOR: HINTS ON SOME OF ITS USES.¹

BY

STEPHEN HARNSBERGER, M.D.,

of Catlett, Va.

"As travail upon a woman with child." Thus does sacred history record the fact that woman in labor must suffer; and while this is true, is it a valid reason why we, in this age of anesthetics, should sit idly by and let her suffer? I am, and always have been, an advocate of the rational use of chloroform in labor. I rarely fail to give it during the latter half of the second stage. I give it in properly selected normal labors, and I give it in the aberrant cases. Why should we not give it? Why should we allow any one to suffer pain? Then certainly why should we sit stoically (I had almost said stupidly) by, as many do, and see women suffer the agony of travail, and say, as I have often heard physicians say, "Oh, madam, you are doing all right. Let nature have its way," when all the time nature's way is preparing her for prolonged future suffering, and in not a few instances for an early grave.

I do not believe every physician fully realizes the importance of controlling pain. Pain may be only a symptom, but it is a symptom that not infrequently ends in death, which may occur in a very short time by rapidly overcoming the vital forces. But perhaps the most usual instances in which pain proves fatal is when it so antagonizes the physiologic processes and functions that every tissue and organ is seriously impaired and cannot withstand the encroachment of disease. It seems to be a well recognized fact that patients kept free from pain in peritonitis recover, while those who are allowed to suffer commonly, if not always, die. This is true in other conditions in which pain is a prominent symptom, and is no less true in the lying-in chamber. Here, as elsewhere, pain often determines the life or death of the patient.

I would suggest the use of chloroform during the second stage of labor. I rarely use it during the first stage, because dilation of the cervix is a slow process, and once you begin to use chloroform the patient will not have it discontinued. Its employment, however, is advisable in the first stage in the so-called forced labors. I have rarely ever seen chloroform lessen, and have never seen it suspend, uterine action. Some women have nagging pains in the back or in front, though less frequently, for many hours or even days, before labor properly sets in; they are worn out and irritable from loss of rest and sleep. A suitable anodyne, reinforced by a rational use of chloroform during the first stage, though it should retard somewhat the progress of the case, will give them the encouragement and strength to pass through the inevitable ordeal. In other cases labor sets in suddenly and with unnaturally severe expulsive pains. These should be lessened and the uterine contractions moderated. The use of chloroform here will save the patient probable shock, and the parturient canal much of the imminent danger of threatened and probably permanent injury from lacerations—no less, perhaps, the risks of postpartum hemorrhage and subsequent septic infection. At other times we meet cases in which the pains are excruciating but nonpro-

pulsive. There is little or no progress. In these patients under chloroform anesthesia the obstructive conditions yield and they go promptly on to a happy completion. I was asked to attend a case of this character in 1883—third child. The family physician had been called suddenly but imperatively away. He left word, however, that the patient was not under any circumstances to be given chloroform, on account of organic heart disease. The woman suffered pain after pain. Several hours passed wearily away and yet no progress was noted, and finally when I noted that all symptoms pointed to a sure and as I believed speedy collapse, I awoke her husband, explained the matter as it stood, and plainly told him that she must either have chloroform or die. He reluctantly assented. Her pulse began to improve in rhythm and tone from the moment anesthesia was reached and became steady and regular. In 30 minutes the baby was born. Her puerperium was uneventful. I have attended similar cases since with as satisfactory results, and I am persuaded from this experience that danger lurks not so much in the cardiac condition of the patient as in the quality of chloroform and the manner in which it is administered. Furthermore, in those rarer cases in which we find almost incessant and excruciating girdlelike pains in the lower quadrant of the belly, which furnish our surest sign of threatening rupture of the womb, chloroform anesthesia gives us our strongest hope. General tranquillity may supervene for awhile, and longer than we may wish, but it is the repose that saves.

At other times we meet intensely neurotic women, who cry, toss about, and "are a terror" to family and doctor. These women, I find, quiet down only under chloroform. It is the physician's only reliable means for promptly and successfully managing such patients.

In puerperal eclampsia one can use chloroform as an adjuvant. It helps to mask the hideousness of the condition while pilocarpin hydrochlorate and saline infusion are putting in their curative work.

In labors in which no operation is performed, but in which it is incumbent upon the obstetrician to make manipulative procedures necessary for the welfare of the woman, chloroform should be employed, if she is suffering much pain, in order to quiet her. During obstetric operations, such as version, the use of the forceps, etc., I think chloroform should always be employed. It saves the patient pain; it allays excitement; it minimizes the risks of injury to the uterine structures and those of the other portions of the parturient canal, and the operator is able to work better through knowing that his patient is free from suffering. He is not so inclined to hurry when haste would be hazardous to the best interests of the woman.

Of course, we would naturally expect to employ chloroform or other anesthetics in operations like abdominal sections, etc., and therefore further consideration of this point is not necessary. It has been claimed that inflammations, postpartum hemorrhage, puerperal fever, subinvolution, etc., are more liable to occur when chloroform has been used in labor. The liability to the first of the accidents enumerated can not be increased, unless violence be used during operations, and no operator with average skill should do a bungling operation. The second accident may be a trifle more liable to occur after the use of chloroform, though I have never found this to be true. Still, if recognized as possible, it can be easily guarded against by taking proper precautions. The third accident, I feel sure, is more of an assertion than a fact, for the more comfortable we make the lying-in woman the better care we take of her, and the more we husband her vital forces, the less likely is she to fall a victim to puerperal sepsis. In my own clinical experience chloroform helps to prevent puerperal fever, and any agency that does this also helps to ward off subinvolution and chronic uterine disease.

In all cases when pain is severe we barter time, cause our patient to lose strength and depreciate her chances of recovery by allowing ourselves, as many do, to depend on nature and nature's way.

To employ chloroform intelligently and successfully in obstetric work, good judgment and a thorough knowledge of the action of the drug must be had, especially in those cases

¹Read, by invitation, at the meeting of the Tri-State (North Carolina, South Carolina and Virginia) Medical Association, Battery Park Hotel, Asheville, N. C., February 25-26, 1902.

in which organic disease of the heart is present. Furthermore, the personal equation, as well as suggestion, cannot wholly be disregarded in the elements of success.

The following are important factors of success in the administration of chloroform:

Be sure to use only a pure preparation.

Go slow—give it drop by drop in an Esmarch or other good inhaler.

Withhold its administration and remove the inhaler unless needed—chloroform acts quickly.

Remember this: in obstetric work it is rarely necessary to force anesthesia beyond the so-called second stage.

Keep the patient's lower jaw pushed well forward.

Watch the patient—the eyes, pulse, respirations, color and muscular movements.

RAPID REACTION FOR BENGE-JONES ALBUMOSE.

BY

ALEXIUS McGLANNAN, M.D.,
of Baltimore, Md.

To the Editor of *American Medicine*:—On page 238 of the February 7 number of *American Medicine*, A. O. J. K. gives an abstract of Boston's method for a rapid reaction for Bence-Jones albumose. I respectfully call attention to the following copy of a communication on this method sent by me to the *Maryland Medical Journal*, which appeared in their December, 1902, number:

The method directs the treatment of urine with sodium chlorid, followed by boiling with caustic soda, and then the addition of lead acetate, after several intermediate changes, a final black precipitate of lead sulfid indicating the presence of albumose from which sulfur has been split off by the alkali.

Unquestionably sulfur will be split off from albumose by this treatment, but as a reaction to prove the presence of albumose in urine the method is worthless, because among the normal constituents of urine are certain substances grouped under the name of neutral or reduced sulfur, including thiosulfuric, tauro-carbonic, sulfocyanic acids, cystin, ethylsulfid, etc. All of these substances are characterized by the ease with which they give up sulfur when heated with caustic alkali, and the ordinary reaction to show their presence in urine depends on this property and the subsequent formation of a brown or black precipitate by the action of the resulting alkali sulfid on lead acetate.

For this reason, in order to identify albumose by its loosely combined sulfur it is necessary that the material be salted out of urine, and the above mentioned reaction be made with the well-washed precipitate.

TETANUS CURED APPARENTLY BY ANTITETANIC SERUM.

BY

J. R. CARE, M.D.,
of Norristown, Pa.

CASE.—On October 31, 1902, Mrs. J. M., while walking in her yard, stepped on a nail, which penetrated her foot. A physician was called, who applied a sorbefacient and the wound healed promptly, but the foot remained sensitive and became daily more painful. The patient was now treated for rheumatism.

On November 17, I was called and found her suffering with a marked tetanic spasm of the left leg and foot, an effort to move them being followed by painful spasms. There was some induration in the sole of the foot that was more or less sensitive to pressure. On November 18 the patient was etherized and the penetrating wound made by the nail was carefully dissected out. Between the second and third metatarsal bones there was found pus, dirt, and some threads of stocking. After irrigating the wound with 1 to 500 mercuric chlorid solution it was packed with 10% iodoform gauze and the ordinary antiseptic dressing applied. I then gave her one million units of antitetanic serum and the following internal medication:

Potassium bromid.....	5	gm.
Tinct. hyoscyamus.....	10	cc.
Tinct. gelsemium.....	3	cc.
Comp. syrup sarsaparilla, sufficient to make.....	60	cc.
Teaspoonful every three hours.		

On November 19, at 9.45 a.m., I gave her another million units and repeated the dose again at 9.45 p.m. The next morning she was resting easier and her jaws could be moved slightly. As I could not get any serum for 24 hours none was used until November 21 at 9.45 a.m., and again on November 22. She

then seemed to be so much more comfortable that I deferred giving her any more antitoxin until the twenty-fourth. At this time the jaws were rigid and her temperature, which had not gone beyond 100.2°, reached 101°. I gave her a dose at 9.30 a.m. and repeated it again at 9.45 p.m. On November 25 I again repeated the dose, and the jaw being relaxed and the spasms less frequent, I rested the serum for a time to await developments and from this time on she continued to improve. The only untoward effect that could be said to result from the serum was the occurrence of a very severe attack of urticaria. The spasms of the muscle of the leg continued more or less severe for ten days after the last injection of the serum, but gradually relaxed and at this time she is completely cured.

I think we can rightfully claim that the serum had a beneficial or curative action in this case, for the reason that when the serum was omitted the symptoms became aggravated until sufficient serum was used to neutralize the toxins in her system.

EMANSIO MENSIMUM.

BY

C. W. FENN, M.D.,
of San Diego, Cal.

Entire absence of the menstrual molimen without appreciable effect upon the general health is infrequent enough to merit mention. After an observation extending over 40 years I recall but two authenticated cases of the anomaly.

Mrs. O. B., a white woman, now approaching 60, has never menstruated, and aside from occasional attacks of epistaxis, which may have been neurosis, has had good health.

More recently a colored woman, over 50, assured me she had never "seed her courses, and meanwhile had been weller than most women."

Both have been married and are robust in appearance.

I regret that opportunity was not afforded me to determine whether absence of uterus or ovaries or atrophy of the fossas, etc., had any causative relation.

USE OF THE MAGNESIUM RING IN UNITING SEVERED BLOODVESSELS.

BY

THOMAS J. TURPIN, M.D.,
of Monterey, N. L., Mexico.

To the Editor of *American Medicine*:—Upon reading the letter of Dr. Senn ("Professor Nicoladoni's Clinic," *American Medicine*, page 587, October 11, 1902) I was impressed with his account of the magnesium ring used for the purpose of uniting severed blood vessels. I would suggest that the same ring made a little larger might prove useful in uniting intestines, taking the place of Murphy's button and the bone plates. If I had frequent opportunity for abdominal work I would try the magnesium ring, but as my opportunities in this line are limited, I suggest it for the consideration of those who are more fortunate.

UNSUCCESSFUL VACCINATIONS.

BY

W. J. PURKHISER, M.D.,
of Salem, Ind.

To the Editor of *American Medicine*:—I desire to add my experience to your "no-take" vaccination discussion.

Since January, 1882, I have made 14 unsuccessful efforts to vaccinate myself. I have used the ivory points and tube virus in about equal number, and with the same results—"no take." The virus used was the product of the most reputable producers. It is scarcely probable that the virus or the technic could have been at fault in so many vaccinations.

I have also made four unsuccessful efforts to vaccinate Miss Ella P., a healthy girl of 13. Following the second vaccination (?) there appeared an area of exuberant granulations about one-half inch in diameter, and elevated above the surface of the skin about one-fourth of an inch. The granulations were cauterized, and prompt healing followed. No vesicle or pustule appeared, and I regard it as a "no-take" vaccination.

ORIGINAL ARTICLES

THE PSYCHIC NATURE OF SOME DISTURBANCES OF THE ACTS OF URINATION AND DEFECACTION.

BY

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of Cleveland, Ohio.

Lecturer on Clinical Neurology and Anatomy of the Nervous System, College of Physicians and Surgeons, Cleveland; Neurologist to the Cleveland General Hospital and Dispensary; Neurologist to the City Hospital.

Within the past ten years I have observed a number of patients with nervous or psychic disturbance accompanying or associated with the acts of urination and defecation. Careful notes of these cases have been preserved, and it has occurred to me that a brief consideration with a detailed report of some of the purer types would be both interesting and instructive. Few general practitioners or surgeons of experience will fail to recall some of these peculiar psychoses, but the gynecologist and neurologist meet a far greater number. I will consider the cases under two separate heads, beginning with psychoses of urination.

Psychoses of Urination.—Before taking up the psychic and neurosomal phenomena connected with urination it will be well to devote a paragraph to the consideration of the physiology of the act. Considerable uncertainty and differences of opinion as to the physiologic mechanism of micturition have obtained. Goltz's description of the series of events which occur in micturition is given most frequently, and is perhaps the most logical and clear explanation which we possess:

The distention of the bladder by urine finally causes stimulation of the sensory nerves in the muscular coats, thus producing reflex contraction of its musculature, which squeezes a small amount of urine into the urethra. These few drops exert a stimulation upon the sensory fibers and give rise to a conscious desire to urinate. If no obstacle is presented the accessory muscles of urination and the bladder wall itself contract vigorously, while both the inhibition of the will and the automatic center in the spinal cord, which are doubly involved in control of the sphincter, are taken off; it relaxes, and the act of urination is in force. If the bladder is not too full and the sphincter is kept in contraction for some time the contractions of the bladder may cease and the desire to micturate pass away.

The proverbial frequent visits to the urinal by the student up for his final examinations is not always due to polyuria, for not infrequently it is accompanied by tenesmus and the passage of but small amounts of urine. Soldiers in the excitement of battle also frequently lose control of their sphincters. Emotional and hysteric people often complain of polyuria, tenesmus, and even of incontinence or retention of urine.

An able-bodied and not overly nervous physician of my acquaintance cannot urinate in the presence of another person, no matter who it is. He can give no reason for this, but states it is not due to shame. Inquiry among physicians who do a large amount of insurance examinations reveals a large number of like inabilities.

A patient told me recently that his wife, physically vigorous but neurotic, could not urinate in his presence, although the act was accomplished with ease in the presence of women.

A perfectly healthy middle-aged woman informed me that she could not urinate in a public urinal, and that travel was a terror to her because of this fact. Even to urinate in a private bathroom in a hotel was impossible. The use of a night-vase, however, was attended by no difficulty. Defecation was accomplished without the slightest trouble in any of these places, but urination could not be accomplished. Believing this phobia to be a fear of contamination, I suggested her carrying an ordinary glass urinal, which she tells me she uses with the greatest ease when on the cars, steamships, or in public closets.

The mother of an athletic young woman, who is very fond of camping out, consulted me recently because of the great difficulty experienced by her daughter in urinating while in camp. Questioning revealed the curious fact that when a little girl she "could not sit down out of doors," as her mother put it. I have not learned the result of my advice to carry a portable closet into camp with her.

All are acquainted with the reflex effect produced by hearing running water or by allowing cold water to run upon the

hands. A neurasthenic patient once told me that she never dared wash her hands in a stream from the tap without having urinated previously.

A neurotic boy was brought to me for respiratory tic. Among other neurosomal and psychic stigmata it was related that he could not urinate in a dark room. If, however, he was out of doors the darkness did not affect his control of his sphincters.

A hysterical girl of 17, whose attenuated brain held a hundred aberrant notions, could not urinate unless in a darkened room. So firmly fixed was this idea that on one occasion, under circumstances which did not conform to her distorted ideas, she retained her urine so long that she got an overdistended bladder which the catheter alone relieved.

Another case is that of a girl of 16 with hysteric mania whose axial delusion, and around which revolved a dozen others, was that she could not voluntarily pass urine. Acting upon the advice of Drs. W. J. Scott and M. Rosenwasser, the mother was taught the use of a catheter, and the girl was confined to a dark, unfurnished attic. She urinated voluntarily the next day, and later resumed her place in the family, although her mind did not clear for months afterward.

By far the most singular case of this curious collection is that of a little girl of 12, endowed with a neurosomal heredity enhanced by much infantile illness. When she was twelve years of age, it was found that during urination she repeated rapidly throughout the entire act—"number one! number one! number one!" When taken to task for this peculiar reiteration, she declared that it was impossible to urinate without repeating this formula. Threats, rewards, and punishment had no effect upon her. Upon gaining her confidence I found that when a little child she would go to her mother telling her that she wanted to do "number one" when she wanted to urinate, and "number two" for defecation. As is often the case with neurotic children, she seems to have micturated very frequently, and she would run to her mother many times a day, saying, "number one! number one! number one!" She soon found herself repeating this during urination, at first to herself in a whisper, but at last her oblique psychology was satisfied only when the words were repeated aloud. It is a devious route full of much speculation to attempt to establish connection between an evident psychic tic and the loss of power to coordinate the complex combination of nervous impulses supplied by the will and the various spinal and intrinsic bladder centers presiding over normal micturition. When last heard of the child's condition was unchanged, no farther manifestation of a disordered psychology had appeared, but if she lives long enough more will follow.

The following case presents features worthy of careful study:

Miss S., aged 21, a stenographer, was referred to me by Dr. R. E. Skeel. She gives a negative family history. She suffered considerable sickness during childhood, but none since maturity. She gives no history of hysteria or other functional nerve disease. She is a lover of good literature; has had a good education, and is refined and cultured. She is distinctly a neuro-path. In personal appearance she resembles the voluptuous type of hysteric; she has red hair, brown eyes, well rounded figure. She states that one day, at noon, while riding home on a street-car, she felt a sudden and almost irresistible desire to urinate, although she felt sure that her bladder was not unduly full. She suffered considerably in her efforts to control this impulse, and on reaching home was not surprised to note the fact that while comparatively little urine passed the desire at once disappeared. Before starting on her return to the office she visited the closet, but about half-way to her destination the desire to urinate came upon her with such irresistible force that she was compelled to leave the car, when to her surprise the desire quickly disappeared without the passage of urine. She walked to her work for several days and experienced no trouble, but whenever she attempted to ride the impulse became so marked as to force her to the street immediately. For some time she avoided cars, but her distress was complete when one morning, as her employer began to dictate to her, the impulse to urinate came upon her with the same force and imperiousness as when on the street-car. Morning after morning her work was a perfect misery between going to the closet and fighting the now well-nigh irresistible impulse to urinate during the taking of dictation. Careful analysis of her sensations while the impulse was upon her revealed a complexity. The impulse came so quickly and forcibly that the will control of the sphincters was not always sufficient to prevent a slight jet of urine issuing with considerable force. During this time she became confused, was possessed by a nameless fear, her face flushed and burned; fingers and toes tingled, and a degree of mental excitement coupled with an intense desire to go to the urinal became almost uncontrollable. If she retired to the closet a small amount of urine would pass in a natural manner and all her symptoms disappear, but she would be no more than seated at her desk when the impulse would return with all of its terrifying accompaniments. Thinking perhaps it was a manifestation of sexual excitement possibly not understood by the innocent girl, I suggested the wearing of a napkin, which would absorb the few drops of urine that would pass after the first impulse had forced her to the closet. This was tried without benefit; although she would dampen the napkin the impulse remained, nor would it depart until she sat upon the closet. When this impulse

became timed to the hours of dictation it permitted her riding on the street-cars, with constant teasing, however. Although she was vouchsafed this slight measure of relief, the psychosis soon manifested itself whenever she went to church, the theater, to a party, or to any gathering outside her home. Strange as it may seem, she could entertain any number of friends in her own home without the least personal discomfort. This latter observation was made by Oppenheim in a study of a series of these cases. Dr. Skeel treated her for local conditions, and found a spot at the base of the bladder which appeared irritated. Careful systemic treatment failed to aid her. Becoming convinced that he had a neurosomal or psychic ailment to deal with he referred the case to me.

I found in addition to the foregoing manifestations quite a list of the stigmata of degeneration. One hand was larger than the other and one leg was much larger than its fellow, and the seat of a peculiar paresthesia. Belladonna and arsenic carried to toxic limits, suggestion and the pill of three valerianates have produced marked benefit, although the patient is now, at the end of three and a half years, compelled to keep the valerianate pill on hand to aid in maintaining control of her urinary impulses.

Miss J. S., white, aged 22, a dressmaker by occupation. She may be described as an erotic psychopath whose natural tendencies are strongly repressed by great will power and good training. Her previous health has been good, and except for a hernia, she has been perfectly sound up to the beginning of the present ailment. About three months previously she noticed that when she went into society, or to church, or any place where many people were assembled she experienced a distressing desire to empty the bladder, accompanied by a feeling of fear, a rush of blood to the face and head, cold extremities, and a peculiar sinking at the stomach. Unable to find any organic foundation for her distressing condition and discouraged with my ill success in affording her relief, I referred her to Dr. M. Rosenwasser, who returned the patient to me with the following note: "Examination of Miss S. reveals no physical or pathologic condition to account for her symptoms. The urine is normal. There is no pain in the bladder, nor is there any evidence of disease of the urethra. The kidneys are not loose. My conclusion is that the condition is neurotic and I would suggest treatment along that line."

Her condition kept her from the theater, concerts, parties, and church for nearly two years. While she was under my care during that time many medicines and measures were used, but I believe that suggestion and liberal doses of the tincture of time and essence of patience were the only remedies that aided her in obtaining her present fairly comfortable condition.

Psychoses of Defecation.—As in the consideration of the peculiar disturbances encountered in urination I will precede the relation of my one case of a psychosis of defecation by a brief reference to the physiology of the act.

From the experiments of physiologists it seems that the whole act of defecation is a complex combination of involuntary reflexes, and while the chief physiologic center for this complex automatism probably lies in the lumbar cord with accessory centers in the organs themselves, yet it has sensory and motor connections with higher centers which make this act largely controlled by voluntary impulses. It is also true that various physiologic states and even the emotions often exert profound effects upon the act. Goltz has shown that in dogs with the spinal cord severed defecation is performed normally. In another experiment, in which the entire spinal cord, except the cervical and upper part of the thoracic region, was removed it was found that after the animal had recovered from the operation normal defecation took place once or twice a day, clearly indicating that the rectum and lower bowel act by virtue of their own intrinsic mechanism. In infants the involuntary character of the act is well known, but higher control is acquired later until the adult, through the action of the will, can almost completely control the operation of both the spinal and intrinsic nerve mechanisms concerned in the complex act of defecation. The chief voluntary factor consists in the "taking off" through action of the will the inhibitory power of the spinal and intrinsic centers controlling the two sphincters. This "taking off" of the inhibition seems to put in motion not only the peristalsis itself, but by an almost imperceptible aid of the will the glottis is closed, the diaphragm fixed, the abdominal muscles powerfully contracted, the intraabdominal pressure raised, and the act accomplished.

I have observed that although the internal sphincter

is said to be involuntary and largely innervated by the sympathetic system, and the external sphincter composed of striate muscle tissue and more directly under control of the will, yet it appears that whenever the feces are sufficiently fluid to pass the internal sphincter successfully and produce irritation of the mucous membrane, the most powerful effort of the will must be exerted to prevent the external sphincter opening and a putting in motion of the powerful impulses which tend to produce an involuntary contraction of the accessory muscles of defecation, combined with the active peristalsis which is a part of the internal sphincteric relaxation.

My experience would indicate that the psychoses of defecation are far less frequently encountered than those of micturition. Indeed the following case is the only one of clearly defined type that I have had opportunity to study and record:

Mr. A., a Hebrew merchant, aged 47, was referred to me by Dr. C. B. Parker. His ancestral history is negative. His wife is an amiable cultured woman. They have two daughters, the eldest of whom has a slight spinal curvature and has had hysteria; the youngest was referred to me by Dr. Rosenwasser because of hysteria and chorea. Mr. A. is a moody man given to worry about his business, and has for years suffered from obstinate constipation. He has run the gamut of laxatives, cathartics, and physiologic and dietetic cures but with no lasting benefit. He was operated upon for hemorrhoids by Dr. T. C. Martin about two years ago. From his piles he was relieved but the constipation remained as obstinate as before.

He came to me 18 months ago complaining of peculiar psychic phenomena following defecation. When he sat down in my office he presented the most perfect picture of dejected hopelessness that I have ever witnessed. It appeared that he would arise in the morning feeling well and go about his work, and if he had no stool would remain in normal condition; if, however, the bowels acted, the most intense mental and psychic dejection followed; to such a degree that thoughts of suicide continually recurred to him in spite of the horror and fear which they excited in his reasoning mind. This condition would last for two or three hours, then slowly recede, leaving behind some worry as to his condition, but no foolish thoughts and but little depression. He was treated by galvanism, the negative pole in the rectum the positive dispersing pole over the lumbar spine, tonics, suggestion and cold baths. He improved and I flattered myself that the psychosis was caused by some local rectal trouble. About two months after his last treatment he again appeared at the office and informed me that following some unusual business worries he had a return of the awful depression, but it now followed urination instead of defecation. The periods of depression were identical in character, but not so deep or prolonged as the former ones. No such trouble followed defecation now, not even if he passed urine at the same time. Careful examination disclosed no local disease nor other evidence of nervous or psychic disturbance. The shifting of the scene had placed the case in the category of a pure psychosis not dependent upon any local lesion. The negative bulbous sound in the urethra instead of the rectum instituted an improvement, which has continued for over a year.

In this rambling relation of a number of cases which have been observed during a long period of time there has been no attempt at classification other than the division observed in their recounting. Possibly it may be of advantage to refer briefly to some of these cases in an analytic way and draw some conclusions as to their origin as well as of their nature.

In the case of the physician, notwithstanding his statement that it is not shame that prevents his urinating in the presence of others, I am positive that ingrained modesty is the origin of this not uncommon inability to harmonize the various complex reflexes associated in the act of normal micturition. Inquiry also revealed the fact that the woman who was unable to urinate in the presence of her husband had neither a brother nor a father who "looked upon her childhood" since infancy. I believe that we are justified in believing that shame or innate modesty was sufficient to disturb her coordination of normal reflexes. In another instance the difficulty in urinating experienced by the young lady while in camp may be explained upon the hypothesis of some fear that developed when a child while attempting to urinate on the ground out of doors. In the case of the woman who was unable to use a public urinal, the idea that it was a fear of contamination which pre-

vented a correlation of the reflexes sufficient to accomplish the act was proved correct by her adopting my suggestion of carrying her own urinal, with subsequent relief. This is analogous to recorded instances of women, apparently sane, who, because of ungovernable pathophobia, are afraid to touch their genitals with an unglowed hand. It is difficult to explain the case of the neurotic boy who could not micturate in a dark room, and more difficult to explain why he was not troubled when out of doors in the darkness. The same remarks apply to the hysteric girl who could urinate only in a dark or darkened room. In the case of the little girl who repeated aloud "number one! number one! number one!" during micturition, we have to deal with a form of convulsive tic, and the occurrence of obsessional ideas connected with one of the common functions of life. It is also a question if the case of Miss S., which was related in detail, is not also another example of a tic of the bladder itself, in which the convulsive movements are entirely confined to its muscular walls, affording contractions of sufficient force to exude a few drops of urine into the urethra already hypersensitive, and thus set in motion not only the intense desire, but the force of the accessory as well as the intrinsic muscles of micturition. Her disturbed mentality, flushing, etc., are all understood in the light of her emotional nature and refined and modest character. It cannot be denied, however, that the whole aspect of the case is one markedly suggestive of those peculiar obsessional ideas and actions which at times possess the psychopath. These latter remarks may be applied with equal force to the case of the little girl in her repetition of the obsessional words which appear to come to her unbidden, yet she is compelled to use them throughout the act. In the case of Mr. A. there is a purer psychosis, and one perhaps exceedingly hard to explain, especially when we recall the experience of every healthy man who feels a sense of relief, satisfaction, wellbeing, and stimulation, physically, mentally and psychically following a normal and thorough evacuation of the bowels. An inversion of this sensation would account very readily for his depression and dejection which brought to him the most somber ideas, including fearful ones of self-destruction. But why when the conditions changed and he was relieved of his difficulty it later returned as an accompaniment of micturition, no explanation can be offered except that of an ingrained psychic obliquity.

NOTE.—Since the above article was written, the following case was related to me by Dr. H. B. Kurtz, of Cleveland:

Mrs. H., a healthy married woman, without any marked nervous or psychic stigmata has never been able to urinate or defecate while sitting upon the closet seat. The only way she can accomplish either act is to get upon the seat with her feet, and sit down, as it were, upon her legs, the nates not being brought in contact with the seat. She states that this condition has existed since childhood, and the only explanation that she can offer is that, when a child, the opening on the out-door closet seat was large and that she recalls a fear that she might fall into this opening and consequently always got upon the seat, placing her feet astride the opening. In using the night-vase, if she sits firmly down upon the vase she experiences to some extent the same inability, but it immediately disappears when she raises herself. This lady is a woman of education and refinement and there is nothing in her family history that is indicative of degeneracy or mental or psychic disease.

Even Governors Have Not Lost the Sense of Humor.

—Governor Pennypacker, referring to the statement of Chairman Bliss, of the House Appropriations Committee, that the appropriations now pending carry \$10,000,000 in excess of the estimated State revenues, said that it was necessary to reduce appropriations, and that the question was simply one of elementary arithmetic. "Everybody who has an appropriation bill in the Legislature," said the Governor, "comes to see the Executive about it. I have had scores of visitors of this kind. Women come to me about their hospitals, and men about their asylums, and I have questioned them closely to find if there are 'rake-offs.' I have failed to find a single case, and if the newspapers can give me any information on the subject I would receive it gladly."—[Press dispatch.]

THE PREVENTION AND OUTDOOR TREATMENT OF PULMONARY TUBERCULOSIS.

BY

FRANK WARNER, M.D.,
of Columbus, Ohio.

Member of the Ohio State Board of Health.

The history of tuberculosis is a story as long as the history of medicine itself. Great epidemics of contagious and infectious diseases have come and gone. Tuberculosis came to historic light with the dawn of medicine. It has remained a reflection upon medicine—the greatest scourge of the human race. One-seventh of those dying from all causes die of tuberculosis. When we come to consider what a large number of children who die in infancy of diseases peculiar to childhood and the long array of diseases which sweep away adults, as well as the army that is carried away by the infirmities due to old age, it is apparent what frightful ravages tuberculosis makes in the ranks of mankind.

The question of its cause and prevention is not a new one. For 2,000 years the interrogation of its contagiousness has had many answers in the affirmative. The war of discussion at times became intense, some localities accepting the theory of contagiousness more promptly and thoroughly than others, but all communities possessing its adherents. In Italy, 400 years ago, the tuberculous were driven to segregation.

All of these debates were at most a matter of opinion rather than of scientific fact, for it was not until 1865 that Villeman began his experiments which proved that the sputum taken from a tuberculous patient was capable of inoculation of infecting guineapigs and rabbits with tuberculosis. And not until 1884 did Koch demonstrate the principle in this sputum that is capable of transmitting the infection to be the tubercle bacillus.

Since this discovery the civilized world has taken new hope. The immediate cause discovered it was but reasonable to suppose that a sufficient remedy would be found to cure the disease, or failing in this, a means of prevention would be found in the near future. Disappointment has been largely the fate. However, a hopeful sign that the future will unlock the box containing the coveted secrets of its prevention and its cure is that all our great nations are working, through their physicians as leaders and the laity as co-workers, to establish societies for the prevention of tuberculosis and hospitals and sanatoriums for its cure, and that the scientific laboratories of the world, with their trained bacteriologists, pathologists, and chemists are seeking the underlying causes, prevention, and cure of this disease. Physicians treating these patients in hospitals or in the home are today giving greater attention to the details associated with its prevention than ever before. Such vigorous effort by such scientific men makes us hopeful that the dawn of a new light is more than a mere dream.

The relation of tuberculosis to civilized communities is an intimate one. The higher the state of civilization the greater the number of cases of the disease. There is something in the mode of living that contributes to its production. You do not find tuberculosis among the Indians in their native, open air mode of life, but it quickly develops when they are brought into civilization. We would think that persons living in the country and in small towns would be peculiarly free from tuberculosis. Air, sunlight, and exercise are all there in abundance. Yet many persons living in these places take no pains to have properly ventilated living and sleeping-rooms. Many do not seem to grasp the first principle involved in securing proper ventilation. If a small sleeping-room is aired slightly, or even thoroughly, within or during the day, it is regarded as sufficient and is shut up tightly at night. I do not mean that one should always have a window open in all kinds of weather, but they should at least make preparation to

have sufficient cubic feet of air space to draw on for the night by opening their doors or transoms into hallways which have been thoroughly aired.

Again it is certain that many farmers living in a land of plenty do not always take the time or trouble or patience required in the selection of proper food. But this question I shall discuss more fully when I come to consider the facts relating to improper diet as a predisposing cause of tuberculosis. In crowded portions of cities, as tenement districts, tuberculosis prevails to an extent beyond the mere percentage of inhabitants, but this is only what we might naturally expect when we consider how unsanitary many of these surroundings are.

Infectious Nature of Tuberculosis.—While Villeman fairly demonstrated in 1865 what had previously been suspected, that tuberculosis could be induced in certain animals by the injection of sputum from a patient suffering from the disease, it was left to Robert Koch to discover and prove that the tubercle bacillus was the immediate or exciting cause of the disease; that the sputum of a person suffering from pulmonary tuberculosis usually contains the germs. An important query promptly arose as to whether these germs were the result of the disease or its cause. It did not take long, however, to prove to the world that the tubercle bacillus was the cause, and not the result of tuberculosis.

If these bacilli are the cause of the disease, and the sputum of the patients contains them in large number, the query again arose and stands prominently before us today as to whether tuberculosis is a communicable disease. After Koch's discovery that these bacilli by inoculation were capable of infecting guineapigs with the disease, it was but natural that the medical profession in large numbers began to accept tuberculosis as being a communicable disease from one patient to the other; that it is contagious; that it is with considerable risk that a patient suffering with the disease mingles with others. Many physicians imbibed very extreme notions along these lines. One does not need to read many of our medical journals to see that there is a tendency among a class of physicians with opposing views, with notions as extreme against its communicability as the others are for it. But like so many extreme views, it is quite likely that tuberculosis occupies a middle ground in its infective capabilities, and that it is neither so communicable as some physicians would lead us to believe, and a great deal more so than many others believe today; that the truth lies between these extreme views. Is tuberculosis a contagious or infectious disease? What is contagion, and what is infection? Gould's dictionary says contagion is the process by which a specific disease is communicated between persons, either by direct contact or by means of an intermediate agent, also the specific germ or virus which a communicable disease develops. And that infection is the communication of disease germs or virus by any means, direct or indirect.

These definitions are perhaps as good as any given in our dictionaries, and still I think we conceive a better understanding of contagious diseases and those of an infectious nature by running over in our mind some diseases which we clearly regard as communicable by contagion and those which simply develop by infection. Yet strictly speaking, I suppose every disease which is communicable by contagion is a specific infectious disease, but not the converse. Measles and smallpox are highly contagious diseases. They are at the same time infectious; the patient is infected with the germ or virus of these diseases. Malaria and septicemia are infectious diseases, but not contagious. One who is not immune may take smallpox or measles by sitting in a room with a patient suffering with one of these diseases. He will not take malaria nor septicemia in like manner.

Now, will tuberculosis infect by mere exposure to the patient, as smallpox and measles do—that is, is it, like them, a contagious disease; or does it follow rather the mode of infection as displayed in malarial poison-

ing and septicemia—that is, is it simply an infectious disease?

The laws governing the mode of infection of malaria and septicemia are too well understood for me to repeat them here. I do not believe any one thinks that it would be possible to contract tuberculosis from a patient if that patient were to step into one's office or house, so long as he did not cough nor expectorate. And even then the sputum would first have to dry before the germs would be liberated to become diffused in the air. In other words, in the absence of the sputum, you might stand in the presence of the patient indefinitely without contracting the disease. Then it is not contagious, but as you can become infected with the disease through the sputum in the manner stated it is communicable. As animals are easily infected with tuberculosis by injecting the bacilli into them it seems but reasonable to conclude that they may likewise infect a person and that person another. Without the direct proof of experimental observation which we have in infecting animals, facts seem to prove clearly the truth of the infectiousness of tuberculosis. So we are next confronted with the proposition: To what degree is this infection communicable?

With proper antiseptic precautions against the bacilli there would no longer be fear of the disease. This, however, is an ideal condition to think of and try to attain, rather than to hope to attain absolutely. There are so many persons afflicted with tuberculosis who never heard of the bacilli producing the disease. How can they be expected to care for their sputum when they know nothing of the danger associated with its indiscriminate deposit? Nor is this practice confined to the ignorant classes by any means. I am sure it is only thoughtlessness when an educated person, suffering from pulmonary tuberculosis, permits the sputum from a cuspidor to be emptied into a water-closet without first destroying the germs with some antiseptic agent. For without the use of these antiseptic agents the sputum with its living germs enters the streams, and from the streams either finds its way into the pipes of a public water supply to the stomachs of those using it, or at least, animals depending upon that water supply, and upon which we are dependent for our food supply, drink it, and perhaps become infected to in turn infect those who eat the meat. Whatever may be the final outcome of the discussion of the similarity between bovine and animal tuberculosis, the fact remains that there are very few who believe otherwise than that there is a sufficient similarity to make us guard carefully the health of the animals we eat.

So far as the communicability of the disease is concerned by association with tuberculous people, the danger only lies in the careless disposal of the sputum. And then only after the sputum dries and is breathed into the lungs, barring some exceptional cases of the sputum of the infected individual getting into the stomach of one who is not infected; as through the use of the same dishes which have not been sufficiently cleansed and sterilized.

There is nothing, to my mind, that stamps tuberculosis more clearly as an infectious disease, pure and simple, and not as a contagious one, than the fact that in well-regulated hospitals and sanatoriums where the germ is constantly and rationally destroyed the physicians, nurses and attendants do not acquire the disease more frequently than those in other salubrious walks of life. But we have only to look to some of the old cloisters where tuberculosis had once secured a foothold to see the frightful decimation which has been made in their numbers. Notably was this true in some of the cloisters of France, where the deathrate, according to Cornet, reached 62.88% of those dying from all causes. This was based upon a population of 4,028 people for a period of 25 years. On the other hand, at the Brompton Hospital, in London, where all the patients treated are

tuberculous, no greater number of cases of tuberculosis have arisen among the physicians and attendants than in well-regulated sanitary communities. This latter circumstance would only seem to indicate that the disease is not a strictly contagious one; that the sputum was so cared for in an antiseptic way as to prevent infecting others. In the former cases, the cloisters of France, the large deathrate speaks volumes in favor of the communicability of the infection under conditions that are favorable for the transmission of the germs. I have spoken of this high percentage of deathrate in the past tense. I hope the use of the present tense might permit a different statement. But it would seem to emphasize the fact that people may associate with the tuberculous with impunity if only the sputum is cared for properly and the general hygienic surroundings are of a high type. If the reverse obtains, we can only look for a continuance of the high mortality rate from the disease.

In everyday life there must be an immense number who breathe into their lungs tubercle bacilli. Yet a very small percent become infected with the disease. I presume there is no one reason so accountable for this as the resisting power of the individual. In just the ratio that the vital forces are lowered the individual is more likely to acquire pulmonary tuberculosis, or any form of tuberculosis for that matter. In discussing this question I have in mind simply one form of the disease, that assailing the lungs. If diminished resistance is one of the causes which permit a person to become infected with the disease, we should consider well some of the things that contribute to lessening this power of resistance.

Among the things which contribute to lower one's capacity to resist tuberculosis are the following:

1. *Neglected Colds.*—One may say perhaps that the power of resistance is diminished when a cold implants itself upon the patient. This is unquestionably true when a person takes one cold after another; though the resisting power may not have been below the normal when a cold was first acquired, it may have been wholly the result of carelessness or unavoidable circumstances. If a person has become greatly overheated and bathed in perspiration, following which he remains in a draught, it does not follow that his resisting power has been diminished. There has simply been a strain put upon the resisting power that he cannot bear. The time comes when by reason of one cold after another the resisting power is not only diminished to prevent the taking of colds but the individual is in a condition that will more readily permit the infection of tuberculosis. The consequent congestion in the lungs, following these repeated colds, doubtless prepares a more suitable soil for the propagation and growth of the tubercle bacilli. Therefore the patient should not only be cured of this cold, but a vigorous attempt should be promptly made to place the patient's system in such a condition, either by the use of medicine, or by a change of conditions and environment, perhaps both, as will place the resisting power at a high level. Certainly, by this means, many cases of tuberculosis will be avoided.

Closely allied with the taking of cold is the matter of insufficient clothing. It is not always among the poor, who are not able to buy it, but quite as frequently among the well-to-do or rich who can well afford the clothing, but conceive the idea of wearing less than they should. It is true some people go to the other extreme and load themselves with excessive clothing, which keeps them most of the time bathed in perspiration. They are made tender and susceptible to colds, and these repeated colds soon lower the power of resistance to tuberculosis. A happy medium in the matter of clothing must be found; enough worn to keep warm and prevent sudden chilling of the surface, but not so much as to produce a continual perspiration.

2. *Vitiated Air.*—There is probably no one cause that so frequently impairs the health and consequently the

power to resist tuberculosis as the lack of ample pure air to breathe. It seems strange, indeed, that when air is at the same time so valuable and yet so cheap that it should be regarded so lightly. This may be the result of one's own fault or the fault of others over whom he exercises no control. If it be one's own fault, it may be the result of ignorance or of carelessness. One may not know that the richness of air in oxygen is quickly exhausted where the air is in a confined space, of course depending upon the size of that space; but the cubic feet of air space in any of our modern living-rooms are not of such proportions that its frequent replenishing can be dispensed with. Instead of ignorance being the basis of breathing air over and over again without replenishing, carelessness or thoughtlessness may be wholly accountable for it.

All educated people know, in a general way, the chemistry of the air and the physiology of the lungs; that the lungs require oxygen to perform their task of oxidizing the blood; that this task is best accomplished when the air contains its normal amount of oxygen, and not only when it contains its normal amount, but also when it is largely free from the waste products of combustion contained in air that has been once breathed. If any one stops to reflect he recognizes at once that the highest standard of resistance cannot be maintained unless the air is maintained in a pure, normal condition. If the air is not kept in a normal condition how can one expect the health to be maintained and the lungs to offer a normal power of resistance? To be sure, the length of time during which a person is deprived of pure air is an important element. If the time has been short it will be insufficient to lower the resisting power. But when it is constant, or at frequent and prolonged intervals, the normal resistance will be quickly impaired.

It is easy to say that sleeping-rooms should be large, light and airy, but these are not things that people can always control. But, take the rooms as they are, people could manage them much better than a large percentage do. In the first place, the rooms should be well aired in the daytime. Next, if it is small, there should be some provision made for replenishing the air during the night, either by communication with a well-aired hall through a transom or door, or by window to the open air. But in securing the air in this way one must arrange to avoid sleeping in a draught. An open fireplace also makes a good means of ventilation. In summer time the ventilation of the rooms will take care of itself; for then windows and doors are left open. But in the fall, winter and spring, it will be necessary to give some thought and attention to these little details.

Again, the air of a room or house is frequently vitiated to an extreme degree by reason of an insufficient vent for the escape of the products of combustion of natural gas. Take many of these asbestos fronts in our grates; you will find nothing more than a mere crevice above for the fumes of the gas to make their escape. Most of them are entirely insufficient to carry off the products of combustion, as a result of which they escape with the heated air at the top of the grate. It was a great relief to have stepped into one of the hospitals of this city a few days ago and find that provision had been made here for using the gas with these asbestos backs. Two inches intervene between the top of the asbestos and the jamb, which gives a vent two inches wide and the length of the flue opening. In these grates you get simply the radiated heat; in those with the mere crevice the radiated heat and the hot air that overflows above plus the gas fumes accompanying it.

Now the products of combustion vitiate the air and this in turn brings about an excessive and persistent anemia. Even with careful treatment, and after removal of the cause, the anemia is slow in subsiding. The resisting power of the individual has been diminished and continues below par during the time of the convalescence. If there were smoke associated with the

combustion of natural gas, people would at once demand that a sufficient exit be provided for the escape of the gases consumed. But as there is not, this dangerous deception of filling the room with hot air filled with consumed gas continues to an extent that needs correction. Even still worse are some of the natural gas stoves, where in their use you will find, in many houses, the damper in the pipe turned either completely or to such an extent as practically to prevent the escape of the consumed gas. Even occasionally you will see gas stoves without a pipe at all; simply allowing the fumes to escape into the room. How can persons reasonably expect, living in that manner, to maintain a normal resistance?

3. *Employment in Confined Spaces with Insufficient Light and Air.*—This has been a proposition well understood for many years, and it is noted with pleasure that our own architects are continually striving to construct public buildings and workshops along sanitary lines. This has been in part the result of agitation by health boards and health officers, and in part also the result of the labors of the Superintendents of Workshops and Factories. Then, too, capitalists have come to see the necessity of employing educated and skilful engineers and architects to design many of their factories. Many of these show the improvement along sanitary lines over those which have been constructed from a drawing which represented neither knowledge of the best manner of construction, that the owners might receive the best and largest amount of work from their men, nor an insight into the sanitary needs of these men to preserve their health and consequently their power of resistance to pulmonary troubles.

There is still need of greater knowledge along these lines. Especially is this true of some of our public institutions where overcrowding is often a necessity. In many places men are found working, if not in confined spaces, in darkness or semidarkness. All physicians know that the highest standard of health can no more be maintained in these places than a flower can be made to flourish in the absence of ample light.

4. *Insufficient Sleep.*—Constant and continuous loss of sleep is a factor in impairing and undermining the health. Sleep in sufficient amounts and regularly secured is important in keeping up one's power of resistance.

5. *Excessive and Continuous Use of Alcoholics.*—There is no one fact better understood in medicine than that the excessive and continuous use of whisky or beer greatly weakens one's power of resistance to disease in general, and to pulmonary troubles in particular. Such a patient developing pneumonia not only stands less chance of recovering from the immediate attack, but the lungs are less inclined to clear up, and are made an easy prey to the tubercle bacillus. The power of resistance has been brought to a low ebb.

6. *Congenital Feeble Resistance, Known as Hereditary Tendency.*—When Koch made known his discovery of the tubercle bacillus there was immediately a large body of physicians who arose to proclaim that "heredity had fallen to the ground," but now, I think, most physicians are inclined to believe that heredity occupies a middle ground between the two extremes of its never being hereditary, as the new class of thinkers seem to believe, and its always being hereditary as such a large number had come to believe. Heredity would seem to occupy the position that many persons are born with feeble resisting power, and consequently they are less able to withstand the onslaught of the exciting causes with the same degree of success that one of a vigorous type would. It is unnecessary to quote statistics, but there is no doubt they would prove that the death of many persons who have died in a family one after another would be found to be the result of infection received by constant association with invalid relatives. So those with a hereditary tendency may well take new heart. Their resisting power may be increased. Their health cannot be

neglected with the same degree of impunity that others neglect theirs. They cannot withstand, equally free from danger, the immediate exciting causes of tuberculosis. There has got to be unusual care exercised in the selection of occupation, mode of life, and environments of such an individual, if many of the dangers of falling a victim would be avoided.

7. *Diet.*—A sufficient amount of carefully prepared food is essential to the maintenance of the health in a state that will offer the greatest degree of resistance to the implantation and growth of the infective germs of tuberculosis. There is a large class, in greater relative numbers in our cities, who cannot always obtain a sufficient quantity of nourishing food to maintain a high degree of strength. But there is another class who pay too little attention to the selection of proper food and the cooking of the same. As a result of this the nutrition suffers and the strength declines. There is quite as apt to be overeating, when you may look for indigestion, which, if continued, will only result in lessening the resisting power of the individual. Food of a nourishing character should be taken at regular intervals in sufficient quantity, and be properly cooked.

8. *Enfeebled Health Following Pneumonia and Various Fevers.*—Pneumonia, typhoid fever, malarial fever, measles, and indeed any of the fevers, lower the resistance and make more likely the development of tuberculosis if a decided opportunity has been offered for the germs to gain entrance to the lungs. The soil has been prepared and the tubercle bacilli find ready lodgment. This should serve to admonish us that after these diseases the system should be brought up at once to as high a standard of resistance as is possible. More especially is this true of those who possess already a feeble power of resistance. These should not be allowed to return so soon to a confining occupation after a pneumonia or typhoid fever as others may do. Their health and their resisting power should first be fully restored.

9. *Various Causes Diminishing Resistance.*—Anything that tends to lower the vitality diminishes the resistance which an individual may ordinarily offer to tuberculosis. Environment has everything to do with health. To best preserve the health sanitary laws in general must be obeyed. Many are so situated that they cannot follow these laws, for we must remember that while one may frequently but not always be able to follow the laws of personal hygiene he cannot control always matters of a general character. His environments may be unsanitary and he be unable to control them. Every day that one lives amid such surroundings contributes to the development of a feebly resisting pulmonary soil that yields more readily to the first decisive exposure to some of the immediate exciting causes of pulmonary tuberculosis. When the resisting power of the individual is greatly depressed and consequently the soil more suitably prepared for the development of the disease the tubercle bacilli find lodgment in the system and develop tuberculosis. These bacilli usually enter the system through (1) the lungs; (2) the stomach.

If the entrance be through the lungs the infection is the direct result of breathing the germs from the sputum of some other patient. If the entrance be through the stomach then these germs have emanated (a) from another individual suffering from the disease; (b) from infected meat or milk from tuberculous animals.

If the entrance of these germs has been through the lungs, and that is undoubtedly the usual method of infection, it results in most cases from the careless and indiscriminate spitting in various places. Upon the sidewalks, where it dries and is caught up by the ladies' dresses and dragged into their respective homes; into the streets, where a gust of wind carries the dried sputum mingled with dust into the mouths of pedestrians; into cuspidors about the home or public places, the sputum drying upon the edges of these vessels and from there getting into the air of the room to be breathed

by those about. How frequently in public buildings we see tuberculous patients spitting upon the floor. Herein is the consumptive's crime; it is this which has made so many people ready to ostracize the consumptive.

I have no doubt that if the Pullman Company once understands the importance of having the sputum of tuberculous travelers, and of all travelers, more carefully looked after by frequent cleansing and disinfecting the cuspidors, that they would gladly obey rules of health boards along these lines. They would doubtless, too, be willing to sterilize the blankets by steam after each long trip, if health boards ordered it and popular opinion seemed to demand it.

There is no danger from association with a tuberculous patient if sanitary precautions are taken, but we all know that there are many more who do not take any precaution whatever than there are who do. Still, the number who are seeking to know what to do to protect their fellow men, and who are exercising these sanitary and hygienic measures is constantly on the increase. It is by this assistance becoming still more general that the hope arises of checking the wild career of this disease.

There is a class of people, however, to whom we cannot look for much assistance. This class lives in ignorance, squalor, and poverty. If special hospitals for the treatment of tuberculosis were constructed and these people should avail themselves of their care, there would not only be a very less number of foci of infection to contend with, but at the same time they would be taught many of the sanitary measures to be followed in preventing, not alone the infection of others, but the reinfection of themselves; so that those who recover and return to their homes would better understand how to live along sanitary lines.

These special hospitals or sanatoriums would not only be of value to this class of patients and to the community in which they live, indirectly by lessening the foci of infection, but at the same time to all classes and conditions.

That tuberculous meat was one of the modes of infection of the human race was accepted as a settled proposition until Robert Koch questioned the proposition before the Tuberculosis Congress at London last year. He does not believe that tuberculosis in cattle and the human being is the same. Dr. Koch is practically alone in this position. While he still maintains the same ideas relating to this question it is interesting to note what he had to say at the meeting just recently closed of the same congress at Berlin. In a report of the proceedings of the meeting published in the *Revue d'Hygiene* he said that "he did not doubt that we ought to continue to take precautions to prevent the possible transmission of tuberculosis of animals to man by the milk of cows affected with mammary tuberculosis, but it is necessary from all the evidence to direct our attention in the future for the greatest part of our efforts to the fight against the transmission, infinitely more frequent, of tuberculosis from man to man, and to preserve the greatest sum of our resources and our energy for combating this source of transmission."

At the same meeting Nocard gave the result of experiments which showed very conclusively that animals may become infected either by the bacilli procured from cattle or man. He reported a series of very interesting experiments made by himself illustrating this fact. He fed monkeys, as being more nearly related to man than any of the other animals, on cooked rice infected with cultures of tubercle bacilli obtained in some cases from cattle and in other cases from man.

He fed different monkeys some of the rice infected from the bovine species; the others he fed the rice infected with the bacilli obtained from man suffering with pulmonary tuberculosis. The results are interesting and instructive. He found that all the monkeys fed in this way developed intestinal tuberculosis. The only

difference was that those which were fed bovine tuberculosis cultures, developed more quickly and a more severe grade of the disease than those fed with the human tuberculous cultures. He has no doubt that if man, instead of the monkey, had been the subject of these experiments he, too, would have succumbed to the disease.

One of the strongest arguments offered by Koch against the likelihood of tuberculous beef and milk being the cause of tuberculosis in man is the fact that primary intestinal tuberculosis is rare. Nocard admits this, but points out the fact that there is nevertheless a real danger present. More especially he believes this to be true in the case of convalescents from various diseases, whose resisting power is below normal. Their chief ailment is frequently milk, and in this way he believes many patients become infected. Besides, we must not assume that simply because intestinal tuberculosis as a primary disease is infrequent that the patient who has developed tuberculosis in other parts of the body has not acquired it through the food. We must remember that mesenteritis and peritoneal tuberculosis often exist without other complications. It is more rational to assume that the infection reached these places through the stomach than through infected lungs.

There have now been collected many cases of butchers who have developed local tuberculosis from wounds received accidentally in dressing tuberculous cattle. Some of these cases have gone on to general tuberculosis. Salmon, in the *Journal of the American Medical Association* of December 20, 1902, reports some of these cases. Still, the consensus of opinion now is that by far the greater number of cases of pulmonary tuberculosis develop as a result of the careless disposition of the sputum of infected individuals.

The prevention of the disease is then going to be brought about by the correction, in a large measure, of the predisposing and existing causes of the disease. How best to accomplish this is a large problem, but one which I believe will be solved in the not far distant future. There is greater need of the laity understanding more fully the causes leading up to the disease; of physicians taking occasion more frequently of acquainting their patients with the causes producing the disease and the means of preventing it.

The Ohio Society for the Prevention of Tuberculosis has been established, and this association of people, not all physicians, will doubtless do considerable in not only diffusing information among the public along preventive lines, but through their strength as an organized body be the means of doing much in the way of establishing sanatoriums for its treatment. It seems to me that physicians over the State would do well to help enlarge this organization by coming into it, as it seems reasonable to believe that greater good along preventive lines will be accomplished in this way than fighting the disease single handed. "In union there is strength" applies here as forcibly as in other situations.

It seems but reasonable to suppose that, as the various conditions associated with the predisposing and exciting causes become more fully understood, the dream of its prevention will become largely realized. Koch, at the recent Berlin Congress, insisted: that we should make our greatest efforts along lines that have for their aim the abolishing of the direct and exciting cause; that this main cause he believes to be due to the inhalation of dust containing the bacilli from human tuberculosis; that less effort be expended to search out predisposing causes and more to combating the exciting cause. This last proposition he doubtless offers as the final solution of the prevention of the disease.

Possible Prevention of the Disease Through a Form of Vaccination.—At the close of the recent Berlin Congress, already referred to, a number of the delegates, acting on the invitation of Behring, visited his laboratory at Marbourg, where he, with his two assistants, Doctors

Ruppel and Röhmer, have done much during the past year to demonstrate the sameness of bovine and human tuberculosis. Behring demonstrated to these delegates what had already been affirmed by the experiments of Nocard of Berlin, and reported to the congress that there was a great difference in the virulence of different tubercle bacilli. Behring had inoculated mice with the virulent form of the bacilli, and these little animals promptly succumbed to the disease. With the mild cultures the animals either did not become infected, or only after many weeks. He also found that by regulated intravenous injection of human tuberculosis virus into calves he would render them immune to injection of bovine tuberculosis virus that was absolutely fatal to calves which had not thus been immunized. He terms this immunizing antituberculous Jennerization. He has demonstrated that human tuberculous virus in passing through some animals infected by it, as sheep and goats, acquires additional virulence, which is then capable of infecting cattle with uniformity. While he has succeeded in vaccinating cattle against the disease of course it is too soon to know how long this Jennerization as he terms it will hold good. And if it continues over a long period to render the bovine species immune the problem would still remain to be reversed: to vaccinate man successfully against tuberculosis.

Whatever is the final solution of his problems, he has certainly done some of the most important work in tuberculosis since Koch's discovery of the bacillus.

The Outdoor Treatment of Tuberculosis.—This is not an altogether new form of treatment of the disease, but it is one that has come into considerable favor of late. Especially is this true in sanatoriums where it is adopted as one of the chief forms of treatment. The outdoor treatment is carried on: (1) At home; (2) in tents, usually roughing it; (3) in sanatoriums.

1. *At Home.*—At first thought it might seem that the open air treatment might be carried on anywhere with any one. This is doubtless true if one lives in a place with suitable environments; if he have the means to secure skilled attention and constant direction. He needs to be informed when and in what manner to live out; whether this outdoor life shall be associated with exercise and its amount. Some days the patient is better off without exercise; other days with it. There is nothing to be gained by a patient's exercising with a greatly elevated temperature and feeble and accelerated pulse. At that time exercise exhausts and does harm. The food needs to be a subject of constant inquiry and direction. Carefully selected medicines will form a part of the treatment. Some physicians, in their enthusiasm, have sought to discard medicine and depend upon the open air treatment alone. But we must not lose sight of the fact that the open air treatment is not a specific agent for the cure of tuberculosis. It is a valuable therapeutic agent that should not be lightly regarded, but it is not a cure-all. Much valuable aid will still be found in medicines adapted to the case.

It is not always possible to secure the requisite cooperation of the patient with the physician at home. Some people are mortally afraid of air. It is difficult to induce them to seek it in the way it should be sought. It is one of the effects of a tuberculous deposit in the lungs to set up a bronchitis. So, that as soon as a bronchitis is aggravated, perhaps by the tuberculous deposit, the patient immediately insists that he has taken cold. It is then his belief that the exposure to the outside air is the basis of the bronchitis. From that time on cooperation is difficult to secure. These patients will do better in sanatoriums, where they will receive the encouragement to carry out faithfully the treatment through the example set by the other patients.

Can tuberculous patients be treated as well at home with open air treatment as by a change of climate? In

some seasons of the year they can, at others not. In the summer, fall, and late spring, we have weather, a large part of the time, that is suitable for the outdoor treatment. In the winter there are periods when there must be some interruption in the treatment. Much may be accomplished in our own climate by the open air treatment. However, a climate that has a maximum amount of sunshine and a minimum amount of rain and an equable temperature permits a patient to be out of doors more days in the year than a climate where winters are more or less severe, and at other seasons rain and cold raw winds driving the patient to cover. Still, in a climate like our own, we may successfully treat many of our patients at home, and in their homes by the open air treatment.

2. *Roughing it in Tents.*—Quite a considerable number try this method of treatment in some regions of Colorado, Arizona, and California. But for one to try this method he should not be in a greatly enfeebled condition. He should not be suffering from a considerable elevation of temperature. Roughing it means a large amount of exercise. When one is suffering from a high elevation of temperature he is no more able to endure the fatigues due to the amount of exercise associated with this form of life than one suffering from typhoid fever. This same rule applies to those who go or are sent by their physicians to those regions possessing a reputation for the cure of tuberculosis to live in cabins and rough it. Only in the very early stage, and then when the patient possesses considerable strength and there is comparative absence of fever, can he be assigned to this mode of life with a reasonable degree of hope of benefit or cure.

3. *Treatment in Sanatoriums.*—In England and Germany large numbers of sanatoriums have been constructed. These have been built and are operated for the purpose of instituting treatment for tuberculosis by the open air method. A large number of other countries have followed in their wake. The United States now has quite a few, as a government, however, it operates but two; one, the Army hospital and sanatorium for the treatment of pulmonary tuberculosis, at Fort Bayard, New Mexico, and the other, the United States Marine-Hospital Service sanatorium, at Fort Stanton, N. M. Both of these sanatoriums show good results. Some of the States have established sanatoriums, and in all cases good results have come by reason of their construction and operation. They are all operated upon much the same lines, but one only has to read the report of the Army and Navy sanatorium to see what is accomplished. The most rigorous system of hygiene prevails throughout the sanatoriums. The sputum is all collected in cups and burned. A patient is not permitted to expectorate promiscuously and thus infect others and reinfect himself. The patients are kept in the open air, but have shelter arrangements as necessity requires. Medicines are given as required; exercise is regulated; food carefully supervised. The Fort Stanton (Marine) sanatorium reports in the *American Medical Association Journal*, December, 1902, 24% of recoveries. The Fort Bayard (Army) sanatorium in the same journal, November, 1902, shows good results but a lower percentage of recoveries. Still some of the patients admitted may have been in such an advanced stage as to account for this discrepancy. This sanatorium is doing equally good work with its sister sanatorium of the Marine-Hospital Service. Some sanatoriums show a still higher percentage of recoveries.

But we must not expect too much of sanatoriums in general, or of the open air treatment. Judiciously used it is a valuable aid in treatment. No doubt some in their enthusiasm will go so far as to do harm. But the principle involved seems to be clearly right, that by spending much of his time in the open air the patient increases his appetite, his weight, his resistance to the disease; while the fresh air and sunlight diminish the

virulence of the tuberculous virus. But the sanatoriums have another function than the cure of the disease. Their establishment is a wonderful sanitary measure for its prevention. They will draw for their patrons, in large measure, those who are living in unsanitary surroundings; those who do not understand the means to avoid infecting others and re-infecting themselves.

Ohio should place herself abreast of the times, and establish sanatoriums for the treatment, and indirectly the prevention of pulmonary tuberculosis.

POSTPARTUM SUBINVOLUTION.¹

BY

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In performing its part in the function of reproduction the uterus passes through a great cycle. A cycle which begins with the first changes in the mucous membrane preparatory to the reception of the fertilized ovum, and ends with the final shrinkage and return to normal after the birth of this child and placenta. The changes which occur during the cycle have afforded interesting study, and a brief reference to those bearing upon our subject may not be out of place. The most conspicuous changes are those occurring in the size of the uterus. A small organ weighing $1\frac{1}{2}$ ounces becomes in nine months a muscular sac weighing 2 pounds, which in about six weeks shrinks again to its original size. Up to the fifth month the enlargement is due not so much to the pressure of the fetus as to the hypertrophy of the uterine walls. These increase by a very considerable growth of the individual muscular fibers, which become 10 times longer and 5 times broader. Whether or not there is a formation of new muscle fibers is a matter still to be decided. The interstitial connective tissue increases also, but here a true hyperplasia with numerical increase in the cells takes place. The uterine appendages and ligaments undergo changes. The round ligament elongates and the small amount of muscle fiber seen in the unimpregnated state becomes augmented to an appreciable extent. The ovarian and uterine arteries enlarge, and by the formation of new vessels penetrate every part of the rapidly-growing organ and provide the means of nourishment to the child, until by its first cry it makes its claim to an independent existence. From the fifth month to the end of pregnancy the developing fetus with its appendages is largely responsible for the increasing size of the uterus, the walls of which become thinned and stretched.

The first pain of labor inaugurates the retrograde process or involution. By contraction and retraction the uterus diminishes its volume and empties itself of child and placenta. The contractions and retractions continue, and the blood supply in consequence is decreased by obliteration of the vessels. The exact manner in which the muscle fibers return to normal is still a subject of discussion. The older theory attributes the shrinkage to fatty degeneration and absorption. The investigations of Helme, however, lead him to state that fatty degeneration does not occur and that the contraction is accompanied by a peptonization of parts of the muscle fiber, and this liquid portion of the cell is taken up by the circulation. With these changes in the uterus a corresponding process goes on in the ligaments, though more slowly in proportion. Without entering into the

discussion of the theory of involution, it can be said without question that two factors are necessary for its successful accomplishment. Those two factors are a continued and firm contraction of the muscle and a much diminished blood supply. When one or both of these factors are absent and the uterus fails to return to its normal size in 8 to 10 weeks subinvolution may be said to be present.

Sir James Simpson first called attention to this condition nearly 50 years ago, and spoke of some of its relations to pelvic pathology. As a pathologic entity subinvolution is rarely seen, and it is more from its association with other pelvic conditions that it calls for careful consideration. Subinvolution may hardly claim the dignity of a position in pathology, for it is simply a condition. It occupies rather a unique place in its relation to disease of the pelvic organs, as it may be in one case the immediate cause, and in another the direct result of the same pelvic condition.

The changes that are found in the uterus are those of enlargement. The size of the organ varies from a uterus that may be felt above the symphysis to one which may only be discovered by a bimanual examination, or by the use of the sound. The condition is due simply to a failure of the individual muscle fibers to retract and become smaller. Inflammation is only present as a secondary process. If the condition remains untreated, the interstitial connective tissue will proliferate as an inevitable result of chronic congestion. This tissue later becomes contracted, and the uterus becomes, in consequence, somewhat smaller, but still larger than normal. The vessels by this contraction are also obliterated to a great extent. In the earlier stages the mucous membrane is thickened, congested, and bleeds easily upon the introduction of the sound. The uterine appendages remain large and congested. The round ligaments fail to return to their normal size, but are elongated and weakened, thus easily permitting a large, heavy uterus to become retroverted. The associated pelvic conditions are perhaps a lacerated cervix, a corporeal or cervical endometritis, and frequently a retroversion. With acute or chronic pelvic inflammatory conditions, or in the presence of a fibroid, subinvolution will almost surely follow labor.

The etiology of subinvolution means, generally, a consideration of the influences which prevent contractions of the uterus, or which maintain an abnormal congestion during the period of involution. These two factors are usually interdependent, but occasionally one or the other alone is responsible. Constitutional disease may sometimes be accountable for subinvolution, but usually a disease which will cause it must be serious enough to overshadow the importance of an enlargement of the uterus. Too early rising from childbed may be mentioned as a causal factor by maintaining pelvic congestion, but this probably exerts its influence as a cause most often in the presence of other pelvic conditions. Of all causes, local ones are the most frequent. Laceration of the cervix is doubtless a common cause, though on this point there exists some difference of opinion. So great an authority as Herman tells us that injury to the cervix, in the vast majority of cases, is productive of no trouble other than local inflammation of the cervix. But the frequency with which a subinvolved uterus is found with an injured cervix, certainly must convince us that the association is not always an accidental one. Emmet, on the other hand, held lacerations to be almost the only cause for subinvolution, for he says in his book on diseases of women "for many years past I have met few or no cases of subinvolution that were not due to laceration of the cervix."

The relation that subinvolution bears to retrodisplacement as a cause or an effect is worthy of careful attention. Its influence as a cause is easily appreciated. The round ligaments in sharing the failure of the uterus to undergo involution, remain elongated, and a bulky uterus, with

¹ Read before meeting of Erie County (N. Y.) Medical Association, September 8, 1902.

a tendency to fall backward, soon results in further displacement, until finally it occupies a position of retroversion. Or as an effect, a retroverted uterus becomes pregnant. During the puerperium, as soon as its size will permit, the uterus resumes its old position that continues a congestion which must almost surely result in subinvolution. Other obvious local causes would be the presence of retained clots or bits of placenta which, naturally, prevent perfect uterine contraction. Unfortunately, subinvolution as a rule does not make itself manifest until, as a cause of other pelvic conditions, it forces the patient to seek aid. Possible symptoms are a feeling of weight in the pelvis, a continuance of the lochia beyond the usual period, and later, perhaps, an assortment of reflex signs. Marked symptoms accompanying subinvolution are those of the exciting or resulting pelvic conditions.

The diagnosis presents no special difficulties. An examination will reveal its existence. If the bimanual method is unsatisfactory, the careful use of the sound is harmless and will give conclusive results. The uterus is not painful, and this point distinguishes it from chronic metritis with enlargement, the only condition with which it is liable to be confused. The history will also usually discover inflammation to be the cause of the latter. The question as to when involution should be completed may arise in connection with the diagnosis. As a general rule involution should be completed at the end of eight weeks, and if then the uterus has not returned to normal a diagnosis of subinvolution may be made safely. One should not be satisfied with the diagnosis of the condition alone, but with a view to treatment the underlying causes should be sought for as well.

From the connection subinvolution has to pelvic pathology, prophylaxis and treatment will necessarily mean attention to the prevention and treatment of those conditions which act as causative factors. It is for this reason that the systematic examination of patients during the puerperium cannot be urged too strongly. I believe that the blind reliance in the puerperium as a physiologic state is responsible for many adherent retroverted uteruses. A labor which has proceeded and terminated in accordance with every physiologic law governing it, does not necessarily give us assurance that the period of involution will likewise be normal. Many careful physicians attend their patients in labor ever ready to correct any departure from normal, and yet these same physicians permit their patients to resume household duties without any attempt to learn whether or not the pelvic organs have in any way suffered, and only in the presence of symptoms that seem to demand it is such an examination made. There should be at least two examinations following every labor. The first at the end of two weeks, the second at the end of two or three months. By the first the existence of injury to the cervix or displacement of the uterus may be determined. The progress in involution may be also noted, and if it be satisfactory, in the absence of laceration or displacement, it may be safely assumed that, with reasonable care on the part of the patient, involution will proceed. By reasonable care is meant the gradual resumption of household duties and avoidance of all that may tend to produce pelvic congestion. The custom prevailing among many women of the better class of putting on the corset so soon as they are on their feet must, in many cases, have an evil influence on the position and condition of the uterus. Actuated by the desire to restore her figure to normal proportions the patient often compresses the waist, exerting sufficient pressure to disturb the position of the pelvic organs and maintain an undesirable congestion.

If on the first examination a torn cervix is found, remembering the influence it has upon the production of congestion, the physician should, during the remaining period of involution, take steps to deplete by the hot

douche and even in some cases by the tampon. On a subsequent examination at the end of 10 or 12 weeks, if we find that involution has not proceeded in a satisfactory manner, the question as to the advisability of repairing the cervix is an important one. Allusion to the difference of opinion as to the part a laceration of the cervix plays in subinvolution has already been made. That its repair does seem to have an influence in lessening the size of the uterus seems to be well founded clinically. But an opposite opinion which claims that it is only the enforced rest in bed that benefits cannot be entirely ignored. Granting even that this be the case and that it is the rest that is responsible for the improvement, with repair of the cervix the patient has the additional satisfaction of knowing that the injury is repaired and the surgeon may enjoy the consciousness that a possible avenue of infection has been closed and a favorable site for cancer removed.

Much may be done during the puerperium, both preventive and curative in backward displacement. If on the first examination tendency to retroversion is found, measures to support the uterus should be promptly taken. The Hodge-Smith pessary should be carefully fitted and the patient required, if possible, to remain in bed beyond the usual time. By thus supporting the uterus the round ligaments have the opportunity to become properly involuted. As involution proceeds a smaller pessary should be fitted and worn until involution is complete. In those cases in which a retroversion is known to exist before the occurrence of pregnancy the backward displacement in many cases may not only be corrected for the time, but even cured by care during pregnancy and the months following confinement. During the early weeks of pregnancy a pessary should be worn until the uterus rises in the pelvis and its falling backward is thus prevented. Four or five days after labor a large pessary should be inserted until involution has proceeded far enough, when a smaller one may be fitted and finally, when involution is completed, if necessary, the pessary may again be changed and this worn for four or five months. Not infrequently on removal it will be found that the uterus will remain in its proper position. Not every case is so successful, but it is worth the trial, as at least opportunity is given for involution to take place.

The treatment of other etiologic factors may consist in curetage when a hypertrophied endometrium is at fault; the removal of clots or membrane if these are found to be the cause; the management of acute or chronic pelvic inflammations should be conducted along general lines. The treatment for uncomplicated subinvolution is simple and in most cases satisfactory. Rest in bed, attention to the general condition, combined with the hot douche and glycerin tampon will ordinarily give the desired result. The application of the faradic current to the subinvolved uterus has been used with success. Theoretically ergot should be of benefit but clinically it is disappointing in effect.

Improvement in the care of women during confinement has resulted in doing away with a vast amount of suffering. Hundreds of women yearly are saved much discomfort by prompt repair of the perineum, for in these days no intelligent physician leaves his case before an examination satisfies him as to its condition at the close of labor. The timely use of forceps has made fistulas of the parturient canal a rare result of childbirth. Still even now the large majority of women seeking relief from the gynecologist date their condition to errors or accidents during labor or the puerperium. If then by more careful attention to the puerperium we may further lessen the number of unfortunates, should not our every effort be to carry out in practice, and educate our patients to the fact, that it is not the labor alone but inattention to conditions during the puerperium whereby recruits are added to the great army of suffering woman-kind.

COURSE OF DISEASES DURING PREGNANCY.

BY

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The physician who has under his observation the diseases complicating pregnancy should be not only an accomplished accoucheur but an intelligent pathologist as well, in order to understand thoroughly the alterations that pregnancy brings in the course of the disease, and those that the disease will assume during pregnancy. We must bear in mind that the functions of the pregnant organism undergo special changes at this time—and that, as an after result, the diseases either existing before or those complicating pregnancy assume a particular character. This fact must be taken into serious consideration by the physician, whether he is a specialist or a general practitioner, for, as statistics clearly show, such a lack in our clinical education is very often the source of mistakes which are sometimes fatal.

DISEASES OF THE CIRCULATORY APPARATUS.

Corresponding to the enormous development of the vascular system in the gravid uterus, there is an increase in the total quantity of blood in the circulation, accompanied by an alteration in its constituents (water, hemoglobin, globules, albumin, etc.). The amount of water in the blood of the nonpregnant woman is about 799 per 1,000. In the pregnant woman it reaches during the last months from 815 to 818 per 1,000. The proportion of the red and white corpuscles is diminished; the number of the red varying from 2,500,000 to 4,000,000 per cm., and that of the white from 4,000 to 10,000 per cm.

Max Miskeman and Quinquad say that the hemoglobin and respiratory power of the blood is diminished during pregnancy, while Richard Shroeder asserts that it is increased. The fibrin is augmented in the last three months of pregnancy, and renders the blood more coagulable, thus contributing to moderate hemorrhages after delivery. The hydremic condition is consequent to the demand made upon the maternal system by the growing fetus. As a necessary result of the addition to the total blood supply there is increased work thrown upon the heart. We have, during the period of pregnancy, the same condition described by Professor Murri as *plethora hydremica*, and observed by him among persons drinking great quantities of water, and this is especially noticeable in the laboring country class (contadini) of the Italian campagna. This condition gives rise to slight dilation and hypertrophy of the left ventricle of the heart, very often accompanied by a systolic murmur (souffle) heard in the cardiac area, equal in character to the souffle of chlorosis. The hypertrophy and systolic murmur gradually disappear after delivery. Dreizel, Paul and Charpentier deny the hypertrophy.

The arteries show an augmentation of the arterial pressure. There is stasis in the venous circulation, especially marked in the lower part of the body. It is for this reason that there is so frequently hemorrhoids, edema and varicosity of the lower limbs, of the vulvo-vaginal portion, and sometimes of the abdomen. The physiologic changes in the circulatory apparatus increase the liability of the healthy pregnant woman to heart disease. This would lead to the question, Can pregnancy alone be the cause of a permanent heart disease?

In consulting the literature there is found considerable confusion and difference of opinion. The obstetrician, especially one practising in hospitals, generally has no chance of observing the patients after delivery, and the general practitioner in detecting a disease of the heart does not consider previous pregnancies as a predisposing cause.

Professor Pinard, of the Clinique Bandeloque in Paris, believes that pregnancy is only a secondary cause of heart disease, that the hyperactivity of the heart

functions during pregnancy helps in disturbing the equilibrium of the circulation in a person who already conceals a determined diathesis. Thus, according to Professor Pinard, all the so-called gravidocardiac disturbances so carefully described by Peter are due to a previous diathesis.

My personal observations, made during 18 months on patients in the Rotunda Hospital, in Dublin, the Clinique Bandeloque, in Paris, and the Clinica Obstetrica of Bologna, have given me the opportunity of noticing that heart lesions, detected in women who have had three or more pregnancies, and whose history did not show any special diathesis, were, in the proportion of four to five, affected by valvular insufficiency. I am inclined to believe that this kind of insufficiency is the so-called relative insufficiency and is due principally to the hypertrophic condition of the different segments of the heart during pregnancy, which is always accompanied by a diminished nutrient power of the blood. This relative insufficiency would also seem to explain the systolic murmur noticed sometimes in the cardiac area. If we admit a tendency to primary heart lesions, due to pregnancy, we should adopt prophylactic treatment during pregnancy to guard against the possibility of these troubles.

Treatment.—Owing to the fact that the heart troubles, if admitted, are due to the overworked condition of the heart in consequence of the hydremic plethora, the rational treatment would be to counteract this condition by prohibiting any unusual muscular work on the part of the patient. We should prescribe a great deal of rest, especially if the patient is weak and anemic. To avoid the unpleasant complications of stasis that could arise from the rest cure we must supply the lack of exercise with massage. To counterbalance the diminished respiratory power of the blood corpuscles and the consequent hemolysis, a cytogenic treatment could be adopted during the last months of pregnancy.

The endocarditis, either acute or chronic, observed during pregnancy, is generally caused by streptococcus, and in the majority of cases is due to a preexisting metritis.

Influence of Pregnancy on Coexisting Cardiac Diseases.—If the heart lesions coexist with pregnancy the various effects produced by pregnancy depend entirely upon the seat and character of the cardiac affection, but, as a general rule, pregnancy renders the course of cardiac diseases more serious, and very often the results are most disastrous. This is due to the fact that an amount of cardiac hypertrophy, which is entirely compensatory for preexisting valvular lesions, is not able to overcome the increased arterial and venous pressure prevailing during pregnancy, nor to adapt itself to the sudden variations in the vascular tension during labor. The mitral lesions, and especially stenosis, suffer from the *contrecoup*, while aortic lesions are only affected in a slight degree.

What the physician must know is that the asystolia in pregnancy assumes a special character due to the predominance of pulmonary troubles. Peter says that "La femme enceinte atteinte d'une cardiopathie meurt par le poumon." The asystolic troubles assume the character of regularly intermittent crises and are accompanied by pulmonary congestion, intense dyspnea, and very often by pulmonary apoplexy. The patient reaches rapidly the terminal period of asystolia, while in the nonpregnant woman that point is reached by degrees. Another special character of these cardiac troubles during pregnancy is the contrast between the gravity of the pulmonary affections and the benignity of the other phenomena (edema of the lower limbs, congestion of the liver, and congestion of the kidneys).

Besides those cases in which the mechanical troubles are more evident, we have others in which the predominant symptoms are those due to a want of compensation of the cardiac innervation. In this last case there exists tachycardia with considerable arterial hypotension.

Influence of Cardiac Diseases on Pregnancy.—Professor Porack, of the Maternité Hospital in Paris, has demonstrated, with his careful and valuable statistics, that an average of 41% of pregnant women affected with cardiac troubles do not reach the full term, abortion or miscarriage terminating the pregnancy. Brown-Séquard thinks that the excess of carbonic acid in the blood of the woman with cardiac disease is the cause of premature contractions of the uterus, and as a natural consequence of premature delivery. If the patient with cardiac trouble does reach full term one of the most common and very dangerous complications is the metrorrhagia during or after labor; the hemorrhage endangers the life of the patient, and when death is not the immediate result, a severe chronic anemic state with all its consequences follows delivery.

Prophylactic Treatment.—Very often the unmarried woman comes to the physician for special advice. She wishes to be married but has heart trouble, and therefore desires to know if it will be safe for her to marry. Some authorities think that such a woman should be absolutely prevented from marrying, while others would allow the marriage according to the degree of heart lesions, but all, speaking theoretically, forget that the young woman comes only for a positive consent. If the physician refuses to give this consent she will try to find a more lenient one, and possibly she will do so, but if she does not, she will marry without this consent. Such examples are before our eyes every day and everywhere. In theory I should feel more inclined to allow marriage to a woman with aortic lesions than to one with mitral lesions, but in practice we must not give rude denials, but should talk sensibly to the patient, showing her the dangers of marriage, and prescribe for her a program of life suitable to the lesion with which she is affected and if necessary caution her against child-bearing.

Medical Treatment.—This is the usual treatment of cardiopathies, bearing in mind that the woman has a special tendency to congestions. Bleeding would be very useful in such cases.

Obstetric Treatment.—If the woman is in danger during pregnancy, induce abortion or premature labor. If she dies in the last weeks of pregnancy, and the fetus is alive, cesarean section should be performed. During labor the strength of the heart should be kept up by cardiac stimulants. If the cardiac troubles become dangerous to the life of the patient, labor should be accelerated by dilation of the internal os and accouchement forcé performed. After labor tonic treatment should be instituted, and the mother prohibited from nursing the child.

Varicose Veins.—Dilation of the veins of the legs, rectum, and vulva occur with greater frequency in multiparas than in primiparas, and is referable, in part, to the pressure exerted by the gravid uterus on the iliac vessels, to the increased tension of the pelvic vessels, and to the modification of the nervous system (nervous lesions of the veins). The tendency of the gravid uterus to lie on the right side of the body explains why varicose veins tend to affect the right side instead of the left, as usually happens. Varicose veins of the lower limbs can be deep or superficial. The saphena are always first affected, then the lateral branches upon the inner surface of the leg and thigh, especially above the knee. They generally appear after the second or third pregnancy, unless the patient is predisposed to them. The tissues that surround the varicose veins become more or less thickened, and the limbs are much increased in size. The natural tendency of varicose veins is to disappear after delivery. It should be borne in mind that if the varicose veins disappear before delivery intra-uterine death of the fetus may be suspected.

Complications.—The varicose veins of the inferior limbs in the pregnant woman generally disappear without giving any inconvenience, but sometimes, especially

in the laboring classes, they prevent work on account of the complications, the most frequent being (a) edema, especially of the dorsal part of the foot, and of the inferior third of the leg; (b) eczema, which if left untreated, generally gives rise to (c) varicose ulceration; (d) phlebitis, periphlebitis, and phlegmonous periphlebitis, (e) rupture of the varicose veins, and hemorrhages.

Treatment.—As the varicosity of the veins of the lower limbs disappears after delivery it is not only useless but dangerous to resort to any radical treatment during pregnancy; the hygienic treatment is the only one to be used at this period. The woman affected by varicose veins must avoid long standing and walking and abolish garters. If any of the foregoing complications are threatened complete rest must be advised.

Organs of Generation.—Varicose veins of the broad and round ligament seldom occur and are of no consequence. Varicose veins of the cervix are not uncommon, and are easily detected by an examination with the speculum. When a physician is attending a pregnant woman he must assure himself if there are or are not varicose veins of the cervix, as their rupture is easy, especially during labor and after delivery. When prepared for such an occurrence he can easily avoid severe and dangerous hemorrhages by pressure, before, or by ligature, after delivery. The vulva and vagina are very frequently the seat of varicose veins. Those of the vulva are generally situated between the labia majora and the labia minora, or only on the labia majora. They are nearly always unilateral, and sometimes extend to the clitoris and mons veneris, and also to the vagina. At times they assume immense proportions, so that they appear to be large tumors of the labia. These varicose veins can be broken easily during pregnancy and during labor; one of the common causes of rupture during pregnancy being the frequent scratching of these parts by the patient, on account of the tormenting sensation of pruritus that is produced in the vulva. Varicose veins of the vagina are detected by separating the labia minora. They appear like blue flexuous cords piercing the walls of the vagina. They are apt to rupture during labor and during pregnancy. One of the causes of rupture during pregnancy is coitus. Tarnier speaks of a butcher's wife who died of hemorrhage in a few minutes after coitus. Varicose veins of the anus and rectum are of frequent occurrence during pregnancy and after delivery. During pregnancy they are due to the common cause of varicose veins in the pregnant state, and also to constipation, while those that we sometimes detect soon after delivery are due to a traumatic cause, *i. e.*, to the pressure of the head of the fetus on the rectum during delivery. Treatment: Avoid by the use of enemas the straining of constipation, and try to diminish the size of the veins by slight massage in a warm bath.

GASTROPTOSIS AND GASTRECTASIS.

BY

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The subject of gastric surgery is coming more prominently before the profession every day. While a few pathologic conditions of the stomach have been treated successfully by surgical means for a considerable time there are two conditions with which surgeons have dealt but very recently, *viz.*, gastroptosis and gastrectasis. These offer a highly satisfactory field for the employment of the surgeon's art. It is natural to consider these two conditions together. The symptoms are practically the same, the medical treatment is identical, and the two conditions often coexist. Before considering the surgical treatment of these conditions it is well to refer briefly to the medical.

The administration of proper medicines, regulation of the diet, and the careful control of daily habits may afford relief in many cases and make life fairly comfortable; others may be greatly benefited, but some patients, even with the most careful observance of dietetic and hygienic rules and the most intelligent administration of drugs, fail to receive benefit, continue to suffer most distressing symptoms, and gradually lose weight and grow weaker. Then there are patients, relieved somewhat while taking medicine and receiving the usual care, who immediately lapse to the old condition upon cessation of treatment. They receive no permanent benefit.

Lavage is of the greatest value in the treatment of acute gastric disease in children, and in certain forms and in special individual cases of gastric disease in the adult it is of benefit, but it has not the *curative* value nor is it of such value as a means of relief in simple dilation, in gastroptosis or in chronic indigestion as was once believed. The mechanic treatment of gastroptosis seems quite irrational and in many cases impracticable, but it is probably useful in some cases and worthy of trial in all. All the means mentioned should be tried before a resort is had to surgery. Some patients, however, are not helped by any of these measures, no matter how thoroughly employed, and it is in this class that at present operation seems to me advisable.

The two operations which seem most rational and safe are Dr. H. D. Beyea's operation for gastroptosis, and gastroplication for gastrectasis.

According to *American Medicine*, October 11, 1902, gastroplication has been done about 17 times, the results being almost universally in its favor. This we should infer, as it does away with the dilation and is a safe procedure. I have done the operation three times on dogs for the purpose of learning the character of the union between the approximated borders of the infolded portion of the stomach. The animals were killed by means of chloroform three weeks after operation. In every case the result was all that could be desired, the line of union neat and most substantial. This was, of course, to be expected from the known results of other operations on the stomach and other parts of the alimentary canal. But I operated on these animals to satisfy myself by actual examination as to the results of this particular operation. On opening the abdomen of these animals postmortem, the peritoneal surface over the anterior wall of the stomach, the part in which the plication had been made, was seen to be perfectly smooth, and at first I thought the stitches had given way and the work was a failure. It could not be easily determined by ocular inspection just where the row of stitches had been placed. The line of union, however, could easily be made out by the sense of touch. A linear mass of what felt like cicatricial tissue could be detected, and corresponding to this in situation, on the inner surface of the stomach, was an elevation or fold of mucous membrane which was loosely attached and movable over the submucous tissue, as in other parts of the stomach, and, of course, unaffected by the healing process. It may be added that the glandular area was not diminished. Practically, this may not be of any advantage. Neither is it in the least probable that the normal movements of the stomach are interfered with by the long, narrow scar, as each muscle fiber receives its stimulus through its motor neuron. It might be objected that cases of marked atony would not be improved, but this is unlikely, as reducing the dilation would allow the muscles to regain their normal tone; and even if they did not, it is practically certain that a small atonic stomach would produce less distressing symptoms than a large one. So from every point gastroplication promises to be a complete success.

In regard to Dr. Beyea's operation, experience is likely to prove all that is claimed for it. At the present time (November 12, 1902) there have been seven patients operated on by this method. One of them happened to

be a patient of mine, and I desire to give a history of the case, with a few comments:

The patient was Mrs. D., aged 53, a housewife. Her family history is good so far as could be learned, except as regards two sisters, who have stomach trouble, one very severely. The patient had scarlet fever at 17 years, and diphtheria at 32. She has had four children, all born prematurely. Two died a few hours after birth, one at six months, the other at three years. The patient suffered from dyspepsia for years, with frequent pain ("cramps") and vomiting. The last stomach pain she had was in January, 1901. Since then she has had no pain, but has suffered greatly from indigestion. At times she was able to take but a very small quantity of water, and would go for several days with practically nothing to eat, the least food causing the most distressing symptoms. When a young lady she weighed 116 pounds; in September, 1901, she weighed 89 pounds, and on April 8, 1902, her weight was 77 pounds. She was quite deaf. She had no desire to urinate while standing, but from $\frac{1}{2}$ to 2 hours after lying down she had to get up to pass urine. She urinated 2 or 3 times each night, but never during the day unless she lay down.

Physical examination showed the lesser curvature of the stomach to be at the umbilicus and the greater curvature near the symphysis pubis. Test of the gastric contents showed the presence of hydrochloric acid. Both kidneys movable. An attempt was made to determine the capacity of the stomach by introducing the stomach tube and filling the organ with water. The patient was told to raise her hand when the stomach became so full as to cause distress. When this sign was given the water was siphoned off. Two such tests were made at different times and both indicated that there was no dilation. Thirty-six fluid ounces were poured into and drawn from the stomach each time, due allowance being made for possible errors. This method was used because it was found more difficult to decide whether there was dilation with the presence of gastroptosis. There being no dilation the pylorus was assumed to be normal.

During the first week of May last Dr. H. D. Beyea saw the patient with me, concurred in the diagnosis, and recommended his operation, which was heartily agreed to. Dr. Beyea operated at the Bridgeton Hospital on May 8, using the method for elevation of the stomach which he devised, which, as is well known, consists in the shortening of the gastrohepatic and gastrophrenic ligaments. The patient, though extremely weak, recovered promptly from the operation. She was kept in bed six weeks, left the hospital on July 11, and has had no symptom of indigestion since. She is now in good health, is able to take all kinds of food, and has gained 10 pounds. This is not such a great gain, but the patient was never stout, and she is still gaining.

A few days after the operation it was noticed that the patient's hearing had greatly improved—seemed entirely normal—and this improvement has continued to the present time. Further, she does not have to get up at night to urinate, but urinates during the day as other people. I accounted for the nocturnal urination before the operation by the theory that as the stomach was low and the mucous membrane in an abnormal condition fluid was not absorbed from it. The pylorus was also higher than a great part of the stomach, consequently fluid remained in that organ until the patient placed herself in the horizontal position, when it passed more readily into the intestine, from which it was absorbed. It is unnecessary to assume, however, a diseased condition of the mucous membrane to account for the non-absorption of water by the stomach. Vierordt states that "water in only small quantities is absorbed by the stomach; the freer it is from dissolved constituents the more completely is it transported, portion by portion, into the duodenum." This statement is confirmed by the work of von Mering and Moritz, mentioned by Vierordt. It would be interesting to know if the symptom of nocturnal urination in extreme cases of gastroptosis and gastrectasis is at all constant.

A thought which suggests itself to me in considering this subject concerns the work of physicians and surgeons in this class of cases. While the work of the latter is enlarged there is no detracting from that of the former. It would seem now that physicians instead of having lists of these patients who go about from one doctor to another, receiving no benefit here and very little there, reflecting discredit upon the science of medicine wherever they go, can, with the cooperation of their patients, supplement their own work by that of surgeons and share with them the credit of restoring to health patients who have heretofore gone without relief.

A DIAGNOSIS BY POSTMORTEM LAPAROTOMY.¹

BY

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Because of the misleading character of certain symptoms and the difficulty of making a positive diagnosis, the following case may be of sufficient interest to place on record:

Mrs. D., aged 44, previously in good health, was taken sick November 18, 1901. The leading symptoms were severe pain in the left hip on motion, first felt on the seventeenth, increasing in severity till she went to bed on the eighteenth. As the attack seemed much like previous attacks which had yielded promptly to antirheumatic treatment she was given potassium acetate, 1 gram (gr. 15), every three hours, largely diluted in aqua gaultheria, this being the remedy which had uniformly given most speedy relief in previous like attacks. On the nineteenth she was better and sat up most of the day, but walked about with difficulty. On the twentieth she was again worse and the evening temperature was found to be 101.5°. From this time the symptoms seemed to justify the diagnosis of a subacute type of rheumatic fever. Within a few days there was moderate swelling with marked tenderness over the left sacroiliac synchondrosis. The left knee was painful on motion within a week and the left ankle, less painful than the knee, a little later. There was only slight swelling of the knee and ankle, which were kept wrapped in absorbent cotton for three weeks or less. Like symptoms continued for about six weeks when the temperature reached normal in the morning for several consecutive days. Then the right side became painful; especially the hip, with most swelling at the right sacroiliac synchondrosis. There was very little swelling elsewhere, although the muscles over the ilium part of the thigh and calf of the leg were painful on motion and tender on firm massage.

Again about the twelfth week it seemed as if convalescence was beginning, but again recrudescence of symptoms set in, gradually fading but not entirely absent at the end of four months. Many of the drugs recommended for rheumatism were tried, but of them all the stomach would tolerate only the vegetable salts of potassium for more than one day. Salicylic acid, rubbed into lard, was used freely in connection with massage of tender muscles and joints with some apparent benefit. Early in February the patient took whoopingcough from her young daughter, and during the next six weeks suffered from a severe form of that distressing affliction. The heart had not apparently been seriously affected, but in her emaciated condition it often seemed as if those distressing paroxysms of coughing might be too great a strain for the weakened cardiac muscles. By the latter part of March the cough had abated considerably, and there was not much pain on movement of the lower extremities. By April she could use her limbs fairly well and was nearly free from pain. During April she gained in freedom of motion so she could get out of bed and walk across the room with some support. All this time there was a daily rise of temperature to about 102° in the evening. Even the morning temperature was only rarely normal. Urine had been normal throughout. No tubercle bacilli could be found in the sputum which seemed to be merely watery mucus. In March I first discovered an abnormal dullness and resistance on palpation in right flank reaching below the normal liver dullness about the extent of a man's hand. This was only slightly sensitive on pressure and did not seem to change in size or shape as the weeks passed. The patient had attacks like acute indigestion several times following our attempts to give her more nutritious diet.

Being placed again on milk, beef jelly, rice, and other light diet, she would seemingly make slight gains, but temperature remained steadily elevated and pretty constantly between 101.5° and 102° F. in the evening, while there was manifestly a steadily increasing emaciation. She was uniformly cheerful and optimistic as to final recovery; this, with constant pyrexia and growing emaciation, strongly suggested tuberculosis, of which we could get no positive evidence. About April 26, 1902, Dr. F. C. Shattuck, of Boston, saw the patient in consultation. His very searching examination was practically negative, except for the mass in the right flank, which seemed most like an enlarged and displaced kidney or a neoplasm connected with the kidney. The absence of positive knowledge whether the mass had existed before her illness added to the obscurity of the case and a positive diagnosis was not made. Examinations of blood, sputum, and urine at this time were negative. The question of possible relief by surgical interference was fully considered and advised against. Two weeks later Dr. Reginald Filtz, of Boston, saw the patient, and again, after a careful examination and thorough consideration of all the symptoms, no positive diagnosis could be made. An enlarged and displaced kidney seemed to explain best the dullness and resistance in the right flank, and no pathologic condition of the

lungs could be made out. During May, June, and July our patient grew more and more emaciated, although taking a fair quantity of nourishment and sleeping fairly well. She sat up from one to two hours on many days, and did considerable sewing. She was inclined to make her own diagnosis, and thought at one time she had cancer of the stomach, and at another time asked if she did not have consumption of the bowels—about the only pain she had was referred to stomach and bowel. There was nothing about the stools to aid in the diagnosis. During the early part of August it was evident that she would live but a short time, and by the middle of that month the patient had ceased to expect recovery.

Examination of sputum and urine at this time was again negative. She died August 23, having been conscious and clear mentally until about six hours before death. She had twice requested that an autopsy be made after her decease that her physician might know what to do for other like cases, as she expressed it, patient having understood that no positive diagnosis had been made. An exploratory laparotomy was made six hours after death by my colleague, Dr. Elliott, and Dr. G. C. Brown, of Medfield, the family having requested that only the abdominal organs be molested; if a tuberculous condition existed there, it being believed that any involvement of thoracic organs must be secondary, as all the symptoms had been referred to the abdominal viscera. Dr. Elliott's memorandum was as follows: "Liver prolapsed, right lobe reaching down into lumbar region, flattened, elongated and almost of an ox-tongue shape. Liver tissue appeared to be normal, ligaments relaxed and lengthened. A few adhesions were found around left lobe and gallbladder, latter normal. Stomach and intestines were slightly distended with gas and former lower in place than normal, ligaments lengthened. No intestinal lesions found, but only a superficial examination made. The mesentery was everywhere studded with tubercles varying in size from a small pea to bean, many of them having undergone fibrous changes. Glands in lesser omentum and transverse mesocolon were greatly enlarged, many of them caseated, a few were fibrous. In the lesser omentum there was a nodulated mass about the size of a man's open hand. At first the nodules appeared to be closely adherent, but they could be easily separated and most of them had undergone caseation. The spleen was about one-half larger than normal, but showed no gross lesions. Kidneys were normal in size and position and with palpation no pathologic changes could be made out. No fluid was present in abdominal cavity."

By exclusion the pathologic findings had been anticipated, but it was a surprise, and an instructive lesson to know that both kidneys were apparently in normal position, and of normal size, and that what had been taken for an enlarged and displaced kidney or neoplasm by each physician called, including two of the best diagnosticians, was an abnormally shaped right lobe of liver prolapsed, presumably by severe straining during a severe attack of whoopingcough following a long illness with rheumatic (?) fever. It may be well to add that the patient's mother died of a wasting lung disease, presumably pulmonary tuberculosis at about the same age, and a sister of our patient, the eldest of the children, of the same disease at about 18. One sister, five years older, and one brother, three years younger, are in fair health, although the sister has had moderate hemorrhages, apparently from a bronchus, on three different occasions; all subsequent to the menopause—to which, in the absence of any pulmonary symptoms discoverable, a relationship has been credited. Our patient had always been robust, not having been in bed for more than a day or two from illness, except when her one child was born, for 20 or more years. She had had several rheumatic-like attacks, perhaps an average of three such attacks a year, each coming on suddenly, affecting most the muscles about one or the other hip, and uniformly yielding promptly to potassium acetate, freely diluted. During the summer prior to her illness she had several "colds," something so unusual with her as to cause comment, but otherwise she seemed in robust health. Her home was in the country, and the environments all that could be wished for. Her living-rooms and sleeping-room were all large, airy and sunny.

She had not visited or been visited by tuberculous people, did not ride on the train frequently, and not for some years in a sleeping-car. While she was suffering from what seemed subacute rheumatic fever for three months or more, her nutriment was almost wholly uncooked milk, furnished from a large dairy which had not been tested with tuberculin for several years. During our patient's illness, one cow killed from the herd

¹ Read before the Plymouth District Medical Society, October 15, 1902.

which supplied the milk was found to be far advanced in pulmonary tuberculosis, and an ox on the same farm, but not kept in the same barn, was also found to be tuberculous. Whether there was a causal relationship between the nutriment depended on almost solely for a number of months, while patient was in an unfavorable condition to resist pathogenic bacteria, and this case of "tabes mesenterica" might be a question for interesting speculation.

SPECIAL ARTICLES

GLIMPSSES OF THE PRACTICE OF MEDICINE AND DISEASES IN THE WEST INDIES.

BY

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of Chicago.

Recent political events of far reaching significance have awakened our interest in and brought us in closer touch with the beautiful tropical West Indies. Before the war with Spain our nation knew little of the mountain peaks of the lost Atalanta, but since the fortunes of war have placed us in possession of one of these, and destiny gave us an opportunity to liberate another one from foreign rule, our eyes are turned in the direction of these landmarks which divide the great Atlantic Ocean from the blue waters of the Caribbean Sea. The West Indies offer so many inducements for the midwinter tourists and chronic invalids from the North that a brief description of my recent three weeks' tour may interest the many readers of *American Medicine*. It is a strange but pleasing experience to leave icebound Chicago and in less than a week find yourself in a new country, among strange people and surrounded by the luxuriance of a tropical climate. It is on an occasion like this that we are reminded of our school-boy days when we were made to study geography and stock our youthful imaginative minds with the location of distant countries, their people, their climate, products of the soil, manufactories, and workshops. It is a source of great gratification to look at the dizzy height of the gigantic palms, to pick from the shrubby nutmeg tree its aromatic fruit of the color of gold, and from the pepper vine the grape-like clusters of pungent green-yellow berries, and to attack the bark of the cinnamon tree with a pocket-knife to satisfy yourself that you have found the real article remembered so well by many as one of the ingredients of the favorite delicate dishes of childhood days. Spend a short midwinter vacation in the West Indies, as I did, and you will experience the same delight, and will return to your arduous duties, as I did, with pleasant dreams of what the special senses enjoyed and in a better humor to bear the burdens of the daily routine toil. Besides admiring nature's exquisite beauties which only a tropical soil can build and a tropical sun can paint the medical visitor to the West Indies is most interested in the shady side of life in the tropics—tropical diseases. With our present methods of rapid navigation a physician living east of the Rocky Mountains can visit the most interesting and important islands of the West Indies and obtain a fair knowledge of their people, natural resources and prevailing diseases and return in four weeks well satisfied with what he has seen and learned. The trip during which the following observations were made extended from January 15 to February 5, 1903, with New York and the island of Martinique as opposite points. The passengers on the "Kaiserin Maria Theresa," of the North German Lloyd, left New York wrapped in furs and the heaviest overcoats, and many demands were made of the stewards for additional blankets to fight the cold in the chilly staterooms when the shivering passengers retired for the night. This source of discomfort did not last long as the great ship under full steam made a bee line for the equator, evidently anxious to relieve her human freight of the cumbersome winter clothing. On the third day out a general overhauling of the contents of the steamer trunks in search for lighter clothing became the main

occupation of the passengers. Silk and linen took the place of wool and fur, and white and yellow became strong rivals of the sombre black, brown and gray of the wearing apparel, a change from which caps, hats and shoes were not exempt. In a very few days the dome of gray threatening clouds disappeared as by magic, and the lifting of this heavy impenetrable curtain by invisible hands exposed to the unobstructed vision the azure blue boundless sky of the tropics, decorated during the day by the warm sun of the South which approached nearer every day with ever increasing fervor, and by night by the pale crescent-shaped moon and countless luminous stars. Before we were aware of the distance we had traveled land was sighted, and on the morning of January 19 we reached our first destination, the harbor of Charlotte Amalie.

St. Thomas.—This is one of the three islands in the West Indies belonging to Denmark. It is an important coaling station for merchant vessels from the most remote parts of the world. More than half of its small population live in Charlotte Amalie, the seat of the colonial government. A small military force is located here. The principal revenue is derived from the export of bayrum, which is noted for its superior quality and cheapness. The soil is unproductive and the negro population miserably poor. The government officials, the military, and a few business men make up the small body of white inhabitants. Two Danish doctors attend to the needs of the sick. The government is obliged to do what it can for the sick poor.

Kommune Hospitalet.—This hospital can accommodate 115 patients when it is taxed to its utmost capacity. It is arranged in the form of an open square, and consists of one-story barracks divided into small wards for six to eight patients; all of these wards open on the square. On the left at the entrance of the square is the building for men, on the right for women, and in the rear is a one story frame building for the insane. The hospital is furnished in a most primitive way, and the filth appeals both to the eye and nose. We found here the usual variety of diseases which ordinarily prevail here, syphilis, rheumatism, ulcer of leg, bronchitis, endocarditis, and myocarditis, and a number of cases of elephantiasis. Only one of the insane was locked in his room, the remaining patients were either in their open rooms or wandering about in the yard. I was interested to ascertain who was responsible for the filthy condition of the institution. After a somewhat prolonged search we found the female nurse who had charge of the patients who belonged to her sex. She was a colored woman of doubtful age, clad in a dirty calico dress, her dusky face made more so under the shadow of a large straw hat with drooping broad rim that evidently had done service for many a season. To the inquiry where she had received her training, she made no direct reply. The only argument she made as to her proficiency as a nurse was that she was the mother of seven children and thought that that kind of practical training ought to suffice to prepare her for her vocation in life. With this kind of training she entered the institution 17 years ago and has held her place ever since. She was particularly anxious to impress upon us the wonderful results of her extensive obstetric work. The convalescent women give her assistance in the performance of the more arduous and menial part of her work. The nursing on the opposite side of the square made no better showing. A negro, who looked like an ordinary day laborer, served in the same capacity here. A vest that once was white and a clumsy pair of cowhide shoes distinguished him from his subordinates, so far as external appearances were concerned. The doctor who is in charge of this hospital is said to be a very busy man, but he never fails to take his siesta between high noon and 3 p.m., a time he claims for himself, and during which when called upon he sends his compliments by a dark-skinned *bonne* of the island, that is if she can muster enough courage to disturb her master's nap by conveying a message to him during that time of the day. The poverty of the island may offer a partial excuse for the way in which this hospital is conducted, but it is high time that the general government, so long as it persists in holding it as a colony, should look into this part of the management of its black subjects.

St. Kitts, a small speck in the mighty ocean, is one of the numberless colonies of England, as well as one of its oldest. It.

is reached from St. Thomas in a few hours by steamer. It does not take long for the visitor to learn that he is on British soil. English is the language of this island. The native policemen are splendid specimens of the colored race, well uniformed and disciplined, clean, courteous, and faithful in the execution of their duties. The clean streets and splendid country roads are a good evidence of a modern progressive government. St. Kitts has a population of about 30,000, of which the negroes furnish the bulk. Basse Terre is the only city of any size. It is the seat of the local government and important charitable institutions. Like nearly all of the West Indies, the interior of the island is mountainous. Our country is represented here by Consul Dr. Haven, a graduate of Rush Medical College, who practised his profession for many years with great success in Chicago, and who accepted his present position to recuperate his health by a change of climate. To him we are indebted for many courtesies.

Lazaretto or Leper Asylum.—Leprosy is found in all of the West Indies, but is quite prevalent in St. Kitts. The Lazaretto is located on a high elevation by the seashore and near the



Acute exfoliative dermatitis (St. John's).

base of Brimstone Hill, with the remains of an old fortification upon it, which was abandoned 36 years ago. The Lazaretto is connected with the city by a magnificent macadamized road which follows the seashore and passes through a number of quaint negro villages, the landmarks of former large sugar plantations. The asylum buildings are well adapted for the purpose for which they were intended. An open space between them has been transformed into a charming flower garden, intersected by beautiful gravel walks. A tract of several acres of land belongs to the institution, but the soil is so poor that nothing has been done in the way of cultivating it. The colony was founded 10 years ago, and has been managed ever since by Dr. John Foreman, who takes a deep interest in its welfare. Absolute segregation does not exist in any of the islands. In St. Kitts and the rest of the West Indian British colonies ample provision is made for the indigent lepers. The law requires that lepers should not pursue any vocation which would be likely to spread the disease, such as the hand-

ling of foodstuff and clothing. If a leper is found begging or engaged in a business or trade calculated to disseminate the disease he is arrested, convicted and sent to the asylum for treatment and isolation. At present there are 72 lepers in the Lazaretto, the youngest a little boy of 6. The macular and tuberculous variety are about equally represented, as well as the sexes. All of the patients are negroes, with the exception of two Portuguese women. The treatment is palliative and symptomatic.

Cunningham Hospital.—This is the government hospital of the city of St. Kitts and commemorates the name of a former Governor of the island. It has a capacity for about 100 patients. The buildings are two-story barracks, the lower of solid masonry, the upper of wood. The wards are well lighted and plainly but comfortably furnished. Dr. W. J. Branch is the medical officer in charge. He is assisted by two graduate colored pharmacists. I found here two cases of amputation of the leg for elephantiasis, the operation having been made necessary by extensive ulceration. The patients were doing well, but the wounds failed to heal by primary intention. The colored female nurses under the direction of a trained English nurse take care of the sick, and the general cleanliness which prevailed here spoke well for their efficiency and industry.

St. Johns.—We landed at Antigua, St. Johns, January 21, and lost no time in looking up the medical aspects of the island city. A visit to the ancient cathedral reminded us that the public is sometimes appreciative of the services of physicians after they have completed their unselfish career and have gone to their reward. On a marble tablet on the wall on the right side of the main entrance I found the following inscription:

To
The Memory of
Robert Peddie,
Surgeon,
Native of Kelso in Roxburghshire, N. B.,
Who died in this island
On the XVI of November, A.D. MDCCXXLI,
At the age of XLI years.
This Tablet
Is consecrated by the sympathies of
A few of his friends.
In life they esteemed him
As well for
His faithful discharge of his duties
As a member of the Legislature
As for
Exemplary conduct in all the Relations
Of Professional and Domestic Intercourse.
And now that he is departed,
They desire to record their feelings
Of sorrow and respect
That these may not pass away with
Their own fleeting existence.

The wording of the above tribute reflects the feelings of esteem and veneration for the life work of an exemplary member of the medical profession.

St. Johns has been impoverished since the depression of the sugar-cane industry. The streets of Antigua, the capital, are thronged with beggars who are noted for their aggressiveness when visitors make their appearance. Outstretched black hands and the plaintive "give me a penny" constantly menace the peace of mind of the stranger on the streets. If the hungry crowd becomes too large it is sometimes necessary to look for a policeman for relief or enter or seek peace and rest in some public establishment. Malaria is quite common in St. Johns. On the other hand, typhoid is quite rare.

Vaccination is enforced by the Board of Health, consequently the mass of the people is protected against smallpox. The entire population is saturated with syphilis. The disease has existed for such a long time, and is so common, that it has lost much of its virulence. Some idea may be formed of the prevalence of this scourge of the colored race from the fact that 150 pounds of potassium iodid are consumed in the hospital annually. Tuberculosis here, like elsewhere in the West Indies, has a firm hold on the black race. The insane asylum

is located on an island in the harbor, formerly a strong fortification. The leper colony is located on a high ridge overlooking the harbor, and numbers at the present time 40 inmates, all colored.

Holderton Hospital.—This is the only hospital on the island, and can accommodate 200 patients. It bears the name of a deceased rector of the ancient cathedral. It is in charge of Dr. Frederick L. Norris, a young and most capable physician. The wards are airy, neat and fairly well furnished. The buildings occupy the eminence of a hill behind the city, and the ample grounds are well laid out and ornamented with tropical trees, shrubs and flowering plants. From here a beautiful view of the city and harbor, as well as distant mountains, can be obtained.

Elephantiasis in St. Johns.—The visitor need not go to the hospital to see this disease, it is constantly seen in all its stages in the streets. The bare legs displayed by men, women and children make it possible to study this disease in the streets any time of the day. Through the courtesy of Dr. Norris I had an opportunity to examine 72 cases of elephantiasis, 20 in the hospital and 52 in the poorhouse. Among this number were two cases of scrotal elephantiasis. In one of them a negro, aged about 30, the disease involved first the right leg, and two years ago it extended to the scrotum, which at the present time has reached the size of the head of an adult and is complicated by enormous enlargement of the penis. In the second case, an old negro, the disease was limited to the scrotum and had reached about the same dimensions. In the poorhouse, 50% of the inmates were disabled by this disease. Dr. Norris is averse to operative interference in such cases, as the disease as a rule has impaired the general health of the patients to an extent as to interfere seriously with the satisfactory healing of wounds and subsequent restoration of the general health of the patient. The vulva is very seldom affected by this disease, otherwise women are as susceptible to it as men. The nursing here, like in all the British possessions of the West Indies, is in charge of a graduate English nurse, who at the same time serves as matron. Colored girls of desirable age enter the hospital and without any special instruction or training begin their work. They become very useful hospital servants but lack the high qualifications of our nurses. They receive from four to eight dollars a month for their services, according to the degree of efficiency and experience in their work. The poorhouse and prison are near the hospital, the former on the same grounds.

An Innocent Prisoner.—Under the guidance of the prison captain and Dr. Norris we visited the prison. The prisons in all English colonies are models of their kind, and the Antigua prison proved no exception. The discipline is perfect, and the prisoners are made to pay the penalty of their offense against the law by hard manual labor that requires no skill, principally crushing stone. In one part of the prison rough coffins are made for the burial of the poor. The execution chamber in the prison building has been idle for more than two years, but the machinery for hanging is kept in good repair. Corporal punishment is only resorted to in the most obstinate and refractory cases, and consists usually in the use of the lash or four hours in the treadmill. The women contingent is larger here than in most prisons. Washing is their principal employment. In the female department we found a coal-black baby boy only a few days old curled up on a floor-mat on the stone floor. This little convict was certainly incarcerated without any cause for which he could be held legally responsible. His mother was serving her sentence for a petty offense, and before her time expired one more inmate was added to the prison roll. This instance illustrates well that the innocent have often to suffer the crimes of the guilty. May this infant prisoner never know where he was born!

Hospitals of the West Indies as Postgraduate Institutions for the Study of Tropical Diseases.—It is a great pity that the medical officers of the hospitals of the West Indies have neither the time nor the appliances for the scientific investigation of the many as yet obscure tropical diseases they are called upon to treat. The material is simply enormous, and could be readily made available by our young graduates in medicine and by prospective health officers. These are the places to which the attention of our foremost medical schools should be directed.

Some of the scholarships should be devoted to the study of tropical diseases in these colonies. I am sure every hospital would throw open its doors widely to students, provided the investigations would be made without increasing the financial outlay. I became so deeply impressed with the great opportunities that I determined to use all my influence to have Rush Medical College take an initiative step in this direction, with the hope that other institutions would follow the example, so that in a few years a competent bacteriologist might be found in all of the hospitals. There is no better place for the study of elephantiasis than St. John's; St. Vincent, for ankylostoma duodenalis, and St. Kitts for leprosy, and all of these islands for acute and chronic intestinal diseases.

Martinique.—This island, under French rule, was the principal objective point of my short midwinter vacation. It is the most picturesque of all the West Indies, and the most widely known since the last eruption of Mount Pelée, which completely destroyed St. Pierre and nearly one-third of the entire population of the island. This island was discovered by Columbus, June 15, 1502. He landed at Corbet, near the present ruins of the ill-fated city, St. Pierre.

Fort de France is the capital of Martinique and has at present a population of nearly 40,000. Very few of the original race, the Caribs, remain. Like all primitive peoples they have disappeared by the ravages of the diseases brought to their beautiful island by the invaders. They struggled long and fiercely for their rightful possession but finally had to yield to the inevitable. The negroes have increased to an alarming extent, and since the sugar industry has been waning the government is seriously taxed in taking care of the poor. The city is well drained and lighted and has excellent streets. The whites are few and by no means in a cheerful mood owing to financial reverses which have occurred in the past and which are in store for them in the future. Most of the houses show indications of decay and very few buildings are in process of erection. The hotels are primitive and the table still more so. Meat is poor and scarce. Fish is plentiful and in great variety, but cannot compare in quality with those of our northern waters. The negroes subsist largely on bread fruit, guavas, mangoes, cocoanuts, bananas, plantains and other cheap tropical fruits. A small military force occupies the garrison. The policemen are negroes under command of French officers. The prevailing language is French, which by the lower class of people has been changed into a patois unintelligible to the Parisian. The military hospital is an elegant red brick structure, well equipped, a credit to the military branch of the government.

Hôpital Civil.—This is the general hospital, open to the sick from the entire island. It is situated outside of the city limits on a mountain side several hundred feet above the level of the sea. It was built five years ago at great expense and has room for 250 patients. The ample grounds are artistically laid out and beautified in a way only possible in a tropical country. Pure water is supplied from mountain springs in abundance and all of the buildings are lighted by electricity. Seven two-story pavilions face the valley in a straight line, all of these connected by excellent sidewalks. The lower stories are made of solid stone walls, the upper of wood painted white. The red roofs of tiling furnish a pleasing contrast with the exquisite verdure of the mountain side behind and snowy whiteness of the walls beneath. The nursing is in charge of nine Sisters of Charity, which in itself would account satisfactorily for the scrupulous cleanliness inside and outside of the buildings. The operating-room is a separate frame building octagonal in shape. The instrument supply is a very limited one, which means that no unnecessary operations are performed. I found here again many cases of elephantiasis; the affected leg of one of the patients must have weighed at least 75 pounds. The enormous weight of the limb required much effort on the part of the patient when he attempted to walk. Dr. Bouvier is the medical director. He is assisted by a resident interne.

The Ruins of St. Pierre.—The former city of St. Pierre, now in ruins, is by the coast line 20 miles distant from Fort de France. Before its destruction by the volcanic eruption of Mount Pelée it was a thriving city of about 36,000 inhabitants. Mount Pelée is 4,500 feet high, and separated from the ruins by a low

mountain ridge and a small river. The destruction of the city was as sudden as it was complete. The terrible catastrophe occurred at 5.30 a. m., May 8, 1902. The eruption was in reality an explosion of the most terrible kind. Before the explosion the water from the little lake which occupied the basin of the extinct crater disappeared. It is claimed that the entrance of such a large volume of water into the subterranean furnace was the principal cause of the explosion; at any rate it is certain that the hydrogen gas which escaped when the explosion occurred filled the entire valley occupied by the city, ignited and destroyed everything living and ignitable within reach. The explosion tore open the mountain below the crater on the side of the city and the gas escaped with such tremendous force that the largest trees were uprooted and the most substantial buildings torn down. The positions of the prostrate trees and the torn down walls are everywhere the same—away from the mountain. The death of the people and the destruction of the city came with an awful suddenness. In less than five minutes the furious mountain had accomplished its deadly work. Not a house remains, and of the nearly 40,000 people only one was saved. What was formerly the rival of Fort de France is wiped out of existence. The recent ruins present today an awe-inspiring picture. Many of the houses are leveled to the ground. The stately churches are mere piles of brick and stone. The giants of the forests, charred and mangled, obstruct the vacant streets. All signs of animal life have disappeared. The ruins are really a great cemetery in which more than 30,000 bodies remain. More than 6,000 bodies have been found, and were either buried or cremated; the others are buried underneath the debris of the ruins and a layer of lava mud of varying thicknesses. It is said that no man is so wicked as to be entirely devoid of virtue. The same may be said of Mount Pelée. What she did in a rage of anger she did quickly. Probably not a single one of the victims suffered the pangs of death for more than five minutes. The deadly gases, the burning atmosphere and the force of the explosion killed almost instantly every living thing within reach. Then the volcano undertook the task of the undertaker by throwing out a rain of soft mud until most of the corpses were out of sight. The former city is now a deserted ruin. Not a soul lives there. At the time of our visit a number of negro women were picking up tiles along the beach. A few negroes were busy here and there with picks and spades in search for buried treasures and relics of the disaster. Bones and whole skeletons are being uncovered daily by the drenching rains washing away the thin layer of mud under which at first they were buried. Not a roof remains, and many of the narrow streets are completely obstructed by the debris of the ruins and the volcanic mud. St. Pierre will live in history, but will never be rebuilt on its present site. On the day of our visit the summit of Mount Pelée was wrapped in mourning, but through the dense veil of clouds ascending columns of steam could be seen, a warning that the volcano so far has refused to rest. The next day an explosion blew off the top of the mountain. The force of the explosion and the fire which destroyed the city extended far beyond the limits of the city. In the direction of the explosion not a single living tree could be seen. It was in the neighborhood of the destroyed city, near the limits of the sea of fire, that many people were injured and suffered from more or less extensive burns. Of these, 250 were sent to the Civil Hospital at Fort de France. I had an opportunity to examine a few of these patients that remained at the time of my visit, recovering slowly from the effects of burns.

A Miraculous Escape.—Only one of the inhabitants of St. Pierre escaped. He was a prisoner, and was not discovered in his prison cell until four days after the disaster. All the remaining prisoners were killed. The prisoner who found his freedom in such a miraculous way is a negro aged about 35. He has suddenly risen in distinction. He is now a successful beggar in Fort de France. I met him in a little cigar store and was successfully appealed to for a small contribution, in consideration of which he willingly exhibited large scars over the left shoulder and saine side of chest, following the healing of an extensive burn. Later he came on board the ship for exhibition and realized \$20, probably more money than he ever handled before.

St. Vincent.—This little island possession of England has come into notoriety by the volcanic eruption of its highest volcanic mountain (3,000 feet), La Soufrière, which became active at the same time with the distant Mount Pelée. Two thousand lives were lost and a whole village destroyed. Ashes were blown as far as Barbados, over 100 miles away. Kingstown is the capital city. It has 9,000 inhabitants, with few exceptions negroes. The botanical garden is one of the finest in the world. It was established in 1764, the first in the West Indies. The visitor will find here the greatest variety of palm trees, indigenous and from foreign tropical countries, cacao, cinnamon and nutmeg trees, and the pepper vine.

Colonial Hospital.—This is the principal hospital of the island and has room for 80 patients. The grounds upon which the hospital is built present a truly tropical appearance. The towering gigantic palms, flowering shrubs and ferns, make a most attractive foreground. Like all of the West Indian hospitals it is built on the barrack plan. The pavilions are two stories high, the lower of stone, the upper of wood. The upper story projects about eight feet beyond the lower. The furniture is of the plainest kind but answers all of the existing requirements. The wards are kept clean and in excellent order. An English trained nurse is the matron and supervises the work of the colored nurses. Dr. C. W. Brauch is the attending physician. He is a graduate of Edinburgh and is an earnest, enthusiastic and progressive man. He and another physician take care of all the sick in the city and surrounding country.

Ankylostoma Duodenalis in St. Vincent.—Uncinariasis (Ankylostomiasis) is very common in all the West Indies, but particularly so in St. Vincent. Dr. Brauch believes that at least one-third of the entire population is affected by this disease. The principal symptom is a gradually increasing anemia. Ultimately fatty degeneration of the liver invariably takes place. During the early stages of the parasitic invasion the disease is often overlooked. Careful examination of the stools must be relied upon in making a positive diagnosis. In one year Dr. Brauch treated 120 patients. His treatment consists in the administration of large doses of thymol. To an adult he never administers less than 8 grams (120 grains) of the drug divided in four equal parts, which are administered in capsules one hour apart, beginning early in the morning. In the evening following castor-oil is given in sufficiently large doses to produce free catharsis. The reputation of thymol in the treatment of this disease has been well established, not only here but in many other hospitals in the tropics. Sometimes the treatment has to be repeated. Toxic symptoms are not often observed, but should they appear speedy elimination of the thymol by early and free catharsis will soon relieve the unpleasant symptoms.

KINGSTOWN, ST. VINCENT, January 24, 1903.

[To be continued.]

The Fashions in Invalids' Dinners.—San Francisco, it appears, has a festively buoyant disposition and a vigorous Western hardness of physical sensibility which can bear up under all conditions. An appendicitis dinner, in which the board was decorated with a miniature equipped operating table, surgical instruments, hot water bags, and wax dolls, representing patient and surgeon, was given by a resident of that city, who had successfully passed through the operation, to 20 companions similarly fortunate. The usual floral embellishments served to soften an impression that might have been destructive of those feelings necessary to secure the enjoyment of a banquet, and there was no shadow of sudden indisposition, as might have been expected. The feast went on, hot water bags, surgical instruments, and all. This suggests an entirely novel form of social entertainment, which has never been exploited. Persons run down by trolley cars, who may have had the mumps, or the grippe, or escaped from the hands of a dentist, may find by that tie of misery that binds those in similar unfortunate circumstances a motive for festal reunion. There might be vaccination parties, rheumatism afternoons, neuralgia teas, influenza smokers, freckle seances, and progressive union euchres. A chiropodist reception, to be followed by a dinner dance, or a dyspepsia "small and early," with skim milk and pepsin tablets, served promptly on arrival. Conversation need never languish at these attractive functions, for people who are dumb on every other human topic can always talk about their physical infirmities with an astounding opulence of language.—[*St. Louis Globe-Democrat.*]

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

March 21, 1903. [Vol. XL, No. 12.]

1. Observations on the Mechanics of Digestion. WALTER BRADFORD CANNON.
2. The Clinical Manifestations of Hydrophobia. D. J. MCCARTHY and M. P. RAVENEL.
3. The Plantar Reflex in Epilepsy, with Special Reference to the Babinski Phenomenon. J. M. KENISTON.
4. Remarks Concerning the Management and Treatment of Rhinopharyngeal Tonsils by the General Practitioner. ROBERT C. MYLES.
5. The Degenerate Tonsil. EDWIN PYNCHON.
6. Otitic Brain Abscess: Report of Two Cases; Aphasia in One, Recovery. GEORGE F. KEIPER.
7. The Choice of a General Anesthetic in Nose, Throat, and Ear Operations. THOS. J. GALLAHER.
8. The Giant Magnet in Ophthalmic Surgery: Report of Two Cases; Remarks. LEARTUS CONNOR.
9. Some New and Unusual Therapeutic Applications of Ergot. ALFRED T. LIVINGSTON.

1.—See *American Medicine*, Vol. III, No. 25, p. 1063.2.—See *American Medicine*, Vol. III, No. 25, p. 1062.3.—See *American Medicine*, Vol. III, No. 24, p. 991.4.—See *American Medicine*, Vol. III, No. 11, p. 418.5.—See *American Medicine*, Vol. III, No. 25, p. 1059.

6.—**Otitic Brain Abscess.**—G. F. Keiper reports two cases, following Bashan's plan of describing the aphasia in one, with a brief review of the varieties of the latter, and its relation to ear disease. To prevent mastoiditis every case of otitis media should be carefully treated. In doubtful cases exploratory operation is justifiable. [H.M.]

7.—**Anesthetics in Nose, Throat, and Ear Operations.**

—T. J. Gallaher recommends ether in prolonged operations, as mastoid, middle ear operations, etc., and nitrous oxide in those not requiring over a minute of anesthesia. He uses it frequently in tonsillotomy, incising the ear drum, and perforating the antrum. The most convenient and apparently as safe as any of the other anesthetics is bromid of ethyl. It should not be used in prolonged administration. From 1 to 4 drams is required, according to age, the whole quantity being thrown on an inhaler or towel and placed over mouth and nose, air being admitted only in threatening asphyxiation. This should not be confused with bromid of ethylene, which is highly poisonous. Gallaher operates with the pharynx on a lower level than the larynx, to prevent blood or severed growths entering the latter. When the upright position is necessary he prefers bromid of ethyl as the anesthetic, second choice being nitrous oxid. [H.M.]

8.—**The Giant Magnet in Ophthalmic Surgery.**—L. Connor reports two cases of foreign body in the vitreous, in each of which enucleation would have been imperative without the aid of the magnet. Experimental and clinical work show that at contact and up to 2 mm. the power of the small magnet equals or surpasses the giant, but from this to 10 mm. the power of the giant increases in almost geometric ratio. This demonstrates the need of the giant for splinters in the vitreous. The farther from the splinter the magnet can be used the more uniform, less jerky its action. Either the eye should be brought close to the magnet point and the current increased slowly or the eye should be brought up slowly from a considerable distance. The limitations of the giant magnet are exhibited when there is firm fixation in the posterior wall of the eye or in the ciliary body, or in a fibrinous exudate or when the splinter has healed over in the lapse of months. [H.M.]

9.—**Ergot.**—A. T. Livingston recommends ergot in the hyperemia of the brain found in insanity, especially in the melancholic class. He reports a case illustrating its use in vomiting and nervous excitement due to cerebral engorgement. Ergot acts on dilated vessels wherever they may be, producing general equilibrium of the circulation. It has ten thousand applications. It is not only the most effective agent in insomnia, but causes the most natural sleep. It is indicated in headaches, which are congestive in the majority of instances. Even an anemic headache might be benefited, as it might be due to hyperemic conditions elsewhere. He has found it beneficial in iritis, retinitis and optic atrophy, and suggests its use in glaucoma. He has had marked results in chronic deafness. He reports instances of relief from pain,

acute morphin poisoning, and appendicitis. He has used it with success in chronic morphinism and alcoholism; also in spasmodic conditions, such as asthma, puerperal eclampsia, hysteroepilepsy, and chorea. He has had brilliant results in bulbar paralysis, general paresis, etc. He has also repeatedly demonstrated its value in meningitis, pneumonia, peritonitis, erysipelas and other acute inflammations, and recommends it in typhoid, angina pectoris and other heart affections. He advises a course of ergot preliminary to operation. It prevents the objectionable sequels of anesthesia, such as vomiting, delirium, etc., and modifies shock and pain. He uses it altogether hypodermically, recommending Squibb's solid extract dissolved in a solution of formalin 1 to 3,000 and slowly injected. [H.M.]

Boston Medical and Surgical Journal.

March 19, 1903. [Vol. CXLVIII, No. 12.]

1. An Account of Dr. Thaddeus Maccarty, a New England Country Doctor of Prerevolutionary Days. BURNSIDE FOSTER.
2. Lipoma Arborescens. CHARLES F. PAINTER and WILLIAM G. ERVING.
3. Suppuration of the Frontal, Ethmoid and Sphenoid Sinuses: With Brief Report of the Treatment of 237 Cases. EDGAR M. HOLMES.

2.—**Lipoma Arborescens.**—C. F. Painter and W. G. Erving report seven cases. The presence of these fatty growths in the joints—most frequently the knee—has been usually attributed to tuberculosis and arthritis deformans. The authors believe these diseases are responsible for fewer cases than has been supposed. In none of the reported cases was a tuberculous process found. This is important from the standpoint of surgical treatment, for without the presence of tuberculosis the fatty bodies are only a mechanical impediment in the joint, and no erosion or resection is indicated. The clinical picture presented is that of a more or less swollen joint, without signs of acute inflammation and most commonly without excess of fluid. The patient complains of imperfect function, usually without pain. The joint sometimes "locks" in a partially flexed position, and can be straightened only after considerable effort. The lipomas vary greatly in size, reaching often that of a good-sized hen's egg. They are attached to the synovial membrane by a pedicle, usually slender, which on cross section is found to consist almost wholly of bloodvessels lying in a mass of small round cells. In consistency they vary from a soft, fatty to a tough, fibrous condition, both varieties often found in the same specimen, while the color varies from a yellowish-gray to a dark purplish-red. [A.B.C.]

Medical Record.

March 21, 1903. [Vol. 63, No. 12.]

1. The Present Status of the X-ray Treatment of Malignant Tumors. WILLIAM B. COLEY.
2. Sigmoidproctectomy for Cancer of the Rectum. GEORGE W. ROBERTS.
3. A Case of Adenoids with Malaria. WALTER F. CHAPPELL.

1.—See *American Medicine*, Vol. III, No. 24, p. 997.2.—**Sigmoidproctectomy for Cancer of the Rectum.**

—G. W. Roberts insists that operations heretofore for cancer of the rectum or sigmoid have been bungling and imperfect. He advocates laparotomy, packing away the intestines, securing the sigmoid far above the growth and cutting the same between firmly clamping wires. To establish an artificial anus carry the proximal end of the divided gut through the abdominal wall internal to the left anterior superior spine, after the Sbanajew-Franke method of gastrostomy. Now grasp the distal end and dissect the same free deep into the true pelvis, carefully removing all the sacral and other contiguous glands. If a woman complete the operation by splitting the posterior vaginal wall and completing the dissection of the rectum and anus, together with related glands, and removing the same in toto. In the male the rectum is approached from behind, removing the coccyx if necessary, and the entire rectum and anus removed, special stress being laid on the thorough and complete removal of the sacral glands. Three cases are reported operated upon after this method, one patient dying. He considers the prevailing method of operating for rectal cancer analogous to the old-time imperfect operations for cancer of the breast. [A.B.C.]

3.—Adenoids and Malaria.—W. F. Chappell reports removing adenoid vegetations from the nosopharynx of a child of five months. General improvement was noted for ten days when fever and general constitutional disturbances were noted. The temperature oscillated between 100° F. and 105° F. for several days before a pyogenic infection was excluded. Malaria was suspected and a blood examination amply confirmed the suspicion, the plasmodia being found in abundance. Quinin bisulfate was administered and gradually increased to 1.3 gms. (20 grains) daily before the temperature finally showed that the malarial parasites were under control. The total amount of the drug given in 27 days was 16 gms. (241 grains). A careful history taken showed the first mosquito bite to have been 10 days before the first symptoms of malaria, thus fixing fairly accurately the incubation period of the parasite. Of 30 mosquitos obtained from the same locality three were of the malarial bearing variety. [A.B.C.]

New York Medical Journal.

March 21, 1903. [Vol. LXXVII, No. 11.]

1. Some of the Complications of Abdominal Surgery. ROBERT T. MORRIS.
2. The Diagnosis and Treatment of Hereditary Syphilis. E. HARRISON GRIFFIN.
3. Some Observations on Tuberculosis. J. O. COBB.
4. Report of a Case of Inguinal Hernia with Incomplete Sac. J. SHELTON HORSLEY.
5. Transportation and the Ophthalmic Referee. JUSTIN L. BARNES.

1.—Complications of Abdominal Surgery.—Robert T. Morris in discussing these complications says that the gastritis resulting from ether anesthesia may be modified by keeping a considerable amount of fluid in the stomach and that this result is best obtained by giving the patient small quantities of hot water at frequent intervals after an abdominal operation. If the vomiting is severe relief may be obtained by washing out the stomach freely with warm water. In the kidneys a preexisting nephritis is often excited to a point of exacerbation and primary nephritis may be caused by prolonged ether anesthesia. The prognosis of the after effects is not very different from the prognosis of a similar nephritis caused by cold. Some cases of nephritis caused by excretion of toxins from an acute infective process in the abdominal cavity will cease instantly in many cases after ether anesthesia, provided the focus of infection has been rendered inactive by the operation. Morris believes that iodoform is particularly dangerous when used in the peritoneal cavity because of the absorptive powers of the peritoneum. He says iodoform poisoning is commonly mistaken for septicemia. In iodoform poisoning the wound looks well while the patient does not and free iodine is found in the urine. In hemorrhage occurring after abdominal operations the prognosis is not so grave if the blood remains within the peritoneal cavity as when it escapes externally because it is still in circulation in a way owing to the action of the lymphatics. [C.A.O.]

2.—Hereditary Syphilis.—E. H. Griffin reports several cases of hereditary syphilis in which a wrong diagnosis had been made and in which recovery followed antisyphilitic treatment. In five of these cases the diagnosis of tuberculosis had been made. Griffin says the reason these cases are not diagnosed properly is that Hutchinson's teeth are looked for in every case, and if they are not found, hereditary syphilis is excluded. These teeth are only present in 10% or 15% of the cases; also that these diseases are very seldom touched on in a medical college; and the buccal cavity is not given the prominence it deserves in medical teaching. [C.A.O.]

4.—Hernia with Incomplete Sac.—Such a case is reported by J. S. Horsley in a man of 38 who had had a left inguinal hernia for more than 12 years that was incompletely controlled by a truss. Upon reaching the cord it was noticed that what appeared to be the sac was on the outer side exceedingly thick and was found to be a portion of the wall of the descending colon. A portion of this intestine without any omentum constituted the hernia. On the inner side it was almost normal to inspection and palpation. The explanation given is that the patient being stout, the parietal peritoneum was more loosely attached than it would be on a thinner individual. The lower part of the descending colon evidently burrowed under the

peritoneum at that portion of the gut where it is devoid of serous covering. Having thus formed a pocket, it continued to work its way down to the internal inguinal ring, dragging the peritoneum along with it, forming a sort of funnel. [C.A.O.]

5.—Railway Ophthalmic Referees.—In order to learn the methods of testing the sight, color-sense, and hearing of operating employes J. L. Barnes has been in active correspondence with 50 leading railway companies of the United States and Canada, submitting to them a form of questions. Of the 50 companies addressed, full replies were received from 32; and of these 21 stated that they retain a medical expert (ophthalmologist) for ensuring accurate examination of sight, color-sense, and hearing, while the remaining one-third confess that they do not make use of such advice, but either resort to examinations by officials of their own lay bodies or are "contemplating the idea of examinations." Most of the companies which do not retain a consulting medical expert referee are among the older and eastern companies. The author heartily indorses the recommendation adopted by the American Ophthalmologic Society on Standards and Methods of Examining the Acuteness of Vision, Color-sense and Hearing for Railway and Marine Service: "That a trained ophthalmic surgeon be selected by each company who shall instruct and examine the man selected by the company to make these tests, shall recommend the standards and methods to be used, shall see that the equipment furnished to such examiner is sufficient, that it is kept in proper order and renewed when necessary, and who shall be the authority to whom doubtful cases shall be referred for final adjustment." He demonstrates the importance of this recommendation by commenting upon the usual methods now in force, especially among those transporting lines which rely upon lay examinations and judgment. [C.A.O.]

Medical News.

March 21, 1903. [Vol. 82, No. 12.]

1. Some Types of Retinitis and Chorioretinitis. ALEXANDER DUANE.
2. The Indications for Operative Interference in Intracranial Tension. FREDERIC S. DENNIS.
3. A Preliminary Report on the Venous Hum in Relation to the State of the Blood. C. N. B. CAMAC.
4. Some Physiological Observations on a Crustacean Heart. GEORGE V. N. DEARBORN.
5. Pneumonia: An Infectious Disease. J. O. COBB.
6. Observations on American Climates and Localities in the Treatment of Pulmonary Tuberculosis. JAMES K. CROOK.

1.—Types of Retinitis and Choroiditis.—A. Duane reports several cases of focal exudative chorioretinitis. These are distinguished by their acute onset, rapid course, and on the whole favorable prognosis. They occur especially in young people, and often without assignable cause. They are marked by the presence of a single circumscribed exudate, situated usually not far from the optic disc, forming a whitish mass, which may be either prominent and pointed or low and flattened, and which is often associated with considerable edema and milkiness of the surrounding retina, but not often with much engorgement of the papillary vessels or much swelling of the nerve. Impairment of vision depends on the site. Scotoma frequently remains. The salicylates, calomel, and rest in bed seem the best treatment. [H.M.]

2.—Operative Interference in Intracranial Tension.—Frederic S. Dennis, after an exhaustive and somewhat technical discussion, concludes substantially as follows: Cases of intracranial tension can be divided into two classes as regards operative interference. The first includes those in which intracranial tension is sufficient to produce profound coma. The second includes those in which the intracranial tension is not sufficient to produce profound coma. Operation will save cases included in the first class that uniformly died under the expectant plan of treatment. Operation will save cases embraced in the second class when the symptoms are gradually increased in severity. In those cases included in the second class in which coma is not present, the problem is difficult of solution. The author has been guided as to the operation by the condition of the patient from hour to hour and from day to day. If the arterial pressure rises to a point and remains stationary, and the vasomotor system does not fail, even with a well pronounced vagi disturbance, no operative procedure was practised, and

recovery has taken place. In addition to the symptom of increase of arterial pressure the blood count must be studied, the eye grounds examined, the urine tested, the reflexes studied, the disturbances of the cranial nerves noted, and all other phenomena investigated. If the pressure is not daily increasing and the leukocytosis not rising, the red blood cells not increasing, and the urine not becoming glycosuric, the hebétude not emerging into coma, and the cephalalgia not increasing, delay in operative interference is indicated. Otherwise operation is indicated. [A.B.C.]

3.—Venous Hum in Relation to the State of the Blood.

—C. N. B. Camac has observed the occurrence of a cervical bruit in persons with normal blood. Anemia may exist without this bruit—33% to 50%; it occurs in some anemias and not in others, and is more frequent in chlorosis than other forms. The most probable cause of the hum is variation in the caliber of the bloodvessels, the tone of the vessels entering into the causation. The practical point to clinicians is that cervical bruit and pallor may not indicate anemia, that the blood should be examined to determine this point. If the vascular tone is faulty cardiovascular stimulants and not iron are faulty. [H.M.]

5.—Pneumonia: An Infectious Disease.—J. O. Cobb

considers the greater prevalence of pneumonia and influenza in cold weather to be due to the greater dosage of contagium, due to the overcrowding and overheating in theaters, cars, and other stuffy places, where the heat is great enough to dessicate the germs planted there by coughing and spitting. In sparsely settled places there is little pneumonia. The deathrate is appalling, and yet nothing is done to check the spitting habit, which seems to be the only cause of its spread. [H.M.]

6.—See *American Medicine*, Vol. V, No. 7, p. 248.

Philadelphia Medical Journal.

March 21, 1903. [Vol. XI, No. 12.]

1. Cryoscopy. D. S. GRIM.
2. Trunccek's Serum, and Its Value in Disturbed Cerebral Functions Caused by Circulatory Changes, With Report of 12 Cases. ALFRED GORDON.
3. The Operative Treatment of Goiter. INGERSOLL OLMSTED.
4. Psychopathic Epidemics. JOHN B. HUBER.
5. A Case of Diabetes Mellitus in a Young Child. JAMES HENDRIE LLOYD.

1.—Cryoscopy.—From the study of a large number of normal urines and over 400 determinations of pathologic urines, D. S. Grim concludes as follows: Cryoscopy cannot replace, but only supplement, the older qualitative tests and microscopic examination of urines; it is probably the most delicate test we possess in detecting and estimating the effect of therapeutic measures directed toward cardiac and renal lesions; it permits of reasonable accuracy in diagnosing renal insufficiency and the type of renal lesion present, though the examinations should be prolonged over a number of days, these conclusions coinciding with Lindemann's; uremia cannot be diagnosed from the examination of the urine alone; cryoscopy of the urine from each kidney, obtained by ureteral catheterization, and especially when supplemented by the phloridzin and methylene-blue tests, becomes very delicate and reliable in determining a unilateral kidney lesion and the degree of insufficiency of the affected kidney. [F.C.H.]

2.—Trunccek's Serum.—A. Gordon gives the results he obtained from the employment of Trunccek's serum in 12 cases and its value in disturbed cerebral functions caused by circulatory changes. Of the 12 cases reported 3 gave negative results and among the 9 successful ones some gave only slight and some considerable improvement. The combination of the inorganic salts known under the name of Trunccek's serum may be a valuable remedy in some cases of disturbed cerebral function caused by circulatory changes; this remedy may give favorable results not only by hypodermic and intravenous administration, but also internally; when the iodids, nitrites, and other means used in such cases are without avail Trunccek's serum should be given a trial, sometimes a combination of both may be necessary; at least a week must elapse before the desirable results can be expected. [F.C.H.]

3.—See *American Medicine*, Vol. IV, No. 15, p. 567.

5.—Diabetes Mellitus in a Young Child.—J. H. Lloyd considers that diabetes mellitus in young children is sufficiently rare to justify the report of an individual case. The special features to be noted in such cases are the obscurity of the symptoms and the possible action of such a cause as trauma, shock or heredity. The one symptom to attract the attention of the mother or nurse is usually the excessive thirst, a thirst which is urgent and often shown in very characteristic ways. The case detailed is that of a white male 26 months old. The specific gravity of the urine was 1,040 and reacted strongly to Fehling's test. The child failed rapidly and died in coma about three weeks after the mother first noticed he was ill. It had been subjected to a surgical operation and had been under ether for nearly an hour about 10 days previous to the onset of the symptoms. Thirty-six cases are quoted from literature of undoubted cases of diabetes mellitus in children under 3 and 6 cases of alimentary glycosuria in children under 3, formerly classified under diabetes mellitus. The essential cause is just as obscure as in cases of adults. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

REVIEW OF LITERATURE

Lumbar Puncture and its Value in Cases of Meningitis.

—Warrington¹ considers at length the technic of lumbar puncture, the characteristics of cerebrospinal fluid, and the following points as determining its abnormal states: (1) Cryoscopy; (2) altered permeability of the meninges; (3) abnormal organic constituents; (4) microorganisms; (5) cytology. Abstracts of three illustrative cases are appended. In Case I, a child of 8 months, the fluid was cloudy and contained flakes of lymph and a considerable number of multinuclear cells, but was sterile. At repeated punctures the fluid became clearer, and multinuclear cells were replaced by lymphocytes. Temporary improvement followed each puncture and recovery ensued. Puncture in Case II, a child of 16 months, gave a turbid fluid with masses of pus. Multinuclear cells predominated and *Diplococcus intracellularis* was present. Autopsy 10 days later revealed purulent meningitis. In Case III, a child of 8 months, the fluid was turbid, contained multinuclear cells and *Staphylococcus albus*. Autopsy revealed purulent meningitis. [A.G.E.]

Acute Circumscribed Edema.—Mendel² reports a case which occurred in a girl of 18. The disease had been present in her family for four generations, and had affected 12 of her relatives, of whom six died. Since early childhood she had suffered from many attacks, the area affected being in different parts of her body, including the eyes and mucous membranes. The edema develops in the course of a few hours, remains an hour or a week and then disappears rapidly with no after effects. It may be brought on by trauma, or it may occur without any known cause. This condition is not influenced by excitement, food, menses, or the seasons. Aspirin was administered, and the swelling which involved her forearm from the finger tips to the elbow, disappeared, the girl remaining well until the drug was stopped, when her trouble returned. Mendel considers this disease a form of gastrointestinal infection and not a neurosis. [W.E.R.]

Primary Tuberculosis of the Spleen Followed by Vegetative Endocarditis.—Ferrand and Rathery³ report this case, which they believe to be the first recorded case of tuberculous endocarditis without pulmonary lesions of the same nature. The tubercle bacillus was found in the endocardial growth and also in the blood clots from the heart. The spleen was the only organ involved, the lungs being absolutely sound. The case is regarded as one of tuberculous septicemia. [A.G.E.]

Enuresis Nocturna and Adenoids.—O. W. Cautorovitch⁴ reports a case of enuresis nocturna in a boy 12 years old. Since the age of 6 the boy regularly wetted his bed in spite of all treatment. His parents were well; he was normally developed, and the genital organs presented nothing to account for the

¹ Pediatrics, February, 1903.

² Berliner klinische Wochenschrift, December 1, 1902.

³ La Médecine Moderne, February 18, 1903.

⁴ Practisches Vratch, October 5, 1902.

incontinence. The sole possible cause was found in the presence of extensive adenoid growths in the nasopharynx. Accordingly these were removed and since the operation the boy does not wet his bed. [L.J.]

Purpura Hæmorrhagica.—Two cases, one terminating in recovery, are reported by R. L. Wadhams and W. B. Foss.¹ The first was a man of 24, in whom the prominent symptom was epistaxis, accompanied by a hemorrhagic eruption. Death occurred on the eighteenth day. The second was a girl of 5, who also had severe epistaxis with cutaneous and mucous extravasations of blood. Two attacks occurred, one in September and one in March, with recovery following each. As treatment ergot was given in large doses. [A.G.E.]

Gastric Digestion in Icteric Conditions.—S. S. Zimnitski² has made a thorough clinical and experimental study of the influence exercised by retention of bile in the system upon the secretions of the stomach. The gastric contents were analyzed in cases of catarrhal jaundice, Weil's disease, Hanot's hypertrophic cirrhosis, and obstructive icterus due to a pancreatic tumor. In all these instances the temperature remained normal, thus simplifying conclusions. The state of gastric secretion in catarrhal icterus was studied with especial thoroughness, as jaundice in this affection develops gradually, reaches a maximum of intensity and then gradually subsides, thus affording an excellent opportunity for observing the phenomena of systemic intoxication in their rise and fall. Whenever jaundice was not complicated with distinct gastric catarrh a condition of high hyperacidity was noted in the stomach contents after a test-breakfast. The hyperacidity was demonstrably due to hypersecretion and experiments on dogs confirmed these clinical observations. In harmony with Parlor's elegant and important researches the author attempts to explain these alterations by postulating a diseased or asthenic state of the secretory cells, due to poisoning with biliary products. Incidentally some interesting facts were noted: The wellknown preference shown by icteric patients, human and animal, for carbohydrates and their aversion to meats and fats could be accounted for by the influence of the latter upon digestion; it was found, namely, that albuminous food retarded the passage of gastric contents into the intestine and produced certain irritative phenomena, like vomiting, diarrhea, etc., while carbohydrates did not alter the secretions and the motor activity. The diet usually prescribed in icterus (milk and carbohydrates) was very well tolerated, thus showing a complete harmony of empirical and experimental data. These results, obtained from a study of acute jaundice, apply with equal force to chronic icteric conditions as seen in hypertrophic hepatic cirrhosis, etc. A gradual transition from gastric hypersecretion to hyposecretion has been noted in protracted jaundice and is due to the same cellular asthenia in its varying grades and stages. When gastric acidity is thus seen to fall the peptic power of the stomach remains unabated, justifying the conclusion that the pepsin-producing activity has a greater stability than the secretion of hydrochloric acid. [L.J.]

Reaction to Mercury Observed in Syphilis.—Herxheimer and Krause³ have observed a peculiar reaction in syphilitic patients which they consider of considerable value from a diagnostic and prognostic standpoint. It occurs only after the first absorption of the mercury; 15 to 24 hours after the first inunction with mercurial ointment (5j) or injection of salicylate of mercury or calomel, the existing eruption changes. The ordinary syphilitic exanthem increases in intensity, the number of lesions increase, and their character changes to an urticarial hive. Many of the papules run together; fever manifests itself in some cases, and occasionally symptoms of general intoxication are observed. There are no subjective symptoms. This violent character disappears within 48 hours, and it is claimed by the authors that the more intense the change the better the prognosis. This reaction is not noticed when mercury is given internally, or after the initial treatments. The reaction was studied by them histologically. They advise the use of this reactive test in doubtful cases of macular eruptions. [E.L.]

GENERAL SURGERY

MARTIN B. TINKER
A. B. CRAIG
C. A. ORR

REVIEW OF LITERATURE

An Atypical Case of Cancer of the Stomach.—Lerch¹ reports a case of gastric cancer masked by hepatic cirrhosis. The patient was a man of 49, a heavy drinker, who also used tobacco in excessive amounts. For four years he had had severe stomach trouble, aggravation of which caused his appearance at the hospital. Vomiting became more frequent and after three weeks rectal feeding had to be substituted. The patient's appetite remained good, his tongue was clean, and no disgust for meat was present. The face presented the venous hue that marks the alcoholic skin, the body was white. A tumor as large as a child's fist, replacing the whole left lobe of the liver, could be detected moving upward and downward with respiration. The abdominal veins were distended. The stomach contents showed traces of hydrochloric, and absence of lactic acid. The diagnosis of gastritis due to liver cirrhosis with entirely cirrhotic tumefied left lobe and contracted kidney was made. The patient died four weeks after admission, and autopsy confirmed the diagnosis in every particular, but revealed also a carcinoma of recent growth almost filling the pyloric orifice. After a detailed review of the symptoms, Lerch states that the case has to be classed with those of latent cancer of the stomach. The tumor was one of rapid growth, originating presumably not more than five weeks before the patient's death. [A.G.E.]

Surgical Treatment of Exophthalmic Goiter: Cocainization of the Superficial Cervical Nerve.—Huntington² reports four cases in which he has operated for exophthalmic goiter by excision of the thyroid gland, with recovery or improvement in all cases. To obtain anesthesia in these cases he used direct injection of cocain solution into the superficial cervical nerve. He devotes some space to a description of the anatomy of this nerve, and advises exposure by incision along the posterior border of the sternomastoid muscle at about the level of the thyroid cartilage. The area of anesthesia obtained by injection of this nerve is triangular, with its apex at the point of injection of the cocain solution, and its base at the median line. The base of the triangle should extend from the suprasternal notch to the lower border of the jaw. Experience has shown, however, that the boundaries of anesthesia are variable because of the overlapping areas supplied by adjacent cutaneous nerves. He finds this method of anesthesia of great value in these cases. [M.B.T.]

Mercurial Treatment of the Grave Complications of Syphilis.—Leredde³ advocates the administration of mercury by injection as the only means we have of insuring to the patient a definite quantity since the therapeutic effect depends on the amount. In visceral lesions quick results are of the gravest importance. In spinal and cerebral lesions it may be a question of hours, and these, like certain cutaneous manifestations, resist inadequate doses. Stomatitis depends on the state of the mucous membrane. Persons with teeth and gums in good condition tolerate a very large dose, therefore hygiene of the mouth is indispensable. Tabes, general paralysis, and other parasyphilitic affections are amenable to mercury if given soon enough and in sufficient doses. [H.M.]

Appendicitis.—Gilbert Darling,⁴ in summing up the considerations which determine the necessity for operation says we should be guided always by the severity of the symptoms present, and ignore the absence of symptoms usually present. If the patient has a rigid abdomen, with a pulse of 120, much stress should be laid on these two facts and the absence of other symptoms ignored, though if the pulse be moderately quick and the temperature not high, yet there is persistent vomiting, the indications point strongly to operative interference. He denominates it as "safe abscess" the condition in which pus has formed in the neighborhood of the appendix and has become circumscribed by adhesions, the abscess wall becoming

¹ New Orleans Medical and Surgical Journal, March, 1903.

² Annals of Surgery, 1903, Vol. xxxvii, p. 9.

³ Medical Press and Circular, October 29, 1902.

⁴ British Medical Journal, January 10, 1903.

¹ Trans. Luzerne Co. Medical Society, 1902.

² Russkl Vrach, January 4, 1903.

³ Deutsche medicinische Wochenschrift, December 11, 1902.

adherent to the abdominal wall. In such case incision and drainage are indicated. The adhesions should not be broken up in an attempt to find the appendix, though if this organ can be found in the abscess cavity without violence, it should, of course be removed. Should the abscess not be adherent to the anterior abdominal wall, it should be packed about with gauze, opened and evacuated. Again, adhesion should not be broken up in attempt to find the appendix. Recurrence, even in such cases when the appendix is not removed, is uncommon. If no abscess has formed, and we find a diseased condition in the abdominal cavity—seropurulent fluid or thick pus lying among the intestines and omentum—it must not be inferred that there is a general peritonitis. In a considerable number of cases the pus, though not bounded by such adhesions as would warrant the term "abscess" is yet not distributed all over the abdomen. In this condition, as in the case of widespread peritonitis, a second incision in the middle line of the abdomen for irrigation may be necessary. [A.B.C.]

Gaseous Subphrenic Abscess Due to Perforated Gastric Ulcer.—Macaigne and Souligoux¹ report two cases. The one, in a woman of 46, was on the right side between the liver and diaphragm. No operation was performed and the woman died. The communication with the stomach was patulous and the passage of pus through it gave rise to an intractable diarrhea. The second case was in a man of 50, and operation was followed by recovery. The opening from the stomach was not found but the abscess contained a number of raisin seeds. [A.G.E.]

Volvulus of Cecum.—Fripp² reports the case. The patient was a spinster of 52, of an exceedingly nervous temperament. She had suffered from constipation since childhood. For a month previous to the attack she had suffered from marked indigestion and constipation. She complained at the beginning of the attack of discomfort in the lower part of the abdomen, more particularly in the right iliac fossa. There was some nausea, some tenderness in the right iliac region, temperature subnormal, pulse 68, tongue furred. This condition persisted for several days, and operation was deemed advisable. This revealed a volvulus of the cecum, involving the appendix and also part of the ileum. The patient made a good recovery. [A.B.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Etiology of Uterine Rupture.—H. Futh³ gives the history of a primipara, aged 24, brought into the hospital after three days of labor, in spite of which the head had not yet entered the pelvis, the passage thereto being obstructed by a dermoid cyst of the left ovary. The child was delivered by cesarean section in the middle of the anterior uterine wall; the edges of the incision were accurately approximated and sutured. The tumor was removed and the omentum drawn over the uterine wound and fastened at the lower angle. The patient recovered and at her second labor was again brought to the hospital and another laparotomy performed on account of uterine rupture. Supravaginal amputation was performed and the peritoneum drained through the vagina with recovery of the patient. Examination of the uterus showed that the rupture was in the line of the previous cesarean section. Futh does not accept the theory of some that there had been a tubouterine pregnancy with this place as the placental site. He believes that the healing of the muscular wall after the cesarean section was incomplete, and that in the changes undergone by the puerperal uterus there was a disarrangement of the cicatricial tissue and consequent weakening, resulting in rupture, although there seemed to be no abnormal resistance to delivery. [w.k.]

Secondary Abdominal Pregnancy.—K. Kamann⁴ states that in the necropsy on a rabbit a complete fetal sac was found

in the abdominal cavity containing a full-term fetus which had recently died. The sac was attached to a very vascular portion of the great omentum, which had been drawn out in the form of a pedicle. The placenta was situated on the wall of the sac opposite its point of attachment to the omentum, which was the only means of connection between the fetal sac and the mother. The internal genital organs lay at some distance from the sac, and appeared to be free from any marked changes. At first he considered it a case of primary abdominal pregnancy, but examination of the uterus showed a recent cicatrix in the uterine wall which proved conclusively that the fetus had developed primarily in the uterus and had escaped into the abdomen through a tear in the uterine wall, and its secondary attachment took place during the course of a gradual protracted rupture of the uterus, so that the fetal sac, becoming adherent to the omentum, received its blood supply from it before being completely expelled from the uterus. [w.k.]

Pelvic Tumors Complicating Parturition.—H. Schwarz¹ details two cases. The first was that of a woman of 34, pregnant for the second time. Vaginal examination during the first stage of labor showed that the upper part and posterior two-thirds of the lesser pelvis was filled by a smooth tumor partially divided into two portions. While preparations were being made to puncture the tumor through the posterior vaginal wall and follow this by cesarean section if necessary, the fetal heart sounds ceased and craniotomy was performed. The patient died two weeks later. Autopsy showed a large, vascular, myxomatous fibroid that originated between the layers of the left broad ligament. The second case was somewhat similar, the tumor being discovered three months before term. A few days before full term the tumor was punctured, colloid material being obtained. Cesarean section was then performed, and the tumor, a large colloid of the left ovary, removed. Mother and child are both living and healthy. [A.G.E.]

Obturator Hernia of Left Tube and Ovary.—To the four cases of obturator hernia of the ovary previously known, Franz Schopf² adds the fifth. These furnish many differences. In one case the uterus was included; in two cases the ovary and tube alone, and in the others the ovary and the intestines. In the case described by Schopf the left tube and ovary had passed through the left obturator canal, and the intestines were injured by pressure. Operation was performed to relieve the condition but the patient died the next day. After section the diagnosis was "acute paralysis of intestines from internal incarceration in obturator hernia." The writer states that in 20 years in a Vienna hospital there were 393 cases of strangulated hernia, three of which were obturator hernia. He gives many other statistics showing the rarity of this condition, and states that most of these cases were not diagnosed but were learned at the autopsy or when laparotomy was performed for intestinal obstruction. He shows also the frequent fatal results of operation but thinks that with improved technic and earlier diagnosis and operation better results will be obtained. [w.k.]

Attachment of the Ovum to Atypical Places.—F. Hitschmann and O. Lindenthal³ review the theories of many authors and the observations made upon animals in order to ascertain the normal place of implantation, and the modifying circumstances which cause abnormal attachment of the impregnated ovum. A known development of the impregnated ovum, requiring a definite time, must take place before it reaches the stage of attachment. Under normal conditions the ovum will find itself within the upper segment of the uterus when this stage of development is reached. But if impregnation occurs at an earlier period in the journey of the ovum, or the impregnated ovum meets with unusual hindrances to its passage, the time of attachment will be reached before the normal place of implantation, and then the ovum will attach itself to the lower uterine segment as in placenta prævia, or at a still earlier period in its journey to some portion of the tube as in ectopic gestation. The normal place of impregnation is not yet certainly determined, neither are the circumstances that control the movements of the impregnated ovum fully known, hence the causes of tubal gestation are still obscure. [w.k.]

¹ La Médecine Moderne, February 11, 1903.

² British Medical Journal, January 10, 1903.

³ Zentralblatt für Gynäkologie, February 28, 1903.

⁴ British Medical Journal, March 7, 1903.

¹ St. Louis Courier of Medicine, March, 1903.

² Wiener klinische Wochenschrift, February 19, 1903.

³ Zentralblatt für Gynäkologie, February 28, 1903.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR. L. F. APPELMAN

REVIEW OF LITERATURE

Methylene-blue in Tuberculosis.—Herbert¹ reports the results of the employment of medicinal methylene-blue in 15 cases of tuberculosis. He found that it impeded the expectoration and sometimes caused a choking sensation. It reduced in purulent-mucoid sputum, the proportion of mucoid substance making the quantity of sputum smaller and the number of bacilli increased. He did not note, however, any change in the lesion of the lungs, nor any influence upon the temperature. It is useful only for the purpose, therefore, of relieving cough and reducing expectoration when the latter is too profuse. [H.C.W.]

The Use of the X-ray in Dermatology.—Schiff² employs the Röntgen rays as the treatment of choice in favus, sycosis and all parasitic diseases of the hairy portions of the body. Care must be taken that the applications are not continued too long; it is better to give them frequently for short periods, usually not over 10 minutes, using a current of 2 amperes. The tube should be held 15 or 20 centimeters from the diseased area. The healthy skin should be protected by lead foil. [L.F.A.]

The Influence of Some Modern Drugs on Metabolism in Gout.—Bain,³ summarizing the results of certain investigations, states (1) there was an increase in albumin in the urine with the development of a subacute attack of gout; (2) a preponderance of serum globulin over serum albumin was observed; (3) there was present in the blood the peculiar leukocytes described by Chalmers Watson (myelocyte-like cells); (4) lithium benzoate and urotropin were ineffective as regards uric acid excretion; (5) piperidin tartrate, piperazin, lysidin, and sidonal in the order named, showed an increasingly augmenting effect on the uric acid excretion; (6) the excretion of uric acid was diminished during the administration of colchisal and the conjugated sulfates increased; and (7) the solvent action of tetra-ethyl-ammonium hydrate on sodium biurate probably depends upon its alkalinity. [A.O.J.K.]

Methylatropinbromid.—Methylatropinbromid is a new preparation of atropin concerning which Vaubel⁴ reports that it acts very much more promptly and less permanently than atropin. Maximal mydriasis occurs within five minutes after the instillation of two drops of a 1% solution into the conjunctival sac, and disappears within six hours. It has very much less effect upon the pulse-rate than atropin and very large quantities are needed to cause the cerebral intoxication characteristic of this group of drugs. Although Vaubel asserts that it acts less actively upon the glandular secretions than atropin, he recommends the drug for the suppression of the night sweats of tuberculosis, believing it to be especially advantageous because it is free from the unpleasant secondary effects of atropin, especially great dryness of the mouth. [H.C.W.]

Lactic Acid in the Treatment of Dysentery.—According to the experience of J. D. Hunter,⁵ of Arequipa, Peru, lactic acid, which has been employed in cases of infantile diarrhea, gives equally good results in cases of acute or subacute dysentery, where stools are green and viscid. In such cases the lactic acid is prescribed in doses of 15 drops repeated every two hours, preferably in solutions with syrup or gum. [C.S.D.]

Hydrogen Dioxid Water as an Epilatory.—Gallois⁶ has found the application of hydrogen dioxid one of the simplest and most inoffensive means of removing superfluous hairs. He recommends that the part be touched with a pledget of cotton moistened with the hydrogen dioxid; it should be left in place for several minutes. This application should be repeated daily until the desired result is obtained. Under this treatment the hairs grow paler and finally become absolutely colorless. If the applications are continued they atrophy and entirely disappear. [L.F.A.]

Treatment of Tetanus by Baccelli's Method.—Claude and Chauffard,¹ at a meeting of the Société Médicale des Hôpitaux for October 24, 1902, reported on cases of tetanus treated by intravenous injections of phenol. Their experience differs so greatly as to throw considerable doubt on the efficiency of this method of treatment. [C.S.D.]

Potassium Permanganate in Opium Poisoning.—Finkelstein² declares potassium permanganate to be a specific and unequalled antidote in acute poisoning with morphin and other opiates. Since its introduction in 1893 by Moor, of New York, this remedy has been repeatedly employed with life-saving success. In Russia Velamovitch has published a series of experiments which have demonstrated the direct chemical action of the permanganate on morphin and the opiates in the stomach and in the blood as well as in the test-tube. The doses are hypodermically 16 minims of a 4% solution every half to one hour until marked improvement follows; internally about 4 grains of the salt are requisite to neutralize 3 grains of morphia or 5 drams opium tincture. In the author's case, that of a young girl who had swallowed about 16 grains of morphin hydrochlorate and who 1½ hours later presented all symptoms of profound poisoning, two injections of a 4% solution of the permanganate (15 minims each) administered with an interval of one-half hour sufficed to restore the patient. [L.J.]

The Internal Uses of Potassium Permanganate.—A. Khoury³ reports four patients with painful dysmenorrhea who were cured, and three patients with anemia greatly improved by the administration of potassium permanganate. It was given in doses of from 5 centigrams to 0.26 gram (½ to 4 grains) usually in pills, which have the advantage of not staining the mucous membrane of the mouth. In all cases this drug was well borne by the stomach. It caused no constipation or diarrhea; in only one case was the urine tinted a light pink. Menstruation does not counterindicate its use. [L.F.A.]

PATHOLOGY.

J. EDWIN SWEET

EDITORIAL COMMENT

Antitoxic Serums.—It is well known that one of the difficulties encountered in the production of an active immune serum against typhoid and related diseases has been the impossibility of obtaining a toxin of sufficient strength to incite a high degree of immunity. The search for a method of obtaining a powerful toxin has resulted in two interesting papers, one by Conradi,⁴ "On Soluble Toxins of the Typhoid and Dysentery Bacilli Obtained by Aseptic Autolysis," and one by Neisser and Shiga,⁵ "On Free Receptors of Typhoid and Dysentery Bacilli, and on Dysentery Toxin." Conradi believes that the inhibition of growth and final death of bacteria seen in older cultures is not due to an exhaustion of the culture medium, but to the accumulation of certain detrimental metabolic products of the bacteria themselves, which have been set free by a process of self-digestion—autolysis. He further believes that the toxins—products of the cell metabolism—can also be obtained by autolysis, but that this process must be of short duration in young cultures, else the further products of the cell life will destroy the toxin already formed. He therefore suspends in salt solution the mass of bacteria obtained from a young agar culture, places the suspension in the thermostat for 24 to 48 hours, centrifugalizes, filters through a porcelain filter, and finally evaporates in a vacuum to from one-tenth to one-fiftieth of the original suspension. Autolysis for a longer time gives poor results; the addition of antiseptics before the autolysis also depreciates the yield of toxin. With this method Conradi claims to have manufactured a toxin from dysentery cultures which will kill a rabbit in a

¹ Jour. of Tuberculosis, 1903, Vol. v, p. 32.² Journal des Praticiens, Vol. xvi, No. 46, 1902, p. 733.³ British Medical Journal, 1903, viii, 243.⁴ Therapeutische Monatshefte, xvii, January, 1903, p. 37.⁵ La Semaine Médicale, November 19, 1902.⁶ Le Mois Thérapeutique, Vol. III, No. 9, 1902, p. 105.¹ La Semaine Médicale, November 5, 1902.² Russki Vrach, January 4, 1903.³ Journal des Praticiens, Vol. xvii, No. 5, 1903, p. 68.⁴ Deutsche med. Wochenschrift, No. 2, 1903, p. 26.⁵ Deutsche med. Wochenschrift, No. 4, 1903, p. 61.

dose of 0.1 cc., with characteristic lesions of dysentery as seen in man. A typhoid toxin was obtained which was fatal for guineapigs in doses of 0.2 cc. Neisser and Shiga, on the other hand, first killed their cultures by an exposure to 60° C., then placed the suspension of killed bacteria in the thermostat for two days, then filtered. The authors claim to have produced a toxin nearly as active as that of Conradi—this without concentration in the vacuum—and they describe very satisfactory immunization experiments. They explain the formation of toxin according to the principles of Ehrlich's theory—the receptors, *i. e.*, that atomic complex of the toxin which, acting upon the body cells, causes the production of the antibodies, are "split off" from the bodies of the dead bacteria at the temperature of the thermostat.

Experimental Fat Necrosis.—The fact that the escape of the normal pancreatic secretion into the peritoneal cavity is followed by a more or less widely disseminated fat necrosis had never been satisfactorily analyzed until Flexner¹ demonstrated that lipase, or steapsin, the fat-splitting ferment of the pancreas, is found in the necrotic foci, while it could not be demonstrated by his method in normal fat. The conclusion seemed warranted that lipase is at least one of the causative factors in fat necrosis. But later experiments of Kastle and Loevenhart² have shown that lipase can be demonstrated in all the tissues of the body in which there is any utilization or storage of fat. The question was therefore opened whether lipase has really anything to do with the causation of the necrotic process. Wells³ contributes an able and very interesting paper designed to throw light upon this question. He finds that the ordinary commercial "pancreatins" are equally as active in producing necrosis as fresh extracts of the gland and has the advantage of containing fewer pathogenic bacteria than the extracts of the fresh gland prepared in the usual manner. By saturating bits of cotton with pancreatin and fastening them to different parts of the omentum and removing them at different intervals he was able to study the sequence of changes which enter into the complete picture of fat necrosis. The most important conclusions of the paper are those in regard to the nature of the causative factor. The necrotic action of the pancreatic products can be inhibited by heating to 55° C. and is completely destroyed by heating to a temperature above 71° C. The action is therefore due to a ferment. But the question of which ferment is left unsettled. Wells did not succeed in producing a necrosis with extracts of hog's liver or with cat's serum, both of which possess lipolytic power. Mixtures of lipolytic extracts with pancreatic trypsin were inactive; trypsin alone had likewise no effect. It is impossible to isolate the lipase of the pancreas, which may differ from the lipase of the other organs. Wells believes that the necrosis is primary and may be caused by some unknown ingredient of the pancreatic secretion, while the fat-splitting, due to the lipase, is secondary and is not the cause of the necrosis. Of secondary interest are the conclusions in regard to the dissemination of the process and the order of the changes produced. The route by which the dissemination is accomplished seems to be the lymphatic system. The necrosis progresses for but a few hours at any one point, the extension being apparently limited by leukocytes and by the connective tissue septa. Necrotic areas are absorbed by leukocytes and healing is by proliferation of connective tissue from the margin. The foci of necrosis become visible to the naked eye in from three to five hours and may disappear in eleven days, or may persist longer, depending upon their size. Fat necrosis by itself is not dangerous to the affected animal.

REVIEW OF LITERATURE

Old and New in Regard to the Pathology of Noma.—V. Ranke¹ has collected 28 cases of ulcerative stomatitis from the literature, and adds one new case, in which the mycelium of a fungus has been demonstrated, and which is believed to be the etiologic factor. Perthes² places the fungus with the streptothrix group. It is an obligatory anerobe. No one has yet succeeded in inoculating animals with this organism, so that the pathogenicity of the organism cannot be considered as proved. [J.E.S.]

True Hypertrophy of the Brain, with the Description of the Thymus and Adrenals.—Anton³ describes the brain, thymus, and adrenals from an epileptic of 23 years. Excepting the great size of the brain—2,055 grams (68½ ounces) in weight—there was nothing especially noteworthy in the condition found. The thymus was of unusual size for the age of the patient, a condition noted by many pathologists as occurring in cases of hypertrophy of the brain. The adrenals were noticeably atrophied and contained an abnormally large cavity. The case is of especial interest in connection with the work of Zander, who found that in a large majority of anencephalics, hemi-cephalics, and cyclops the adrenals were imperfectly developed. [J.E.S.]

Local Tissue Changes After Injections of Hydrargyrum Salicylicum.—Pezzoli⁴ describes the changes caused in the muscle tissue by the injection of hydrargyrum salicylicum. The patient was a man who was murdered sixteen days after the last injection. The effects of these injections may be grouped under two heads: The mechanical effect, consisting in forcing apart the muscle fibers and in filling the lymph tracts with the injected mass; the result is a destruction of some fibers and the formation of small cysts filled with the mass. The second effect is a chemical one, the necrosis of more muscle fibers and the production of an inflammation with fibrinous exudate, infiltration, and granulation tissue. The microscopic picture is therefore that of waxy degeneration of the muscle fibres in the immediate neighborhood of the injection, inflammation, and small cysts surrounded by the giant cells, which characterize the absorption of a foreign body in the tissues. No such cavities as those described by Allgeyer, Jullien, and Audry were found—cavities with the characteristics of abscesses—and Pezzoli concludes that the paraffin suspension of hydrargyrum salicylicum has less irritative properties than calomel and is preferable to calomel for the intramuscular injections. [J.E.S.]

Salivolithiasis.—Hanszel⁵ describes three cases of calculi of the salivary glands or their ducts. Hanszel inclines to the view that the etiologic factor is to be found in some inflammatory process, followed by a prevention of the salivary flow and subsequent thickening of the secretion. The article concludes with an exhaustive discussion of the differential diagnosis. [J.E.S.]

Osteoplastic Carcinoma.—Comisso⁶ gives in full the case history and microscopic description of a tumor, starting probably from the mucosa of the left nostril, eventually attacking the bones of the entire base of the skull. An operation was done, but the patient died from meningitis. The tumor, a carcinoma, was marked by the production of new bone tissue, such as is found in metastases of osseous carcinomata. [J.E.S.]

Bacteriologic Diagnosis in Medicine.—In connection with diphtheria, Woodhead⁷ points out the difficulty of obtaining positive cultures in cases in which the lesion is laryngeal or tracheal, and also in very young children, owing to the difficulty in procuring a satisfactory "swab." In case of a first negative report, repeated attempts should be made. Thus in 6.7% of Woodhead's cases (12,172) the first examination was negative, but subsequent examinations demonstrated the presence of the microorganisms. "Mixed infections" with staphylococci give a greater mortality than those with the streptococcus, while in mixed infection of any kind the deathrate is higher than in infections with the diphtheria bacillus alone. In the majority of cases the bacilli persist for from two to nine weeks,

¹ Münchener medicinische Wochenschrift, No. 1, 1903, p. 13.

² Archiv für klin. Chirurgie, Bd. 59, 1899.

³ Wiener klin. Wochenschrift, No. 50, 1902, p. 1321.

⁴ Wiener klin. Wochenschrift, No. 51, 1902, p. 1360.

⁵ Wiener klin. Wochenschrift, No. 1, 1903, p. 4.

⁶ Wiener klin. Wochenschrift, No. 50, 1902, p. 1330.

⁷ Brit. Med. Jour., September 27, 1902.

¹ Journal of Experimental Medicine, 1897, 11, 413.

² Chemical News, 1901, 1xxx111, Nos. 2150 to 2155.

³ The Journal of Medical Research, Vol. 1x, No. 1, 1903.

a fact which emphasizes the importance of not discharging patients until bacteriologic examination reveals the continued absence of the bacilli.

Leukocytosis in Pneumonia and Diphtheria.—Paul Heim¹ states that pneumonia begins with a leukocytosis. Diminution of the leukocytosis indicates the appearance of the crisis. The eosinophiles disappear in the course of the pneumonia and reappear at the time of the crisis. These cells are of value in the differential diagnosis between croupous and bronchopneumonia. In diphtheria occurs a marked leukocytosis. The administration of the curative serum is accompanied by a diminution of the number of white cells. The eosinophiles diminish in number during the early course of the disease, but after the loosening of the membrane appear in great numbers.

Leukocytosis in Scarlet Fever and Epidemic Parotitis. Sacquippi² reports results of examinations in 14 cases. In the first week occurs a marked hyperleukocytosis, especially of the polymorphonuclear leukocytes, to a slight extent of mononuclear cells. The eosinophiles increase considerably after the first few days. In the second week the leukocytosis is moderate, the increase being especially of the mononuclear cells. During and after the third week the normal condition is approached, except that the number of eosinophiles still remains high. The persistence of increased number of the polymorphonuclear cells indicates a complication. Transitional forms in considerable number indicate a doubtful prognosis. The increase of eosinophiles, the writer thinks, may be of value in doubtful cases. In epidemic parotitis occurs a moderate hyperleukocytosis, the increase being chiefly one of mononuclear cells. Only when complicated by an orchitis is the increase of the polymorphonuclear cells prominent.

The Pathology of Nerve Degeneration.—To determine the nature of the chemistry of nerve degeneration, Mott³ estimates the amount of phosphorus in the two halves of spinal cords in which unilateral degeneration had resulted from recent cerebral lesion. Less phosphorus was found in the degenerated side, which, according to the writer's interpretation, indicates that the Marchi reaction develops upon the splitting of the complex phosphoreted fat lecithin into simple bodies such as glycerophosphoric acid and stearic or oleic acid. The former escapes into the blood and the nonphosphoreted fatty substance left behind is blackened by the osmic acid. An increase of cholin in the blood and cerebrospinal fluid in many forms of acute degeneration of the nervous system, and in some chronic forms (beriberi, alcoholic neuritis, disseminated sclerosis, general paralysis). A definite relation was found between the presence of cholin in the blood and the degeneration in the nervous system as controlled by histologic method. Cholin hydrochlorid introduced in animals produces a fall in the blood-pressure. Cholin may, therefore, though a feeble poison when present in the blood in abundance, accelerate cardiac failure.

Influence of Soil, Fabrics, and Flies in the Dissemination of the Typhoid Bacillus.—Firth and Horrocks³ reach the following conclusions: The bacillus shows no increase in numbers or tendency to grow in any direction when placed in soil. It may be washed through eighteen inches of closely packed soil in which no cracks or fissures exist. It assumes a vegetative existence and survives in ordinary and sewage polluted soil for varying periods, in some instances seventy days. The presence or absence of organic nutritive material in the soil appears to be of little importance. The organism can be recovered more readily from dry than from continually moistened sand, probably owing to the fact that in the latter it is washed into the deeper layers. In peat it cannot be recovered after the thirteenth day. In moderately rain dampened soil it can be recovered up to the sixty-seventh day, in dampened sewage up to the fifty-sixth. After heavy rainfall it at once disappears from the surface layers. It can readily be recovered from dried wind-blown sands, which indicates the possibility of the dissemination of dried infected enteric material by currents of wind. From infected fabrics (khaki serge and drill) the organism was

recovered after periods varying from 9 to 87 days. On surface soil it survives an exposure to 122 hours of direct sunshine extending over a period of 21 consecutive days, on clothing (serge) a period of 50 hours covering ten days. Ordinary house flies can convey infected material from excreta or other polluted material to objects on which they walk, rest, or feed. The infective material appears to be attached to their heads, wings, legs, and bodies. It has not been proved that the bacillus passes through the digestive tract of the fly.

Eosinophilia and Verminous Parasitism in Man.—Launois¹ communicates in his name and in that of Emile-Weil the observations made on a patient afflicted with *Tenia inermis*. The blood of this patient exhibited eosinophiles throughout the entire period of infection, but the symptoms disappeared after the expulsion of the parasite by means of suitable medication. This observation together with those made in other cases of helminthiasis leads to the opinion that eosinophilia is far from being a constant phenomena in verminous affections and that while its presence may be of real diagnostic value its absence should in no way set aside the possibility of the existence of parasitism. In this connection, the observations on the occurrence of eosinophilia in human filariosis made by Vaquez, Clerc, and Sicard, are of interest. The number of eosinophiles reach from 7.5% to 12% of the total number of leukocytes, and appears to be more accentuated at the moment of the appearance of the embryos in the blood and to diminish with their disappearance. [C.S.D.]

Croupous Pneumonia and Sepsis, Due to the Pneumobacillus of Friedländer.—Opposing the statements of Fraenkel and Prochaska, that pneumonia is always produced by the diplococcus, Philippi² reports a case in an elderly man from whose blood he cultivated Friedländer's pneumobacillus during life; the same organism was isolated after death from sections of the lung and bone marrow. Fraenkel's diplococcus was absent. [E.L.]

Mycetoma with Black Granules.—Mycetoma or madura foot may be divided into two varieties, one with pale, the other with black granules. Laveran³ reports the case of a Soudanese of 22, afflicted with mycetoma of the black variety, affecting the left foot. The tumor was situated near the outer part of the plantar surface, and discharged pus mixed with typical granules from several openings. He refused amputation until one year later, but died three days after operation. A dissection of the foot showed two tumors. Pieces hardened in formalin; in one showed numerous black, mushroom-like granules; the other was not infected; stained sections showed it to be made up of dense layers of mycelial threads; no spores were seen. The mycetoma with black granules is therefore formed by a fungus, which attacks the tissues slowly; so soon as suppuration is established the mycelial threads infiltrating the tissues are dissolved and thrown off as black granules. According to Laveran the fungus is not an actinomyces, and it is a different variety of streptothrix than that causing the mycetoma with pale granules. He proposes the name of *Streptothrix mycetoma*. [E.L.]

On a Case of Tumor of the Cauda Equina.—Volhard⁴ describes a case which is of peculiar interest as well for its rarity as for the accuracy of the diagnosis which would probably have led to the saving of the patient's life by operation had not uremia intervened and caused death before operative relief could be secured. Following the carefully elaborated scheme for the differential diagnosis of lesions of the lower spinal cord given by Müller in his "Untersuchungen über die Anatomie und Pathologie des untersten Rückenmarksabschnittes," a diagnosis was made of a benign neoplasm about the conus of the cauda equina. The autopsy confirmed the diagnosis and demonstrated a cystopyelonephritis of recent origin. There appears to be but one previously recorded case of correct diagnosis of similar lesion, namely, that by Laquer of Frankfurt, who in 1891 described a case of compression of the cauda equina by a benign tumor crowding the canalis sacralis. [C.S.D.]

¹ Ref. in Centralt. f. Allg. Path. u. Path. Anat., Bd. xlii, No. 11, S. 448, 1902.

² Arch. de méd. Expér. et d'Anat. Path., T. 14, 1902, No. 1.

³ Brit. Med. Jour., September 27, 1902.

¹ La Semaine Médicale, November 12, 1902.

² Münchener medizinische Wochenschrift, November 11, 1902.

³ Bulletin de l'Acad. de Méd., 1902, Vol. xlvii, p. 773.

⁴ Deutsche medizinische Wochenschrift, August 14, 1902.

A New Method of Isolating the Tubercle Bacillus from Body Fluids.—Under the term "inoscopy," A. Jousset¹ describes a method of isolating organisms from bodily fluids, based on the observation that if the liquid be coagulated most contained organisms are caught in the meshes of the clot. If the fluid to be examined is noncoagulable, such as urine, a clot is formed by the addition of a prepared blood serum. The blood of the horse is used, being diluted with an equal quantity of 10% salt solution, and then centrifuged. The supernatant serum is added to the liquid to be examined, and coagulation occurs. With a fluid that is spontaneously coagulable this procedure is not necessary. The clots are collected on a filter; washed with distilled water, and then digested at 38° C. with 10 cc. to 30 cc. of the following artificial gastric juice: Pepsin, 1 to 2 gm.; glycerin, 10 cc.; hydrochloric acid (22° Baumé), 10 cc.; sodium fluorid, 3 gm.; distilled water 1,000 cc. When digestion is completed, the liquid is centrifuged and the sediment is examined for microorganisms by the ordinary methods. This method is especially valuable for the demonstration of tubercle bacilli, but may be used to recover any suspected organism from the fluid. [B.K.]

The Action of Acids and Acid Salts on Blood-corpuses and Other Cells.—An elaborate article on the above subject is contributed by S. Peskind,² who details many experiments suggested by the observation, made while investigating laking agents, that small quantities of ferric chlorid or hydrochloric acid cause agglutination and precipitation of blood-corpuses. It was found that the acids producing this effect number at least 20. Corpuses thus acted upon lose their agglutination and precipitation if treated with saline solution. The reaction affects the leukocytes as well as the red cells. The uses of the reaction are: (1) To obtain large quantities of blood-corpuses; (2) to interrupt the action of all hemolytic agents that are not affected by the precipitants; (3) to determine at any given moment what percentage of corpuses has been laked by a hemolytic agent; (4) perhaps for determining the alkalinity of blood-serum. The reaction, which also occurs with spermatozoa, yeast cells, bacilli, and ciliated epithelium, is believed to be due to the combination of the acid with the nucleoproteid of the cell stroma. Further experiments have led Peskind to conclude that the existence of an envelope in mammalian blood-corpuses is highly probable if not absolutely certain. This envelope, to explain all the facts, must contain nucleoproteid, cholesterin, and lecithin. [A.G.E.]

Thermotaxis of Leukocytes.—M. E. Mendelssohn,³ of Paris, finds that white blood-corpuses possess thermotactic properties, *i. e.*, within certain limits they are attracted by higher temperatures. This so-called positive thermotaxis may be observed at 68°–77° F.; it is more pronounced between 77°–95° F., and reaches a maximum at 96.8°–102.2° F.; the thermotactic optimum for leukocytes lies between 102.2°–103.1° F. No thermotactic movements could be detected above 104° F. The existence of negative thermotaxis, *i. e.*, motion toward lower temperatures, has not as yet been demonstrated conclusively for white corpuses. Positive thermotaxis must play a most significant part in various pathologic processes. We may surmise that leukocytes are attracted to the seat of inflammation by the combined forces of chemiotaxis and thermotaxis, in order to exert their phagocytic energies in defending the organism against invaders. New light is thrown by these experiments on the doctrine of fever. The author promises a larger work on the subject in the future. [L.J.]

The Principal Accessory Factors in the Etiology of Cancer.—R. de Bovis⁴ supplements his recent review of cancer statistics by a further discussion of the available data bearing on the racial, geologic, orographic, meteorologic, social, professional and dietetic factors in the causation of malignant growths. He reviews the more important contributions of the last few years to the subject, and is led to conclude: 1. That southern races (Italians, negroes, Israelites) show less receptivity for cancer than northern races; of the latter, Germans and Scandinavians are perhaps the most receptive. 2. While

statistically there is no objection to Kolb's observations as to the greater prevalence of cancer in lands of tertiary formation, the geographic and geologic theories have failed to supply any key to the frequency of cancer. 3. Investigations as to the bearing of atmospheric temperatures, *i. e.*, cold climates, fail as yet to afford any positive indications. 4. There appears to be about equal receptivity for cancer among the rich and poor. 5. Taking age into consideration there is no evidence to show that any particular profession or calling gives greater liability to cancer. 6. Persons addicted to the abuse of alcohol are more liable to cancer than others. 7. Of all the etiologic factors, direct or collateral, heredity appears to be most important. 8. The age of maximum frequency of cancer appears to be, in round numbers, 70 years for men and 65 years for women. 9. Marriage does not create any predisposition to cancer, and contagion between husband and wife is more than doubtful. 10. While contagion of cancer is doubtful, inoculability is certain if not frequent. 11. Maternity predisposes to uterine cancer. 12. Celibacy predisposes to cancer of the breast. [C.S.D.]

A Case of Calcified and Ossified Sebaceous Cyst.—Joannovic¹ gives the histology of a case of sebaceous cyst of the back of the neck, the contents of which had calcified and in part ossified. It was removed from a 30-year-old woman; the mass is hard, its surface porous and sections are made with difficulty. Stained sections show it to be a cystic tumor, the capsule of which is made up of squamous epithelium. The desquamated cells are in a state of cornification and calcification, the calcareous particles lying in and between the cells. A large part of the original contents is replaced by young connective tissue containing giant cells growing in from the capsule. The giant cells seem to be absorbing the original cyst contents; but even this connective tissue is not stationary; at those points where the epithelium is removed it becomes changed first into a bony tissue without limesalts, later with limesalts. [E.L.]

Effect of Spider Venom Upon the Urine.—R. Kobert² finds from his own observations and those of Dèlio, Anguilar, and Frédéric Landolf on the examination of the urine in cases of patients suffering from the bite by poisonous spiders (*e. g.*, *Lathrodectus eribus*, *L. mactans*, *L. tredecimguttatus*) that these arachnids secrete a powerful hemolytic enzyme which causes the appearance of albumin, methemoglobin, oxyhemoglobin, urobilin and other hemolytic products in the urin of the patients. [C.S.D.]

Cerebrospinal Meningitis.—Guinon³ reports a case of cerebrospinal meningitis which ended in recovery. The patient was a girl 11 years old, who was suddenly seized with violent headache, cyanosis of the face, opisthotonos, and feeble pulse. The diagnosis was confirmed by discovering a large number of lymphocytes in the cerebrospinal fluid. After the acute symptoms had subsided there remained for a few days a paralysis of the arms and legs. The treatment consisted of mercurial inunctions and the administration of potassium iodid in large doses. [J.H.W.R.]

Cancer in Norway.—Geirsvold⁴ has studied the official statistics of Norway for 32 years (1865–97) to determine the occurrence and frequency of cancer. He includes under this heading sarcoma and carcinoma, and expresses the mortality in figures per 10,000 of the entire population. The mortality from cancer has steadily increased: In 1865 it amounted to 319 (1.9 per 10,000 of population, or 3.3% of all announced deaths); in 1897 there were 1,802 deaths (8.5 per 10,000, 7.5% of deaths). The total from carcinoma mortality during these years is 29,099, an average per year of 882. During these years the population increased only from 1,701,756 in 1865 to 2,110,400 in 1897. This shows a steady increase actually occurring, and while a number of factors have been urged to account for this, such as improvement in diagnosis, greater number of patients being treated by the physicians, larger number of postmortem examinations, etc., these factors are insufficient to alone account for the increase. The disease shows a predilection for certain portions of the country over others. More cancer cases are to be found and the percentage in increase has been greater in the

¹ La Semaine Médicale, January 21, 1903.

² American Journal of Physiology, February 2, 1903.

³ Russki Vrach, January 25, 1903.

⁴ La Semaine Médicale, September 24, 1902.

¹ Centralblatt für Allgem. Pathologie, November 1, 1901.

² Die Medicinische Woche, August 4, 1902.

³ La Semaine Médicale, December 3, 1902, p. 401.

⁴ Nord Med. Arkiv., Vol. xxxiv, Pt. 2, No. 11.

interior than along the seacoast. The large valleys report more cases than the mountains. In the cold zone the disease is said to be rare, but Norway possesses several marked cancer foci in its coldest districts; Hammerfest, its most northern city, presents the greatest mortality from the disease—13.47 per 10,000; the cities in general, however, are more affected than the country districts. As the cities having the hardest water suffer most, the author sees a possible connection between bad water, so common in Norway, and cancer. In certain localities some houses are known as cancer houses. Of the two sexes, the number of men affected is slightly greater than of women. The aged, those over 60, suffer mostly from the increase in the disease. Eighty per cent of the carcinoma fatalities affect the gastrointestinal tract, 13% the female genitalia. [E.L.]

Virulence of the Cephalorachidian Fluid During the Course of Tuberculous Meningitis.—Widal and Le Sourd,¹ in a communication to the Société de Biologie of Paris, July 26, 1902, report that inoculations of guineapigs with the cephalorachidian fluid collected during the life of 12 patients affected with tuberculous meningitis, caused in every instance, even when used in quantities of 1 cc., all the classic lesions of tuberculosis. The cephalorachidian liquid of phthisis not affected with tuberculous meningitis is nonvirulent. It is, therefore, suggested that before speaking of the cure of cases of tuberculous meningitis the actual existence of the disease should have been determined by the inoculation of rabbits with the cephalorachidian fluid. [C.S.D.]

Primary Cancer of the Lung with Pearl Bodies.—Lépine² reports to the Société des Sciences médicales de Lyon a very rare pathologic condition, namely, a primary cancer of the lung containing pearl bodies. The histologic form of the cancer was that of stratified pavement epithelium. This tumor is an apparent histologic paradox, but in reality it bears out the embryologic observations of Kolliker and others, that the lungs, like the esophagus, are of ectodermic origin. [B.K.]

Bacillus Coli Communis.—As a member of a committee appointed to report on the relation of the varieties of the colon bacillus to public health, V. A. Moore³ reports investigations regarding the boundaries of the species of *B. coli communis* and the extent and cause of its varieties. He states that it has not been found in any substance where the possibility of tracing it to previous contamination with human or animal excrement was precluded. This at once brings up the question regarding the relation of numerous forms that have been isolated from extraneous materials and classed without challenge among the varieties of the colon group. Moore believes that too narrow limits are often fixed as the determination of the specific boundaries of the organism, and gives the points he thinks sufficient to determine the species under the headings of morphology, physiology, and pathogenesis. His studies suggest that, normally, there are not many well-established varieties in the digestive tract, and it seems rational to assume that many of the varieties described from abnormal habitats of the species are in some way the results of environmental influence. Tables are appended to show the action of colon bacilli, isolated from various animals, on the sugars and milk. [A.G.E.]

The Bacillus of Eberth in Pharyngeal Mucopus.—Gallois⁴ found the bacillus of Eberth in pharyngeal mucopus in two out of five cases of "rhinopharyngite typhoïdique." The method proposed by Chantemesse was used. This would seem to indicate that typhoid fever may be transmitted by inhalation, the infection localizing itself first in the throat and secondarily in the intestines. Objects contaminated by the mucus may be a source of promulgating the disease and should be disinfected. [J.H.W.B.]

Basophilic Granules in the Red Blood-corpuscles.—Schmidt⁵ considers the basophilic granules in the red blood-corpuscles an expression of regeneration and not of destruction; he says that both these granules, as well as the so-called "polychromatophilic degeneration" of the red blood cells, are the products of a more or less complete caryolysis. To support this

view he reports a case of black water fever, in which the patient during the height of the disease had 1,600,000 red cells and 23% hemoglobin, megaloblasts, normoblasts, poikilocytes, polychromatic red cells, myelocytes, increased number of lymphocytes and polynuclear leukocytes, a few eosinophiles, but no erythrocytes with basophilic granules. As improvement became apparent megaloblasts and normoblasts disappeared, and basophilic corpuscles appeared. They increased in proportion with the number of red cells and the hemoglobin. Concerning malaria, his experience has been that red corpuscles containing basophilic granules always increase during convalescence. [E.L.]

Adrenal Tumors.—Woolley¹ gives a review of the literature of tumors of the adrenal body, and describes in full the following benign adrenal tumors: Fibromas, lipomas, neuromas, gliomas, hemorrhagic cysts, and angiomas, and the following primary malignant tumors: carcinomas, sarcomas, endotheliomas, and peritheliomas. The primary malignant tumors he prefers to call mesotheliomas or mesolepidomas (Adami). He describes also certain secondary malignant tumors, tabulates the cases of primary carcinomatoid adrenal tumors thus far reported, and gives a good bibliography. [A.O.J.K.]

Bacillus of Epidemic Dysentery.—In a paper read before the Academy of Medicine concerning this germ, Chantemesse² claims some of the honors arising from its discovery and description, as in 1888 he, in conjunction with Widal, had reported to the Academy a microorganism which they had isolated from the stools of individuals dying of acute dysentery. It was present in pure culture in the mesenteric glands of such individuals, but was never found in the stools of individuals who had never had dysentery. He objects to Shiga having the bacillus named for him, as his own work antedated Shiga's at least ten years. At the time, however, their discovery was roundly criticised, everyone believing they had described an ordinary colon bacillus, but since then, many others, in particular Kruse, Celli, Shiga, and Flexner, have reported the same organism as the cause of the disease. He accurately describes the bacillus from a morphologic and cultural standpoint, and mentions briefly the different epidemics in which the organism has been isolated. He lays special stress on the difference between it, the colon, and typhoid bacillus. He recognizes but two types of dysentery, the amebic and the bacillary; the former is chiefly sporadic and chronic, ending fatally either through liver abscess or by exhaustion. Occasionally an acute fatal case is met with, it occurs chiefly in adults, and is characterized by stools which contain blood, pus, mucus, and amebae. The blood of such patients does not agglutinate the dysentery bacillus. Bacillary dysentery is epidemic (occasionally sporadic), infections may kill quickly or become chronic, producing ulcers of the large intestine. The blood of such patients agglutinates the bacillus of dysentery after several days. The bacilli multiply in internal cavities, in the walls of the intestines, in the mesenteric glands, in the spleen, and other organs. Bacilli swallowed either accidentally or on purpose have produced the disease, and the organism has been found in the evacuations. [E.L.]

On the Evolution of Nagana and Its Variability in Different Species of Animals.—Lavaran³ communicated to the Académie de Médecine, Paris, June 10, the results of experiments made by Mesnil and himself on nagana or tsétsé fly disease. The disease is easily inoculable and the duration of the period of incubation and of the malady itself varies according to the species of animal inoculated, appearing as an acute infection in mice, rats, dogs and monkeys, as subacute in rabbits, guineapigs, horses, asses and swine, being in these animals invariably mortal, and occurring as a chronic infection, capable of terminating in recovery, in cattle, sheep and goats. The rapidly mortal effects are accounted for by the mechanic obstruction of the small vessels of the brain or medulla in the latter part of the disease, due to the enormous number of trypanosomes in the blood, as seen in rats and mice. The parasites

¹ Gazette hebdomadaire de Médecine et de Chirurgie, August 7, 1902.

² Lyon Médical, January 4, 1903.

³ Médecine, March, 1903.

⁴ La Semaine Médicale, December 3, 1902, p. 400.

⁵ Deutsche medicinische Wochenschrift, October 30, 1902.

¹ American Journal of the Medical Sciences, cxxv, 33, 1903.

² Bulletin de l'Académie de Medec., July 22, 1902.

³ La Semaine Médicale, June 11, 1902.

are rare in many animals which die of nagana, as in the rabbit, which necessitates the admission that the trypanosomes produce a toxin determining fever, paresis, derangement of nutrition and finally death. [C.S.D.]

The Value of the Elastin Stain for Histologic Diagnosis.—Fisher¹ recommends Weigert's elastic fiber stain associated with a nuclear counterstain for all cases in which a tumor particle or similar tissue is to be examined microscopically. He cites a case in which the ordinary stains led to a diagnosis of simple lymphoma; the fibrin stain, however, showed the point where the cells had broken through the bloodvessel wall, thus establishing the diagnosis of malignancy; another case which without Weigert's stain would have been diagnosed as a mass of vesical debris, with it was found to be a necrotic piece of tumor from the bladder. [E.L.]

Hemolytic Action of Saponin.—Saponin is a plant alkaloid, which when injected into the blood produces lysis of red blood cells, hemorrhagic enteritis, subserous extravasations, and death through collapse. The hemolytic properties were tested by Schanzbach,² whose results agreed in the main with those of Ransom: 2 mgr. are sufficient to dissolve the red blood-corpuses in 0.7 ccm. of dog's blood, but insufficient to produce any action on 2 ccm. of it. Animals can be immunized against it. Normal blood-serum delays action of saponin. This hemolytic property of saponin was made use of to determine whether the bactericidal property of the blood suffered by hemolysis. Rabbits inoculated with the bacteria of swine plague died 48 hours sooner in all cases when saponin had acted on their blood, thus proving the depreciation of bactericidal action; in case anthrax bacilli were injected, however, the control animals died as soon as the others; animals injected with saponin alone did not die. [E.L.]

Investigation Upon Hemolysis in Heterogenic Serum.—Baumgarten³ reviews the literature upon hemolysis in heterogenic serum. He considers the agglutinins as identical with Ehrlich's amboceptors. Agglutination changes in the serum at a temperature of 55°, and while there is agglomeration yet there is no real agglutination. Baumgarten believes agglutinins the same as the hemolysins and bacteriolysins. Hemolysis occurs as a result of an osmotic disturbance and is not due to a solution of the red blood cells by the action of a ferment. [W.E.R.]

New Reaction for Biliary Pigments.—Baudouin⁴ describes a new reaction for detecting biliary pigments in the urine. The reagent consists of a solution of commercial fuchsin, 50 centigrams to 100 grams (1½ to 3½ oz.) of distilled water. A test-tube is filled to about one-third with the urine to be tested, which is previously filtered, and in a second tube a similar quantity of distilled water. In each tube two drops of the reagent are placed, and the discoloration is compared. The urine is changed to orange yellow when bilirubin is present. If the urine is deep in color it should be diluted with distilled water. The reaction is explained as follows: Bilirubin is feebly acid, as found in combination with calcium and sodium. Commercial fuchsin is a rosanilin hydrochlorate. When these substances are brought together they form calcium and sodium chlorid and rosanilin bilirubinate, which is of an orange color. A series of experiments of urine from cirrhotics, alcoholics, and cases of hepatic cancer containing large amounts of urobilin did not react to this test, nor did a second series of urine from advanced ataxies containing indican in abundance. [J.H.W.R.]

The Present Status of the Determination of the Freezing Point of Blood and Urine, and Its Importance in the Question of Kidney Insufficiency.—Roeder,⁵ while attempting to make Vant' Hoff's theory of electrical dissociation serviceable to clinical medicine, talks most interestingly about the researches performed thus far in this domain. The osmotic pressure of a fluid and its freezing point may be changed at will by dissolving solids in it; the elevation of the pressure and the lowering of the freezing point are directly proportional to the amount of the dissolved molecules. Practically this is

noticeable only in the cases of crystalloid substances on account of their relatively low molecular weight in comparison with colloid substances: Example, albumen. The kidney's function is to separate from the blood a solution of definite density, that is to keep the blood in a state of average definite concentration. Should they as a result of disease be less able to perform this function, the concentration of both the urine and blood solutions are modified; this expresses itself in the form of a diminution, respectively increase of the osmotic pressure, as well as of a lowering of the freezing point of the solution. These theoretically deduced changes have been found true in a number of ways. Many investigators, in particular Koranyi, have found in diseases of the kidneys a lowering of the freezing point of the urine, an increase of the freezing point of the blood serum. Basing their conclusions upon the detailed studies of their material, many of these men have probably gone too far in their expectation, but in the province of kidney surgery much has been gained, as we may now by means of ureteral catheterization determine the exact functioning power of each individual kidney. The supposition, however, that the appearance of uremic symptoms, the signs of the highest kidney insufficiency depends directly upon the increased osmotic pressure of the blood, could not be maintained permanently. Other men's statements, as well as animal experiments with blood solutions of high concentration, show that this state of affairs is not to be explained so easily as Roeder hopes, that especially this question may be better illumined by the combination of the older methods, with the examination of the solutions concerning their electrolytic behavior; the former informs us regarding the quantity, the latter regarding the quality of the substances dissolved in the blood not excreted by the kidneys. [E.L.]

Addison's Disease and Genital Tuberculosis.—Vincelet¹ has analyzed 216 cases of Addison's disease with tuberculosis of the suprarenal gland and found accompanying tuberculosis as follows: Pulmonary, 122 cases; vertebral, 17; osseous, 12; ganglionic, 14; intestinal, 6; pleural, 6; cutaneous, 1; and finally, tuberculosis of the genitals in 9 cases. Although difficult to determine the exact time of beginning of the genital tuberculosis, the appearance of Addison's disease seems to follow very soon in males, after a longer time in females. The evolution of the disease is practically the same as in suprarenal tuberculosis of other origin. The suprarenal lesion is more marked on the side which is the seat of the genital lesion. The prognosis does not differ from that of other cases. Treatment consists of absolute rest in bed, substantial diet, and codliver-oil in large doses. Suprarenal extract may be given in the dose of 40 to 50 cg. [A.G.E.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 21, 1903:

SMALLPOX—UNITED STATES.			Cases	Deaths
Alabama:	Mobile.....	Mar. 7-14.....	4	
California:	Berkeley.....	Mar. 4-11.....	1	
	Los Angeles.....	Feb. 28-Mar. 7.....	5	
	Sacramento.....	Feb. 28-Mar. 7.....	1	
	San Francisco.....	Mar. 1-8.....	8	
Colorado:	Denver.....	Feb. 28-Mar. 7.....	17	
Dist. of Columbia:	Washington.....	Mar. 7-14.....	2	
Illinois:	Chicago.....	Mar. 7-14.....	8	2
Indiana:	Elwood.....	Mar. 8-15.....	1	
	Evansville.....	Mar. 7-14.....	2	
Iowa:	Davenport.....	Mar. 7-14.....	8	
	Dubuque.....	Mar. 7-14.....	1	
Kansas:	Douglas County.....	Feb. 1-28.....	1	
Maine:	Biddeford.....	Feb. 28-Mar. 14.....	8	
Maryland:	Baltimore.....	Mar. 7-14.....	5	
Massachusetts:	Boston.....	Mar. 7-14.....	1	
	Fall River.....	Mar. 7-14.....	3	
	New Bedford.....	Mar. 6-14.....	2	
Michigan:	Detroit.....	Mar. 7-14.....	7	
	Grand Rapids.....	Feb. 28-Mar. 14.....	24	1
	Port Huron.....	Mar. 7-14.....	3	
Missouri:	St. Louis.....	Mar. 8-15.....	4	
Nebraska:	Omaha.....	Mar. 7-14.....	2	

¹ Münchener medicinische Wochenschrift, October 28, 1902

² Münchener medicinische Wochenschrift, November 4, 1902.

³ Berliner klinische Wochenschrift, October 27, 1902.

⁴ La Semaine Médicale, December 3, 1902, p. 398.

⁵ Archiv für Kinderheilkunde, 1902, Vol. 34, p. 57.

¹ Gazette hebdomadaire de Médecine et de Chirurgie.

New Hampshire:	Manchester.....	Feb. 28-Mar. 14....	16
New Jersey:	Camden.....	Mar. 7-14.....	1
	Jersey City.....	Mar. 8-15.....	3
	Newark.....	Mar. 7-14.....	1
New York:	Buffalo.....	Mar. 7-14.....	2
	New York.....	Mar. 7-14.....	2
Ohio:	Cincinnati.....	Mar. 6-13.....	10
	Cleveland.....	Mar. 7-14.....	1
	Dayton.....	Mar. 7-14.....	7
Pennsylvania:	Altoona.....	Mar. 7-14.....	1
	Philadelphia.....	Mar. 7-14.....	44
	Pittsburg.....	Mar. 7-14.....	48
South Carolina:	Charleston.....	Mar. 7-14.....	3
	Greenville.....	Feb. 28-Mar. 7....	2
Tennessee:	Johnson City.....	Feb. 28-Mar. 7....	14
	Memphis.....	Mar. 7-14.....	2
	Nashville.....	Mar. 7-14.....	1
Washington:	Colfax.....	Mar. 1.....	Present.
Wisconsin:	Green Bay.....	Mar. 8-15.....	3
	Milwaukee.....	Mar. 7-14.....	2

SMALLPOX—INSULAR.

Philippine Islands:	Manila.....	Jan. 3.....	2
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SMALLPOX—FOREIGN.

Austria:	Prague.....	Feb. 14-28.....	20
Belgium:	Brussels.....	Feb. 14-28.....	9
Brazil:	Pernambuco.....	Jan. 15-31.....	10
	Rio de Janeiro.....	Feb. 5-12.....	8
Canada:	St. John, N. B.....	Mar. 18.....	1
Chile:	Antofagasta.....	Jan. 1-31.....	13
Ecuador:	Guayaquil.....	Feb. 7-21.....	1
France:	Rheims.....	Feb. 8-15.....	2
	Roubaix.....	Feb. 1-28.....	6
Great Britain:	Birmingham.....	Jan. 21-28.....	11
	Cardiff.....	Jan. 25-31.....	1
	Glasgow.....	Feb. 27-Mar. 6....	1
	Leeds.....	Feb. 21-28.....	9
	Liverpool.....	To Feb. 28.....	60
	Nottingham.....	Feb. 14-21.....	4
	Sheffield.....	Feb. 28-Mar. 7....	2
India:	Bombay.....	Feb. 10-17.....	36
	Calcutta.....	Feb. 7-14.....	2
	Karachi.....	Feb. 8-15.....	1
	Madras.....	Jan. 31-Feb. 6....	1
Italy:	Palermo.....	Feb. 21-28.....	5
Mexico:	City of Mexico.....	Feb. 22-Mar. 1....	7
	Vera Cruz.....	Feb. 28-Mar. 7....	1
Russia:	Moscow.....	Feb. 7-21.....	11
	Odessa.....	Feb. 14-28.....	4
	St. Petersburg.....	Feb. 14-28.....	100
Straits Settlements:	Singapore.....	Jan. 17-31.....	9

YELLOW FEVER.

Brazil:	Rio de Janeiro.....	Feb. 5-12.....	40
Colombia:	Panama.....	Feb. 26-Mar. 5....	2
Mexico:	Vera Cruz.....	Feb. 28-Mar. 14..	7

CHOLERA—INSULAR.

Philippine Islands:	Manila.....	Dec. 27-Jan. 31 ...	6
	Provinces.....	Dec. 27-Jan. 31 ...	1,985

PLAGUE—INSULAR.

Philippine Islands:	Manila.....	Dec. 27-Jan. 3.....	3
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PLAGUE—FOREIGN.

India:	Bombay.....	Feb. 10-17.....	888
	Calcutta.....	Feb. 7-14.....	171
	Karachi.....	Feb. 8-15.....	23
Mexico:	Mazatlan.....	To Mar. 13.....	313
	Oso.....	To Feb. 15.....	255

Changes in the Medical Corps of the U. S. Army for the week ended March 21, 1903:

PEASE, FRANK D., contract surgeon, is granted leave for one month, from about March 26, with permission to apply for an extension of one month.

MCADORY, ROBERT J., contract surgeon, is relieved from duty at Camp McKinley, H. T., and will proceed to San Francisco, Cal., and report by telegraph to the adjutant-general of the Army for further orders.

MCCLURE, S. B., contract surgeon, is granted leave for one month.

DEWITT, First Lieutenant WALLACE, assistant surgeon, is relieved from further attendance at the Army Medical School, Washington, D. C., and will proceed to Fort McPherson for treatment and observation by the post surgeon.

SHAW, Captain HENRY A., assistant surgeon, will accompany First Lieutenant Wallace DeWitt, assistant surgeon, to Fort McPherson, for the purpose of rendering such medical assistance as may be required by Lieutenant DeWitt en route, and upon the completion of this duty will return to his proper station.

KENNEDY, Captain JAMES M., assistant surgeon, leave granted February 6 is extended one month.

GRAHAM, GEORGE, hospital steward, Philippine Islands, is relieved from further duty in the division of the Philippines. He will proceed to San Francisco, Cal., and report to the commanding general, department of California, for assignment to duty.

PAGE, Captain HENRY, assistant surgeon, is granted leave for one month, to take effect upon his being relieved from duty at Fort Monroe.

MORRIS, Major EDWARD R., surgeon, is detailed for duty as surgeon in charge of the base hospital, Iloilo, Panay, with station in Washington, D. C., relieving Major A. S. Polhemus, surgeon. Major Polhemus will proceed to Camp Bumpus, Tacloban, Leyte, for duty.

WOOD, H. L., contract surgeon, is granted leave for one month, with permission to apply for an extension of one month, to take effect upon being relieved by Captain Irving W. Rand, assistant surgeon.

MCWILLIAMS, JOSEPH G., hospital steward, now on furlough at San Diego, Cal., is relieved from further duty with the company of Instruction No. 2, hospital corps, Fort McDowell, and will report on or before expiration of furlough at San Diego Barracks, to relieve Hospital Steward Patrick McGloin. Steward McGloin will proceed to Fort Sheridan to relieve Hospital Steward George C. Doran. Steward Doran will proceed to Fort Wright to relieve Hospital Steward Harry Meade. Steward Meade will proceed to San Francisco, Cal., and report for duty aboard the Army transport leaving that city on or about May 1 for the Philippines.

SHOCKLEY, First Lieutenant M. A. W., assistant surgeon, is granted leave for one month, from about March 20, with permission to apply for an extension of fifteen days.

Changes in the Medical Corps of the U. S. Navy for the week ended March 21, 1903:

KAINES, A. W., acting assistant surgeon, appointment revoked, to take effect upon reporting of relief—March 14.

BENTON, F. L., passed assistant surgeon, ordered to the Naval Station, Cavite, P. I.—March 14.

LUNG, G. A., surgeon, detached from the Bureau of Medicine and Surgery, and ordered to the Naval Hospital, Philadelphia, Pa.—March 16.

STEPP, J., assistant surgeon, detached from the Isla de Luzon and ordered home to wait orders—March 16.

COOKE, P. L., acting assistant surgeon, ordered to the Naval Academy, Annapolis, Md.—March 17.

HESLER, F. A., surgeon, died March 11 on board U. S. S. Wilmington, en route from Cavite, P. I., to Yokohama, Japan—March 17.

Changes in the Public Health and Marine-Hospital Service for the week ended March 19, 1903:

WILLIAMS, L. L., assistant surgeon-general, to proceed to New York, N. Y., as inspector of purveying depot—March 13, 1903.

WICKES, H. W., passed assistant surgeon, relieved from duty at Cincinnati, Ohio, and directed to proceed to Reedy Island quarantine and assume command of the service at that port, relieving Assistant Surgeon T. F. Richardson—March 12, 1903.

DECKER, C. E., assistant surgeon, granted extension of leave of absence, on account of sickness, for fourteen days from March 7—March 12, 1903.

RUSSELL, H. C., assistant surgeon, to proceed to New York, N. Y., and report to Surgeon G. W. Stoner, Immigration Depot, for temporary duty—March 19, 1903.

FRICKS, L. D., assistant surgeon, upon being relieved from duty at Cape Fear quarantine, to proceed to New York, N. Y., and report to Surgeon G. W. Stoner, Immigration Depot, for duty—March 19, 1903.

KERR, J. W., assistant surgeon, relieved from duty at New Orleans, La., and directed to proceed to Cincinnati, Ohio, and assume temporary command of the service at that port—March 12, 1903.

RICHARDSON, T. F., assistant surgeon, upon being relieved from duty at Reedy Island quarantine by Passed Assistant Surgeon H. W. Wickes, to report to him for temporary duty. Upon expiration of said temporary duty, to proceed to New Orleans, La., and report to medical officer in command for duty and assignment to quarters—March 12, 1903.

KORN, W. A., assistant surgeon, to report to medical officer in command at Philadelphia, Pa., for assignment to special duty—March 17, 1903.

SCHERESCHEWSKY, J. W., assistant surgeon, relieved from duty at New Orleans, La., and directed to report to Surgeon G. W. Stoner, Immigration Depot, New York, N. Y., for duty—March 17, 1903.

GLOVER, M. W., assistant surgeon, relieved from duty at the Immigration Depot, New York, N. Y., and directed to proceed to Baltimore, Md., and report to medical officer in command for assignment to special duty—March 17, 1903.

WARREN, B. S., assistant surgeon, upon expiration of leave of absence, relieved from duty at Washington, D. C., and directed to proceed to Cape Fear quarantine, relieving Assistant Surgeon L. D. Fricks, and assume command of the service at that port—March 19, 1903.

STIMSON, A. M., assistant surgeon, relieved from duty at the Immigration Depot, New York, N. Y., and directed to proceed to New Orleans, La., and report to medical officer in command for assignment to special duty—March 17, 1903.

ALEMAN, FERNANDO, acting assistant surgeon, granted leave of absence for seven days from March 8, 1903, under provisions of paragraph 191 of the regulations.

PATRIE, W. E., acting assistant surgeon, granted extension of leave of absence for seven days from March 13—March 11, 1903.

GIBSON, R. H., pharmacist, granted leave of absence for twenty-three days from March 9—March 12, 1903. Relieved from duty at the Gulf quarantine station, and directed to proceed to Vineyard Haven, Mass., and report to medical officer in command for duty and assignment to quarters, relieving Pharmacist L. P. Hall—March 12, 1903.

BROWN, F. L., pharmacist, upon being relieved from duty at Cape Charles quarantine, to proceed to Pittsburg, Pa., and report to medical officer in command for duty—March 12, 1903.

STEPHENSON, C. W., pharmacist, to report to chairman of board of examiners at Chicago, Ill., for the purpose of determining his fitness for promotion to the grade of pharmacist of the second class—March 18, 1903.

HALL, L. P., pharmacist, upon being relieved from duty at Vineyard Haven, Mass., to proceed to Cape Charles quarantine and report to medical officer in command for duty and assignment to quarters, relieving Pharmacist F. L. Brown—March 12, 1903.

SPANGLER, L. C., pharmacist, granted leave of absence for twenty-five days from March 4—March 12, 1903.

American Medicine 519

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The Extinction of Tuberculosis.—In a capital lecture on this subject, published in the English journal *Public Health* of March, Dr. Alfred Hillier gives a striking chart showing that at the present rate of decrease in the deaths from pulmonary tuberculosis Prussia will reach the zero point about the year 1927, whereas in England at that time there will still be about 8 deaths per 10,000, and the total extinction will take place only about 20 years later. In Prussia, whose statistics do not deal with the phthisis rate alone, but with the whole of the deaths from tuberculosis, the only decline—and that is a rapid one—of which the statistics furnish a record has occurred since 1886. From 1876 to 1886, a period during which our tuberculosis rate was steadily diminishing, the Prussian rate remained stationary at about 31 per 10,000. But in 1887 the drop in the Prussian rate began, and it has continued comparatively steadily down to 1900, when it had fallen to 21 per 10,000. In England in the same period the drop in the tuberculosis deathrate has only been from 24 to 19 per 10,000. The rapid fall in the Prussian rate is ascribed (1) to the precautions against infectious diseases due to the discovery of the tubercle bacillus; (2) to the improved conditions of the working classes caused by the Workmen's State Insurance laws; (3) the establishment of sanatoriums.

The Microbe-laden Spray of the Tuberculous Patient.—In the address of Dr. Hillier he quotes Professor Koch as having reached the conviction that the spread of the tubercle bacilli is far more by means of the tiny droplets or spray emitted with every cough, sneeze or effort at speech by the patient in the last stages of the disease, rather than by the dry, pulverized sputum. These tiny drops penetrate more deeply into the deeper recesses of the lungs than the coarser particles of pulverized sputum. The experiments of Flügge and his assistants demonstrate this, but the following test by Flügge and Heymann is particularly convincing: Guineapigs were brought into a disinfected room of the hygienic institute and tuberculous patients with disinfected clothes were then admitted. The guineapigs, with their heads fixed facing the patients, were coughed at a distance of from 20 to 45 centimeters every other day for 3 hours. Out of 25 guineapigs 2 died in 4 weeks, 2 in 7 weeks, 1 in 2 months, and 1 in 4 months, all

showing symptoms of inhalation tuberculosis. The advanced cases of pulmonary tuberculosis are therefore the dangerous ones and the public health control of them therefore becomes the dominant duty and the best method of bringing about the extinction of the disease. In England and Wales there are about 60,000 deaths from this cause each year and 120,000 patients require State supervision. The expense of this care is estimated at about \$30,000,000 per annum. Half of this immense sum would be saved out of the poor-rate and the amount would be a rapidly diminishing one.

Social Progress and the Extinction of Tuberculosis.—When the world went wild with enthusiasm over the supposed discovery of a method of extinguishing pulmonary tuberculosis by means of tuberculin injections, an unknown and now forgotten writer said that had Professor Koch succeeded in his aim it would have been the greatest curse imaginable to the human race. The reason given for this seemingly extravagant statement was that the moral and social origins of the disease would have been neglected, and the relation of moral and physical disease can never be safely ignored. *Matum* and *morbus* are often the same, at least so intimately connected that one cannot be eliminated from human life without the other. The most striking proof of this now comes out in the fact that Koch himself admits and even preaches that the great decrease in the deathrate from tuberculosis has been due and will still be due to sanitary and social betterment, but chiefly to the improvement in the condition of the workmen's lives through government insurance, etc. In other words, what may be called the morals of infectious disease are being recognized. The conditions that breed and scatter physical contagion are precisely those that degrade and morbidize the soul and character. Rightness of physical living is necessary to righteousness, and *vice versa*. Koch, the author of tuberculin, forgot this truth; Koch, the sanitarian, now preaches it.

The business aspect of the practice of medicine is discussed by Dr. Patten in the *Northwestern Lancet*, and with logical principle the reprint is sold at ten cents. The epitome of the advice is to systematize and push collections. This is certainly wise counsel, but every one who has thought on the matter knows that it

is a small part of what is needed to make the practice of medicine pay. In the first place we should enter a decided protest against the old and stupid and musty error echoed and reechoed since there has been a medical profession, that doctors are business idiots. According to this silly blunder doctors never charge and never collect for their services, and always end their lives in poverty and will their widows and children nothing but debts and mortgages. We think that for the investment made, that on the original "plant" of intellect, culture, skill, etc., doctors realize as good an interest as blacksmiths, preachers, shopkeepers, promoters, or farmers. All quackishness, and there is plenty of that left in the profession, surely rests upon an appreciation of the value of the dollar and upon an ability to get hold of it. But every quack also in his own person demonstrates the lack of intellect and ability to make money without the poor attempt at stupid cunning. It is noteworthy that those who make great financial successes of their professional lives, who by many years of sharp attention to the monetary side of the practice of medicine, often live a large part of their life, at least they are certainly sure to die, despised by their colleagues because of certain methods of thought and practice, and one may add that this contempt is merited.

The Spaces About Hospitals.—A bill has recently passed the House of the Pennsylvania Legislature worded as follows:

Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania, in General Assembly met, and it is hereby enacted by the authority of the same, That there shall be on all four sides of hospitals hereafter constructed or erected in this Commonwealth a clear space of at least 25 feet, and no hospital shall be extended beyond its present limits by the construction of new buildings, unless a clear space of at least 25 feet shall be preserved on the side or sides so extended, and no permit shall be issued for the construction and erection of a hospital or any extension of a hospital already erected by the proper authorities having charge of the issuing of permits, unless the plans for said building or extension show that the number of feet space mentioned in this act is fully complied with.

Now, why is there such a requirement to be made of hospitals, while factories, asylums, hotels, restaurants, etc., may do as they please concerning crowding and surrounding spaces? The omission of such institutions and the single mention of hospitals throws suspicion both on the motives and the intellects of the legislators. But the suspicion is greatly increased when we note that it is not the requirement of fresh air and open spaces that is demanded, but only that the space shall be of a certain kind and location. If the provision of fresh air and light had been aimed at the act would simply demand this by means of open courts, air wells, the construction of wings, etc. The profound injustice of the act is shown by the limitations imposed on already existing hospitals, which are thus prevented from enlarging their wards and buildings because the adjacent property cannot be obtained, while complying with the arbitrary requirement of the 25-foot space at the outer edges. The act should be entitled, An act to prevent existing hospitals from carrying out desirable enlargements and betterments of their wards, and for crippling the useful-

ness and beneficence of these institutions. This blundering bit of needless legislation is a relic of the old superstition as to the harmfulness of hospitals to the neighborhoods in which they are located. The act should not become a law.

The new Colorado law as to regulation of the practice of medicine, drafted and pushed through the Legislature by Dr. Van Meter, only awaits the Governor's signature to become a law. By its provisions a State Board of nine examiners appointed by the Governor is established. Graduates of chartered medical schools of the State of the standard recognized by the State Board of Medical Examiners are certified by the board as entitled to practise. Nongraduates of such schools are required to pass the examinations by the board in anatomy, physiology, chemistry, toxicology, pathology, surgery, obstetrics, and symptomatology, exclusive of materia medica and therapeutics. Those thus examined shall specify the school or system they purpose to practise, and shall file a certificate from the State Association of that school or system designated by the applicant, stating that he is qualified to practise that school or system. Licenses may be refused or canceled for the following reasons:

The employment of fraud or deception in applying for license on diploma or in passing the examination provided for in this act; conviction of crime involving moral turpitude; habitual intemperance in the use of ardent spirits, narcotics or stimulants; unprofessional or dishonorable conduct. The words "unprofessional or dishonorable conduct," as used herein, are hereby declared to mean: First, the procuring or aiding or abetting in procuring criminal abortion; second, the obtaining of a fee on the assurance that a manifestly incurable disease can be permanently cured; third, the betrayal of a professional secret to the detriment of a patient; fourth, causing the publication and circulation of advertisement of any medicine or means whereby the monthly period of women can be regulated or the menses can be reestablished, if suppressed; fifth, causing the publication and circulation of advertisements of any kind relative to the diseases of the sexual organs tending to injure the morals of the public.

As to who is a practitioner the act sets forth that:

Any person shall be regarded as practising medicine, within the meaning of this act, who shall attach to his or her name the title "M.D.," or "Surgeon," or "Doctor," or "D.O.," in a medical sense, or advertise in any manner or hold himself or herself out to the public in this State as a physician, surgeon, doctor, or as a person who shall diagnosticate, or offer to diagnosticate, any physical or mental disease of any person, or suggest, recommend and prescribe any form of treatment for the attendant palliation, relief or cure of the same, with the intention of receiving therefor, either directly or indirectly, any fee, gift or compensation whatsoever. It is further provided that the doing of any of the things hereinbefore set forth or the maintenance of an office for the reception, examination and treatment of any one as hereinbefore set forth, or the exposure of signs, circulars or advertisements, or any other device or information indicating thereby the occupation of the person or persons as that of being engaged in the practice of medicine as hereinbefore defined, shall be considered as prima facie evidence in any prosecution brought under this act. Nothing in this act, however, shall be construed to prohibit gratuitous service in case of emergency nor to the practice of the religious tenets of any church whatsoever, but in no event shall such person practise in contagious and infectious diseases recognized as dangerous to the public health subject to quarantine regulations, unless they have passed the examinations required by this act, nor shall it apply to commissioned surgeons of the United States Army, Navy, or Marine-Hospital Service while so

engaged, nor to regularly licensed physicians in actual consultation from another State or Territory, nor to regularly licensed physicians actually called from other States or Territories to attend specified cases in this State, nor shall it apply to the practice of dentistry or dental surgery.

While this law is not all that could be desired it will, properly administered, prove greatly superior to the older one. Dr. Van Meter, his associates, and the profession should be congratulated.

The Public Baths Association of Philadelphia in its success should encourage the wisely charitable of other cities. On Wednesday last there was opened a second public bath house at 718 Wood street. The new bath house is equipped with twenty-four shower baths for men and six for women. Separate entrances lead into attractive waiting-rooms, where the bathers exchange their nickels for a clean towel and a fresh cake of soap. Hot and cold water is provided, and everything necessary for the comfort of the patrons. The bath house has a capacity of eighty-four baths an hour, and will be open every day in the year. At the Gaskill street bath house, which was opened in 1898, more than 60,000 baths were taken last year. Since opening over 200,000 baths have been taken there, and over 5,000 women have patronized the public laundry connected with the establishment. The receipts from bathers have not so far paid the running expenses of the bath house, but from present prospects both places will some day become very nearly self-supporting. An actual count of a typical block near the Gaskill street bath house, made a year ago, showed:

Men, women and children	1,713
Living rooms	659
Bathtubs (several used for storing coal)	11
Saloons (in and opposite the block)	5

One bathtub for each 155 people explains why the public bath house has prospered. The establishment of such places should be encouraged, and the philanthropist will find in such work a noble opportunity for doing real good to those less fortunate than himself.

Nutritive Value of Desiccated Vegetables.—

One of the most remarkable peculiarities of the lower organisms, as exhibited in seeds and other vegetal bodies, is the fact that they are capable of withstanding desiccation for very considerable periods without losing capacity for germination and development. The vitalized crystalloids and colloids which possess the power of assimilation and metabolism appear capable of having all uncombined water removed by evaporation without undergoing molecular disruption by the loss of their combined water. They appear to retain the combined water much as crystals retain water of crystallization. If the ordinary drying of seeds, corms, rhizomes, bulbs, etc., does not destroy the integrity of their protoplasm or alter the availability of their stored-up albumin, starch, or sugar, it would appear that they should retain all their nutritive value, and that the same should hold true of most, if not all, vegetables used for food by man as well as it does for forage crops preserved by drying. It is curious that the desiccation of culinary vegetables should be so much neglected nowadays in view of the

universal use of dried fruits from prehistoric times and the practice of drying such vegetables as the pumpkin, in vogue among early New Englanders, in evidence of which the shiny pumpkin poles are still to be seen hanging on hooks in the ceiling in front of the fireplace of many an old homestead. Experiments made in Germany, and more recently in California, have demonstrated that desiccated vegetables suffer no loss of nutriment, and that they remain savory and wholesome. Here is a splendid opportunity for the utilization and conservation of potatoes, beets, parsnips, cabbage and the like at the season of their greatest abundance and in years of over-production, whereby there may be added to the regular supply a line of familiar food concentrated so as to admit of economic transportation for army rations and for those who cannot afford such fresh vegetables out of season. While it may not pay to can such vegetables as we have mentioned, it would be a boon to many if they were put on the market dried.

The art of refraction, if of any value whatever, is only so when absolute accuracy in it is attained. This accuracy requires such exceptional skill and training, is so dependent upon a rare combination of personal characteristics, conscientiousness, delicacy, tact, judgment, keenness of observation, etc., that it is seldom attained. To make the crudity more striking it has become the habit of textbook writers, of schools, of teachers, and of students to suppose that this most difficult of all medical technical work can be learned by anybody without application, and perhaps in a few weeks. On the contrary, no one ever learned it except by years of the most intense devotion. Indeed many men can and do never learn it. This fact accounts in part for much of the pessimism which exists as to the pathologic influence of eyestrain in producing systemic diseases. The patient is not cured because his disease has not been diagnosed and he has had no scientific treatment. In all the world there is no school which will train a student to do the perfect refraction work which conditions the relief of the sufferings of at least one-tenth or one-twentieth of civilized people. Bacteriology, chemistry, carpentering, electrical engineering, surgery, nursing—in any other calling or occupation years must be given to the acquirement of the requisite knowledge and the training of hand, eye, and nerve, but in an art demanding far more subtlety and skill and intellect than any of these, a few pages of theory in a textbook, or a few didactic lectures, are at most held to be necessary. And while the useless lectures are being delivered the drug stores in every town of the United States are dealing out tons of “headache powders” and the tramp spectacle peddler is at his farcical humbuggery, each making the diseases worse which they pretend to cure.

Dose Measures.—From time to time the subject of the dose measures in common use forms the topic of discussion in medical and pharmaceutical journals, but with apparently no practical result. Physicians continue to direct the administration of medicines in teaspoons, dessertspoons, tablespoons, wine glasses and teacups, notwithstanding the fact that these domestic measures are

respectively very likely to differ very much in capacity. The ordinary graduated medicine glasses afford no greater assurance of accuracy or uniformity and are employed to a very limited extent. The explanation of the matter would appear to lie in the fact that in the use of all ordinary remedies it makes very little difference whether there is a discrepancy of a few cubic centimeters one way or the other. The practitioner can scarcely gauge the exact dose of any given remedy to suit the exact susceptibility of each patient, and finds the ordinary capacities of spoons and glasses sufficiently accurate for everyday use. Particularly potent drugs may be administered in drops, and then notwithstanding the very considerable variation in the size of drops from the same dropper, drugs thus prescribed are usually administered in diluted form, and there appears to be no sufficient ground for alarm over the inequality in the doses. The suggestions of some writers that carefully graduated measuring glasses, standard or official droppers, or decigram pipets should be required, is not likely to meet any considerable amount of enthusiasm on the part of physicians or patients, as absolute accuracy in dosage by the mouth is rarely essential.

EDITORIAL ECHOES

Diet and Dyspepsia.—The discovery that there are at Harvard 15 sufferers from insomnia, 100 sufferers from headaches, and 372 sufferers from indigestion has at once started a discussion of the proverbially fantastic and unwholesome things that students eat. In several places actual bills of fare of academic luncheons have been brought to light. Such as this: "Two 'hot dogs,' $\frac{1}{2}$ apple pie, with whipped cream, 2 chicken sandwiches, 1 cup chocolate, 1 vanilla éclair, 1 glass orangeade, 1 hard boiled egg." This is said to be the frequent choice of an undergraduate in the University of Pennsylvania. Any college man can read of equally ungodly mixtures in the tablets of his memory. A few years ago a professor in a western university undertook to obtain from every student an actual week's dietary and a general summary of personal habits in regard to eating and drinking. He had little success, partly because he asked a number of extraneous questions which were thought amusing. "How many hours is your oatmeal boiled?" became a college joke, and but few answered the questions seriously. Of course nobody will dispute that the average college boy's diet is not selected on the lines marked out by the food chemists. But is this a peculiarity of college boys? Statistics from only one side will never determine this, and it should be in order to suggest a few virgin fields for investigation. First, there are the lines of muddy complexioned men who line up every noon at the drug store counters for stomach tonics before luncheon. The college big eater is a dyspeptic *in posse*. These men are dyspeptics *in esse*. What percentage of them have the bachelor's degree, and how many of them are self-made men? Certainly a good number in that melancholy line never clutched a diploma. Second, there are the restaurants in the larger college towns. Ask their head waiters who are the eaters of lobsters and milk, or cherries and ice cream. Then look over the provision bills of the restaurants to which the average city clerk gives his noonday patronage. How many times is "a cup of coffee and a piece of hot mince pie" the sole sustenance of an ambitious young man in business? Until these matters are investigated, as well as the mere prevalence of indigestion in the colleges, the student, as a class, should not be slandered.—[*N. Y. Evening Post*.]

BOOK REVIEWS

The American Year-Book of Medicine and Surgery for 1903.—Arranged under the editorial charge of GEORGE M. GOULD, A. M., M. D. In two volumes—**General Medicine and General Surgery.** Philadelphia, New York, London: W. B. Saunders & Co.

This Year-Book is not an indiscriminate collection of extracts clipped from any and every journal; the matter is carefully selected, edited, and in numerous cases commented upon by the well known authorities whom Dr. Gould has enlisted as his assistants. Every new theory and scientific discovery worthy of the consideration of the profession has found a place in this unusually complete Year-Book, and the names of the several editors are sufficient guarantee of a proper discrimination. The volumes are sold separately if desired. As usual the illustrative feature is well taken care of, there being eleven full-page inserts, besides many excellent text-cuts.

Therapeutics of Infancy and Childhood.—By A. JACOBI, M. D., LL. D. Third edition. Philadelphia and London: J. B. Lippincott Company, 1903.

Unlike most medical writings of the day Jacobi's great book has an individuality of style as marked as its author's personality. It is truly personal, intensely so. The man, the teacher, talks to his colleague, his student, directly, familiarly; with egoism, if you please, but never egotism. He has no mock modesty, but neither is he vainglorious. He is strong in knowledge, firm in judgment, keen in observation, pointed in expression. He knows what he wishes to say, and he says it so that it sticks. He then clinches it with an illustration or an argument drawn from his long and broad experience. The discussion of artificial substitutes for mother's milk is illuminating. The author traces for us—perhaps unconsciously—the prodromes, development, acme, and slow—alas too slow—decline of what we might term laboratoryism among physicians in general and pediatricists in particular. Jacobi approves the theory, the scientific ideal, of accurate individual mixture of components for a given infant's food, but not the practice of having the prescription written and filled by "the barmaid in charge" of the factory's dispensing shop. He points out the necessity of giving infants sufficient water, therefore he dilutes the cow's milk well, increasing the total quantity proportionately. And he adds cereals—thus, oatmeal or barley water—to supply necessary elements in nutrition. Of "expectant treatment" he says: "My responsibility is not lessened by my busying myself with subcutaneous injections of brandy when a collapse has set in, which I ought to have foreseen and prevented, or with giving digitalis when on the fifth or sixth day of a pneumonia the pulse is flying up to 160 or 200. Anybody can perform that sort of perfunctory expectant treatment extending from the first call to the writing of a death certificate. Many a case might be saved by a few grains of digitalis or a few efficient doses of camphor or musk if administered in time." To those who do not wish to interfere with a whoopingcough because it finds its natural termination after several months he says: "That is true, but many of the children also find their natural termination during these months." The book is a treasury of good advice; it is replete with the lessons of skill and method in diagnosis, of practical experience in treatment. It teaches a rational empiricism based on profound appreciation of all the facts of science, and especially of the relations and relative weight of laboratory investigation and of bedside study. Etiology is the keynote. The third edition is rewritten, enlarged, brought abreast of the times, but never departs from the historic path of age-long wisdom.

Atlas and Epitome of Diseases of the Mouth, Pharynx, and Nose.—By Dr. L. GRÜNWARD, of Munich. Second edition. Edited, with additions, by JAMES E. NEWCOMB, M. D., of New York City. W. B. Saunders & Co., 1903.

Perusal of this little volume is a distinct mental pleasure. Its conciseness without sacrifice of clearness and thoroughness, as well as the excellence of text and illustration are commendable. The illustrations are copious, and with the exception

occasionally of the tints in the colored plates, especially where cartilage is represented, good. The subject arrangement of the text is based upon pathologic processes instead of regions, and while this does not permit of as ready reference, it is perhaps more scientific and makes more pleasant systematic reading. Pathology is given ample attention and space, and therapy is sound and modern. Particularly good are the general considerations as to the maintenance of health and prevention of catarrhal disorders. The book maintains a nice balance between the scientific and the practical, and is a distinct and valuable addition to the armamentarium of the worker in rhinologic fields, be he expert or tyro.

A Textbook of the Diseases of the Ear.—By Professor Dr. ADAM POLITZER, of Vienna. Edited by MILTON J. BALLIN, Ph.B., M.D., and CLARENCE L. HELLER, M.D. Fourth edition. Lea Brothers & Co., 1903.

The German original has been thoroughly revised and brought up to date by the distinguished author, and the translation was made by men who worked with Politzer for some time in the capacity of assistants, and were therefore thoroughly in touch with his ideas and habits of thought and work. An added advantage is that the translation was read by the author, who expresses himself as much pleased with it, so that it can be fairly taken as being a full and accurate expression of his ideas. It is pleasing to note that our American co-laborers are given credit for their work, and while naturally European authors are the more freely quoted, yet American otologists are not neglected. The book should be in the hands of every otologist, as it is unequalled in elaborate and scientific minuteness, and it is as easy to conceive of working without a head mirror as without having at hand a copy of this masterpiece of otologic science and practice. The publishers have done their work well in giving us a clear type on good paper and handsomely bound.

A Manual of Otology.—By GORHAM BACON, A.B., M.D., with an introductory chapter by CLARENCE JOHN BLAKE, M.D. Third edition. Lea Brothers & Co.

This little manual is essentially for the use of the beginner or the general practitioner who needs guidance in his otologic work. While it can be read with interest by the specialist it is of almost too elementary and rudimentary a character to be of much value to him. Bacon's book is clear and concise, and as regards treatment rather conventional; it contains a number of short illustrative case histories. The cuts in the main are satisfactory, although several of Gray's antiquated plates are used. One is disappointed in finding but the briefest notes on leukocytosis and lumbar puncture, when attention has been called to both of these subjects in the preface as being new to the present edition. Among the newer instruments Burnett's modification of Ziegler's otoscope is ignored, as well as the very useful little practical manner of anointing the end of the otoscope before introduction, in order to facilitate the securing of an airtight connection. The various operations for the cure of catarrhal deafness are described, but we are glad to say strongly condensed. The section on the mastoid is clear and full. For the purpose for which the book was evidently intended it should answer admirably, and that it has is evidenced by the fact that the present edition is the third in four years.

Photographic Atlas of the Diseases of the Skin.—Parts XI, XII, XIII, XIV, XV, XVI. By GEORGE HENRY FOX, M.D. J. B. Lippincott Company, Philadelphia and London, 1902.

These, the concluding parts of Dr. Fox's Photographic Atlas of the Diseases of the Skin, contain 47 portraits of various cutaneous diseases, and are fully up to the high standard set in the previous parts. Among the more important affections shown are *dermatitis herpetiformis*, several varieties of *eczema*, *lichen ruber*, *trichophytosis*, *lepra*, *mycosis fungoides*, *psoriasis*, and *dermatitis exfoliativa*. The author does not seem to us to have been altogether happy in his selection of a case of *dermatitis herpetiformis* for illustration, since the face is much less frequently affected than the trunk and extremities and the

eruption in this situation is much less characteristic than elsewhere. The plates representing *psoriasis exfoliativa* and *dermatitis exfoliativa* are especially fine; we can recall nothing finer in the way of pictorial representation of cutaneous diseases. The descriptive text accompanying the excellent portrait of *mycosis fungoides* seems to throw some doubt upon the diagnosis of the case from which the portrait was made, since it is stated that at the autopsy, made in a distant city, the *lepra bacillus* was found: This the author explains by supposing either a subsequent infection, or a mistake upon the part of those making the autopsy. A considerable portion of the text is devoted to the consideration of the therapeutics of skin diseases. We note that the author advises extraction of the hairs as a useful procedure in ordinary *sycosis*. This has always seemed to us an exceedingly barbarous treatment, a remnant of the days of the *calotte*, a remedy much worse than the disease. In our experience just as favorable results may be obtained much less painfully by frequent shaving. In the section devoted to the consideration of *pityriasis* we are told that "the *pityriasis rosea* of Gibert, the *pityriasis maculata*, *circinata*, and *marginata* of Vidal and Duhring, the *pityriasis simplex* of older writers, and most cases of so-called *eczema seborrhoicum*, or *dermatitis seborrhoica* . . . are simply clinical forms of one disease." The so-called *eczema marginatum* is regarded as a variety of *pityriasis*, and is described under the name *pityriasis marginata*. These statements are so entirely at variance with the teaching of today that they should not be allowed to go unchallenged. There is no demonstrable relationship, clinically or pathologically, between *eczema seborrhoicum* and the *pityriasis rosea* of Gibert, and the presence of the *trichophyton* has been so often demonstrated in the so-called *eczema marginatum* that the parasitic nature of this affection can no longer be doubted. For those who do not have the opportunity to study diseases of the skin upon the living subject this Atlas will be of great value, since the portraits are well chosen and beautifully executed.

The Nose and Throat in Medical History.—By JONATHAN WRIGHT, M.D. Published by Lewis S. Matthews & Co., St. Louis, Mo.

There can be but one opinion as to this book. The reader is filled with wonder, gratitude, admiration and respect; wonder at the vast amount of trouble that Dr. Wright has gone to in order to secure his facts, gratitude that he has collated so much of historic interest from the highways and byways of medical lore, admiration for the willingness to give up the vast amount of time that only the intensest love of his profession could prompt a man to grant, and respect for the thoroughness, logical presentation and careful culling which is everywhere in evidence. Back of all this one cannot fail to appreciate the breadth of education which must be an essential part of the author's equipment, for without this such a task would have been impossible. The book is a broad and thorough, yet succinct, account of the development of the armamentarium, anatomy, pathology and therapeutics appertaining to the parts of the body falling within the field of the rhinolaryngologist. It is difficult to resist the temptation to quote, but should one yield to this temptation the quotations would be limited only by the size of the book. While comparatively small the book is truly monumental, and should be in the hands of every worker in the field of laryngology who aims to be anything more than a skilled mechanic. It is regrettable that the publisher has not put into the type and bookwork the same care and elaborateness that characterizes the work of the author.

Diseases of the Eye: A Handbook of Ophthalmic Practice.—By G. E. DESCHWEINIZ, M.D., Professor of Ophthalmology in the University of Pennsylvania, Philadelphia, etc. Fourth edition. Pp. 773. Cloth, \$5.00 net; sheep or half morocco, \$6.00 net.

In the new fourth edition of this popular handbook the text has been thoroughly revised, and the entire work has been reset. Many new chapters have been added, such as Thomson's Lantern Test for Color-blindness; Hysteric Alopecia of the Eyelids; Metastatic Gonorrhoeal Conjunctivitis; Grill-like Kera-

titis (Haab); the so-called Holes in the Macula; Ocular Signs of Diseases of the Sphenoid and Antrum; Recurring Oculomotor Paralysis; Conjunctivitis Petrificans; Educative Treatment of Strabismus; Divergence-paralysis; Convergence-paralysis, and many others. A large number of therapeutic agents comparatively recently introduced, particularly the newer silver salts, are given in connection with the diseases in which they are indicated. The illustrative feature of the work has been greatly enhanced in value by the addition of many new cuts and six full-page chromolithographic plates.

The New International Encyclopædia, Vol. VII.—Dodd, Mead & Co., New York.

The chief articles upon medical subjects in this volume are:

Excretory System	Fever
Exercise	Filaria
Expectoration	Filth-disease
Eye	Fish as Food
Facial, Nerves, Neuralgia, and Paralysis	Fœtus
Faith-cure	Food
Fallopian, and F. Tubes	Foot
Fast	Foot-rot
Fatigue	Forceps
Fats	Foundling Hospital
Favus	Fowl Cholera
Femur	Freckles
Fermentation	Frostbite

Omitted or not cross-referenced are:

Fontanelle	Formalin
Forearm	Facies
Formaldehyd	Extrauterine

Exanthemas is cross-referenced to *Fever*, but there is no mention there of the subject. *Excision* deserved a cross-reference to *Amputation*. *Fatness* is not referred to *Obesity*, and *Fetus* is not referred to *Fœtus*. *Exophthalmic Goiter* should have been chosen as the proper title instead of *Basedow's Disease*. Under *Explosives* no mention is made of the medical significance of the term, and under *Fish as Food* there is no account of *Fish Poisoning*. Under *Expert* there is no account of the highly important medical aspect of the subject and no reference to *Medicolegal*. *Mathematic Exhaustions* are treated to exhaustion, but the physiologic types are not held worthy of a word. The *Magnetic Field* is spoken of, and the *Field of View in Microscopy*, but no hint of the physiologic *Field of Vision*. There is a capital article on *Food*. *Faith-cure*, of course, must get three columns.

BOOKS RECEIVED.

[Prompt acknowledgment of books received will be made in this column, and from time to time critical reviews will be made of those of interest to our readers.]

Laboratory Textbook of Embryology.—By CHARLES SEDGWICK MINOR, LL.D. (Yale), D.Sc. (Oxford), Professor of Histology and Embryology in the Harvard Medical School. With 218 illustrations, chiefly original. Price, \$1.50 net. P. Blakiston's Son & Co., Philadelphia, 1903.

Surgery of the Head.—By BAYARD HOLMES, B.S., M.D., Professor of Surgery in the University of Illinois, Professor of Clinical Surgery in the American Medical Missionary College, Chicago, Attending Surgeon the Chicago Baptist Hospital. D. Appleton & Co., New York, 1903.

The Concise Obstetric Book: Designed for Systematic Recording of Obstetric Work.—Published by the Systematic Record Publishing Company, Detroit, Mich.

Manual of Bacteriology.—By ROBERT MUIR, M.A., M.D., F.R.C.P. (Ed.), Professor of Pathology, University of Glasgow, and JAMES RITCHIE, M.A., M.D., B.Sc., Reader in Pathology, University of Oxford. American edition (with additions), revised and edited from the third English edition, by NORMAN MACLEOD HARRIS, M.B. (Tor.), Associate in Bacteriology, Johns Hopkins University, Baltimore. With 170 illustrations. The Macmillan Company, New York, 1903.

A Practical Treatise on Materia Medica and Therapeutics.—By ROBERTS BARTHOLOW, M.A., M.D., LL.D., Professor Emeritus of Materia Medica, General Therapeutics, and Hygiene, in the Jefferson Medical College of Philadelphia, formerly Professor of Materia Medica and Therapeutics and of the Practice of Medicine in the Medical College of Ohio, etc. Eleventh edition, revised and enlarged. D. Appleton & Co., New York and London, 1903.

Cutaneous Blastomycosis.—A Summary of the Observations of JAMES NEVINS HYDE, A.M., M.D., and FRANK HUGH MONTGOMERY, M.D., Rush Medical College, Chicago.

The Surgical Diseases of the Genitourinary Organs.—By E. L. KEYES, A.M., M.D., LL.D., Consulting Surgeon to the Bellevue and the Skin and Cancer Hospitals, etc., and E. L. KEYES, JR., A.B., M.D., Ph.D., Lecturer on Genitourinary Surgery, New York Polytechnic Medical School and Hospital, etc. A revision of Van Buren's and Keyes' Textbook. With 174 illustrations in the text and 10 plates, 8 of which are colored. D. Appleton & Co., New York and London, 1903.

AMERICAN NEWS AND NOTES.

GENERAL.

Smallpox, as officially reported in the United States from December 27 to March 27, amounts to 12,744 cases and 379 deaths, as against 25,574 cases and 739 deaths for the corresponding period of last year.

Hospital Benefactions.—NEW YORK CITY: Mrs. A. A. Thomas and her two children have presented \$50,000 to the Manhattan Eye, Ear, and Throat Hospital for the endowment of a new ward to be known as the Samuel Thomas Memorial Ward.

The Samuel D. Gross prize of \$1,200 will be awarded January 1, 1904. This prize is awarded every five years to the writer of the best original essay on surgical pathology or surgical practice founded upon original investigation. Candidates must be American citizens.

Congress of American Physicians and Surgeons.—At the sixth triennial session to be held in Washington, May 12, 13 and 14, 16 societies of specialists will be represented, and the attendance will doubtless be very large. The session will convene May 12 at 3 p. m., and in the evening Dr. W. W. Keen, president of the Congress, will deliver an address and will later receive the delegates at the Arlington Hotel.

Improvement in the Plague Situation at Mazatlan.—At the present writing there have been no deaths from plague and no new cases reported. In view of the fact that the number of plague cases have greatly diminished of late, the authorities of Laredo, Tex., have decided not to enforce the rigorous quarantine which has heretofore prevailed. Persons can leave and enter this port after 48 hours under observation and careful disinfection. It is confidently expected that within a very short time the pest will be entirely stamped out.

Leprosy in Hawaii.—It is stated that a plan proposed by the sub-committee of the Senate on the Pacific Islands that visited Hawaii last year for the establishment of a national leprosarium on the island of Molokai is meeting with determined opposition from the inhabitants. The Legislature has even passed a remonstrance, which is expected to influence the President against the measure. Some even urge the complete abandonment of the colony planned, claiming that leprosy is gradually subsiding with the progress of civilization, better hygiene, etc. On the other hand those in favor of the leprosarium claim that within certain limits leprosy is a curable disease. Hence the necessity for a leprosarium where the disease can be promptly and scientifically treated.

Miscellaneous.—MARION, OHIO: The late Dr. Elizabeth L. McMahon, of this city, has left \$8,000 to found a scholarship in Vassar College for the daughters of deceased physicians. FAULKLAND, DEL.: Dr. Louis Heisler Ball, who was recently elected to the United States Senate, is said to be the second physician in active practice to become a member of that body. ST. PAUL, MINN.: Dr. Justus Ohage has been reappointed health commissioner of the city for a term of four years. BALTIMORE, MD.: The University of Maryland Medical School will receive a sum aggregating \$25,000 from the estate of the late Dr. William H. Crim. MILWAUKEE, WIS.: It is reported that Dr. G. V. Brown, a dentist of this city, will act as a representative of the American Medical Association and the National Dental Association at the International Medical Congress to be held in Madrid, Spain.

EASTERN STATES.

An epidemic of grip is reported at Yale University. It is said there are between 200 and 300 cases among the law students.

Anticigaret Bill.—A bill which makes it a misdemeanor to sell cigarettes to any person under 21 years of age and provides for a fine of \$100 to 300 for violations has passed the Pennsylvania Legislature.

Deathrate of Massachusetts.—The deathrate of Massachusetts has shown a steady decrease for the last ten years. According to the State Board of Health, all the conditions are changing for the better and the mortality from tuberculosis and infectious diseases also shows an encouraging decrease. The improvement is attributed to the coming of sound, healthy immigrants.

State Boards and Commissions.—According to the biennial report of the Connecticut State Board of Charities recently presented to the General Assembly, the board has visited 90 institutions, including the State Prison; 11 county jails, reform and industrial schools; 14 institutions for the insane, including those under private management; schools for the feeble-minded, the deaf and blind; 18 hospitals, 8 county temporary homes for children, and 30 private homes and asylums for children and old people. As a general rule these institutions were reported to be in good condition.

NEW YORK.

St. John's Riverside Hospital.—The Cochran Surgical Pavilion, an addition to the St. John's Riverside Hospital at Yonkers, N. Y., was formally dedicated March 21. The building is three stories in height and is said to be one of the best equipped in the country.

Relief for Incurable Cancer.—The Women's Committee having in charge the work connected with the Dominican Cancer Hospital, New York, have planned to establish a country home for the relief of afflicted patients. They make an appeal to the public for funds to assist in this charitable work. Contributions should be sent to Mrs. M. M. Alphonsa Lathrop, Rosary Hill Home, Hawthorne, West Chester county, N. Y.

Appropriation Asked for a New Bronx Hospital.—The Board of Trustees of the Fordham Hospital, New York, have asked for an appropriation from the \$500,000 authorized by the Hennessey bill, so that a site may be secured and plans drawn up for a new hospital for the borough of Bronx, with a view to securing its construction before the lease of the present Fordham Hospital expires. This hospital is a small emergency institution containing only 44 beds, and is declared to be entirely inadequate to care for the sick of a steadily increasing population.

Contagious Disease Hospital for New York.—Ground was recently broken for a new Contagious Disease Hospital, to be erected at Sixteenth street and the East river, New York City. This hospital, which will cost \$350,000, is the first one to be built on the plan of Dr. Lederle of the Department of Health to provide for cases of contagious disease. Hospitals on North Brother's Island are being repaired, and with the additional hospitals in the different boroughs, the sick suffering with contagious diseases will be more adequately provided for than ever before in the history of the city.

The Late Dr. T. Gaillard Thomas.—At a meeting of a committee appointed by the Medical Board of the New York Infant Asylum held March 30, 1903, the following resolutions were adopted:

WHEREAS, The late Dr. T. Gaillard Thomas for several years and at the time of his death was consulting obstetrician of the New York Infant Asylum, and president of the Medical Board, an office in which he exhibited wise counsel and charming geniality; and

WHEREAS, Dr. Thomas was a man of great eminence, well known to the medical profession throughout the world, by virtue of whose character and renown much honor was reflected upon this institution; therefore

Be it resolved, That the Medical Board of the New York Infant Asylum record the death of Dr. Thomas with a sense of deep regret and inexpressible loss; and further

Be it resolved, That a copy of these minutes be sent to the bereaved family, and to the principal medical journals, and inscribed in the records of the New York Infant Asylum.

PHILADELPHIA, PENNSYLVANIA, ETC.

Whipping of Children Restricted.—A statute which recently became operative in New Jersey makes it a misdemeanor punishable by six months in jail or a fine of \$100 to punish a child to such an extent that its health is endangered.

Sanitary Legislation.—A bill has passed the New Jersey Assembly which prohibits any person who is believed to be suffering from any infectious or contagious disease from appearing in a public street or place, and it also prohibits persons from renting or leasing any building or room that has been infected.

New Frankford Hospital.—A charter has been obtained for the new hospital which is to be erected in Frankford and to be known as the Frankford Hospital. The board of directors will be assisted in superintending and managing the hospital by a woman's auxiliary corps, which is to be organized in the near future. Many civic, beneficial, and industrial organizations in Frankford have offered to contribute to the hospital fund, and others are offering to raise money by holding entertainments.

Smallpox at Stevens Point.—News comes that 21 of the 54 persons in the little village of Stevens Point, near Susquehanna, Pa., were stricken with smallpox before the nature of the malady was discovered. It appears that the disease was brought to the locality by a man who had been working in New Jersey. Returning to Stevens Point he developed what was termed the "itch." No physician was called and many persons in the community were exposed. Later when a doctor was called in the true nature of the malady was discovered.

Erection of Contagious Disease Hospitals.—Governor Pennypacker has approved a bill permitting cities of the second class to acquire grounds outside of the city limits on which to erect a hospital for the care of contagious disease cases. The approval of the bill will enable Philadelphia to have its Municipal Hospital outside of the city limits within any of the adjoining counties, and the authorities in these counties will have no power to stop the location of the Philadelphia pesthouse within their boundaries. It appears that this feature of the bill was not recognized except by a few until after it had passed and been signed by the Governor.

SOUTHERN STATES.

The Texas State Board of Medical Examiners will meet in Austin, Texas, April 20, 21, 22 and 23.

Diphtheria at Norfolk Navy Yard.—It is reported that 20 cases of diphtheria have developed among the 1,500 men stationed at the Norfolk Navy Yard on the receiving ships "Franklin" and "Richmond." Both of the ships have been placed in quarantine, and the men suffering from the disease have been transferred to the naval hospital.

Antispitting Crusade in Washington.—There is a movement under way in Washington for the enactment of a law prohibiting expectoration on the sidewalks. It is made an offense to spit on any sidewalk in the city, and violations are punishable by fine and imprisonment. Policemen are authorized to arrest for the offense any person they see committing it. The law will permit persons who want to spit to step to the curb to do so.

Legislation in Florida.—A bill is now being prepared by the committee on legislation of the Florida Medical Association providing for a general medical examining board, and an earnest effort will be made to secure the passage of the measure. Circular letters have been sent to all the members of the association throughout the State requesting their active cooperation and support in the effort to substitute a central State board of examiners for the district boards provided for under the present system, which has proved to be unsatisfactory in its operation. A similar measure was defeated at the last session of the Florida Legislature largely through the efforts of an irregular so-called medical institute.—[*New York Medical Journal.*]

WESTERN STATES.

Cigarets Barred Out of Wisconsin.—An anticigarette bill has passed the Assembly. It prohibits the manufacture of or the sale of cigarettes or cigarette paper in the State, and becomes operative July 1.

Augustana Hospital, Chicago.—It is reported that a new building will be added to this hospital some time in the near future. It will be a fireproof structure six stories in height and it is estimated will cost \$100,000.

Hospital for Epileptics at Gallipolis, Ohio.—The report of the board of trustees of this hospital, which was recently filed with Governor Nash, severely criticises the former boards of the hospital. Dr. Fuller, the former superintendent of the hospital, will ask for an investigation into the charges contained in this report.

California State Board of Health.—Governor Pardee has formed the new State Board of Health. Its members are Dr. O. Stansbury, of Chico; Dr. Wallace Briggs, of Sacramento; Dr. Martin Regensburger, of San Francisco; Dr. N. K. Foster, of Oakland, and Dr. A. C. Hart, of Sacramento. On March 17 a case of plague was discovered in San Francisco. The patient was a Japanese girl.

Hydrophobia Among Horses.—It is asserted that hydrophobia exists among cattle and horses to an alarming extent throughout Wisconsin. The State Veterinarian has refused to order the killing of any more animals, stating that it would end in bankruptcy to the State, as under the law owners of diseased cattle killed are paid for them. The disease was started by mad dogs that ran through the State.

An antismoke ordinance has been passed by the Chicago City Council. The ordinance requires the department for the inspection of steam boilers and steam plants to pass on smoke devices and plans for constructing steam plants, and also requires the supervising engineer to give the owner of a smoke-making plant such advice and assistance as will in his judgment prevent the emission of dense smoke.

Nottingham Bill.—The measure known as the Nottingham bill, which was introduced into the Michigan Legislature, is designed by its author to raise the standard of examination, and requires graduates to pass examination before the medical board, regardless of the medical college from which they were graduated. It favors reciprocity with other States and raises the standard of entrance into the medical colleges. It is stated that a vigorous protest has been entered against the bill by the students of the three medical colleges of Detroit. These sent a delegation to Lansing to present their protest to the proper committee.

Mortality in Chicago.—According to the Bulletin of the Health Department of Chicago at the close of record hours on Saturday, March 21, there had been registered a total of 679 deaths from tuberculosis, and of 1,455 deaths from pneumonia since the first of the year. During the corresponding period of 1902 the respective totals were 619 from tuberculosis, and 1,095 from pneumonia. These figures show increases of 9.6% of tuberculosis mortality, and 32.8% of pneumonia mortality. And they also show that the excess of pneumonia mortality over tuberculosis mortality—which was 76% in 1902—has risen to 114% this year.

FOREIGN NEWS AND NOTES

GENERAL.

Miscellaneous.—The University of Halle has conferred a gold medal on Professor J. P. Pawlow, of St. Petersburg, for his research on digestion.

Plague in India.—The number of plague cases throughout India is steadily increasing. During the week ended March 14 there were 25,882 cases, as against 25,870 for the week previous and 12,695 cases for the corresponding week of last year.

Plague and Rats.—According to the *Allahabad Pioneer*, of Bombay, the municipal committee appointed to take precaution against the spread of the plague has had to desist from the extermination of rats on account of the violent protest of the native population against the killing of animals, particularly rats. In consequence the committee was compelled to offer a reward for rats taken alive, to confine them and to pay a certain sum for their sustenance until the plague should be combated.

GREAT BRITAIN.

A Sanitary Congress to consider matters of international importance will be held at Bradford, Eng., from July 7 to 11. United States representatives are invited to attend.

Medals for American Nurses.—It is asserted that instructions have been given to issue war medals for presentation to the five American women nurses who served on the hospital ship "Maine" in South African and Chinese waters.

Mistakes in the Diagnosis of Infectious Diseases.—The committee of the London Metropolitan Asylums Board has issued a most interesting report showing the cases of mistaken diagnosis sent to their board's hospitals during the last three years. In 1899 1,583 cases were sent which were not notifiable diseases—a percentage of mistakes of 6.3. In 1900 the number was 1,706, a percentage of 7.9; and in 1901 the number was 2,365—a percentage of 9.2. The percentage on the total cases for scarlet fever, 5.6; diphtheria, 12.8; and typhoid fever 25.5. Among the diseases diagnosed as scarlet fever were measles, rubella, tonsillitis and erythema. Measles was returned as diphtheria in 47 cases, and tonsillitis as diphtheria in 880 cases. Among the cases wrongly certified as typhoid fever were 13 of influenza, 22 of febricula, 9 of bronchitis, and 86 of pneumonia. Of notified cases of smallpox the diagnosis was mistaken in 13% of the cases.—[*Journal American Medical Association.*]

CONTINENTAL EUROPE.

Comparison of the Physicians' and Lawyers' Incomes in Germany.—In Berlin the average income is higher in the legal than in the medical profession. Eight per cent of the barristers and 4.7% of the medical men have incomes from \$3,750 to \$5,000, while 8% of the barristers and 7% of the physicians have incomes exceeding \$5,000.

Paris Academy of Sciences Elects Dr. Koch.—Dr. Robert Koch has been elected a member (associate foreign) of the Academy of Sciences of Paris to fill the vacancy created by the death of Professor Virchow. The candidates voted for were Koch, Agassiz (Harvard), Langley (Washington), and Van der Vaals (Amsterdam). The votes received by each were respectively 26, 18, 6 and 1.

The Tenth Congress of the Polish Physicians and Scientists, which was to meet in Lemberg, Austria, in July, 1903, has been postponed until the same month in 1904, on account of the several international meetings which have either taken place recently or will occur during the current year. Dr. Francis E. Fronczak, of Buffalo, has been appointed delegate for the United States to interest the Polish physicians and scientists in America to take part in the congress. Several have already promised to do so, and out of the 80 physicians of Polish descent here in America it is hoped that at least 10 will travel to Austrian Poland to assist actively in the proceedings.

OBITUARIES.

Robert S. Newton, a well-known alienist and neurologist, died at his home in New York City, March 25, aged 45. He studied at the Eclectic Medical College and the New York College of Physicians and Surgeons, afterward studying and practising in Paris, Vienna, London, and Berlin. In 1892 he received the degree of Doctor of Medicine from the New York University. He was a member of many American and foreign societies, among them the County Medical Society, the Neurological Society, and the Society of Medical Jurisprudence, and was attending physician at St. Mary's Hospital, Brooklyn, and at the Presbyterian Hospital, of which he was appointed class head in diseases of the nervous system. Dr. Newton has often figured as an expert witness at criminal trials.

Walter S. Leaming, of Cape May, N. J., March 29, aged 49. He was graduated from the Jefferson Medical College, Philadelphia, in 1882. He was a member of the New Jersey Assembly in 1888 and State

Senator for the three years following, and was three years president of the Cape May City Council and one year city treasurer.

Charles H. Jones, in Brooklyn, N. Y., aged 85. He was graduated from the Long Island College Hospital in 1899. He served as a captain in the One Hundred and Fourteenth Regiment, New York Volunteers, during the Spanish-American war and was captain of the Third Gatling Battery at the time of his death.

Samuel W. McJunken, in Terrell, Texas, March 8, aged 48. He was graduated from the Medical College of the State of South Carolina, Charleston, in 1875. He was assistant physician at the North Texas Hospital for the Insane and a member of the Dallas Medical and Surgical Society.

John G. Giles, of Athens, Ont., died at the General Hospital in Brockville, Ont., March 12, aged 69. He was graduated from the faculty of medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., in 1860.

Alvin J. Cole, in Fort Madison, Iowa, March 6, aged 65. He was graduated from the University of Michigan, Ann Arbor, in 1860. Throughout the Civil war he served as surgeon of the Fourteenth Michigan Volunteer Infantry.

Herbert McAuley, of Chicago, died at Joliet, Ill., March 24, aged 32. He was graduated from the Kentucky School of Medicine, Louisville, in 1889. He was the organizer of the Chicago hospital corps which served in the Boer war.

James O. Berlin, of Bath, Pa., died at the University of Pennsylvania Hospital, Philadelphia, March 24. He was graduated from the Jefferson Medical College, Philadelphia, in 1874.

Nathan Udell, of Centerville, Iowa, died in Denver, Col., March 6, aged 86. He was graduated from the College of Physicians and Surgeons, Keokuk, Iowa, in 1855.

Norman H. Getman died recently at his home in Richfield Springs, N. Y. He was graduated from the Homeopathic Hospital College, Cleveland, in 1854.

Patrick N. Kelly, of Wabasha, Minn., died at Pine Island, Minn., March 14, aged 46. He was graduated from McGill University, Montreal, in 1884.

D. Gilbert Gordon, of Toronto, Can., died in Baltimore, Md., March 28. He was graduated from the Trinity Medical College, Toronto, Ont., in 1886.

Walter W. Bunyan, in Chicago, Ill., March 16, aged 26. He was graduated from the Northwestern University Medical School, Chicago, in 1901.

Lavoisier H. Gratigny, in Cincinnati, Ohio, March 7, aged 62. He was graduated from the Starling Medical College, Columbus, Ohio, in 1864.

Fostus A. Snear, in Bryan, Ohio, March 10, aged 53. He was graduated from the Cincinnati College of Medicine and Surgery in 1872.

James Douglas, of Jamestown, N. Y., March 22. He was graduated from the medical department of the New York University in 1880.

Charles F. Parker, at Boston, Mass., March 26. He was graduated from the medical department of the University of Vermont in 1883.

Charles D. E. Ball, of Boston, Mass., March 29, aged 45. He was graduated from the University of Maryland School of Medicine in 1880.

Beverly P. Morriss, at Amherst, Va., March 7, aged 80. He was graduated from the University of Pennsylvania, Philadelphia, in 1849.

George Beers, of New York City, March 16, aged 34. He was graduated from the New York College of Physicians and Surgeons in 1891.

Julian H. Jones, in Bradford, Vt., March 3, aged 64. He was graduated from the Hahnemann Medical College, Philadelphia, in 1860.

Frank Fontelle Brigham, in Lynn, Mass., March 10, aged 40. He was graduated from the Harvard Medical School, Boston, in 1885.

G. A. Rebman, in Wrightsville, Pa., March 9, aged 50. He was graduated from the University of Maryland, Baltimore, in 1875.

Almer M. Collins, in Shelbyville, Ill., March 10, aged 58. He was graduated from the Medical College of Ohio, Cincinnati, in 1874.

Albert E. Gangloff, of Pittsburg, Pa., March 12, aged 25. He was graduated from the Cleveland Homeopathic College in 1900.

De Forest Hunt, in Grand Rapids, Mich., March 10, aged 61. He was graduated from the New York University in 1864.

Liberty M. Chilton, in Stanberry, Mo., March 9, aged 63. He was graduated from the St. Louis Medical College in 1877.

Peter Klein, in Detroit, Mich., March 15, aged 89. He was graduated from the Geneva (N. Y.) Medical College in 1846.

Alfred D. F. Donkie, in Chicago, Ill., March 13. He was graduated from the University of Illinois in 1901.

Braxton Banks, in Garner, Wake county, N. C., March 12, aged 50.

G. W. Southworth, at Santa Barbara, Cal., March 17, aged 93.

Harry W. Dorsey, at Hyattsville, Md., March 21, aged 71.

J. Frank Speck, of Washington, D. C., March 25, aged 67.

Kinsman D. Broga, of Oneida, N. Y., March 11, aged 73.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

COMPARISON BETWEEN ABDOMINAL AND VAGINAL SECTION FOR PELVIC DISEASE.¹

BY

C. WILMOT TOWNSEND, M.D.,
of New Brighton, S. I.

This paper includes my observations of 50 or more cases in which I have operated by vaginal or abdominal section. In looking over the figures one is struck by the fact that the mortality for the upper and lower operations is nearly two to one in favor of the latter.

The vaginal sections were made for the most part for the relief of suppurative processes of the tubes and ovaries, whereas the operations by the abdominal route included a number for the removal of newgrowths.

A classification of the operations under the head of the organ operated on or removed follows:

Hysterectomy, 12	vaginal, 7 abdominal, 5—1 death
Oophorectomy, 9	vaginal, 2 abdominal, 7—1 death
Salpingotomy, 13	all vaginal—1 death
Salpingoophorectomy, 8	vaginal, 2 abdominal, 6
Relief of ectopic gestation, 10	vaginal, 4—1 death abdominal, 6

Those cases in which the combined operation was performed are classed under the abdominal route. Considering them by groups we find that hysterectomy was performed 12 times for the relief of the following conditions: Chronic metritis, 1; uterine fibroids, 2; carcinoma of the uterus, 4; puerperal septicemia, 3; prolapse of the uterus, 2. The one fatal case was that of a severe form of puerperal sepsis and the hysterectomy apparently did not affect the result one way or the other. The patient lived for two days after the operation, running a continuous temperature of 106°.

In choosing the route for performing the hysterectomy I found that for sepsis and complete proclitania the vaginal method is much preferable; as in the former group of cases the patient is usually much debilitated by parturition and septicemia and it is very important to avoid the shock of opening the abdomen. The vaginal section save time and provides an efficient means of drainage. In the latter group the age of the patient suggests the lower operation on account of the saving of time and of shock. For uterine fibroids and chronic inflammatory conditions of the uterus so severe as to necessitate an operation I prefer to do an abdominal hysterectomy leaving in the cervix as affording a more perfect pelvic floor.

Oophorectomy for chronic oophoritis and cysts of the ovary demands in almost all cases an abdominal section as affording a more thorough removal of the diseased organ. The two operations through the vagina were for ovarian cyst lying in Douglas' culdesac. The cysts were punctured, pedicles ligated, and were then removed by means of scissors. However, in my opinion, the abdominal method will, as a rule give better results as it enables a more complete removal of the diseased tissue. The one death was due to the untying of a catgut ligature, allowing a large hemorrhage to occur in the pelvis before it was discovered.

Salpingotomy.—The 13 cases reported under this head were all for the relief of pus in the tubes and frequently also in the peritoneal cavity. This is by far the most brilliant field for vaginal section. A pus tube taken early and thoroughly drained through the vagina will heal, and a few months later it will be hardly possible to discover by examination or even by inspection, if the abdomen perchance be opened for some other condition, that the tube ever contained pus. Indeed, the cure is so perfect that the fallopian tube will be able to resume its functions as an oviduct, and normal uterine pregnancy has occurred

¹ Read at the annual meeting of the Richmond County (N. Y.) Medical Society, January 14, 1903.

after such an operation. This really wonderful restoration is consummated as a rule only in early cases. Those of long-continued suppuration will not give such excellent results, but by an operation, comparatively free from danger, we can make our patient so well that she will consider herself cured. The one death in this group was due to shock and sepsis in a patient much debilitated by prolonged suppuration and with an exudate which extended to her umbilicus.

Salpingoophorectomy.—Here again the abdominal route is, as a rule, preferable. In two cases the tubes and ovaries were removed through the vagina, but there is always more or less difficulty in controlling the hemorrhage by ligatures. The abdominal method gives a cleaner and more surgically perfect result.

Ectopic Gestation.—For the relief of this condition six patients were treated abdominally and four by the vagina, with one death from sepsis by the latter method. It seems to me that a very definite rule can be laid down for the treatment of these patients: When hemorrhage from the ruptured tube has ceased and the blood settles in Douglas' culdesac a vaginal section is the proper method of relief; but when active bleeding has not ceased and the blood has accumulated among the intestinal folds above the pelvis an abdominal section, and that only, will avail. I can recall a case in which, after opening through the vagina and drawing out a large quantity of blood, the patient was about to leave the operating-room when my attention was called to her rapidly increasing pulse. I had her returned to the table, rapidly opened the abdomen and found a bleeding vessel above my pelvic packing, which in no possible manner could have controlled the hemorrhage. The vessel was tied and the patient made an uninterrupted recovery.

In view of the cases cited I feel justified in stating that while each operation has its special field neither operation will ever supplant the other. The ease of its performance and the excellent drainage it affords will ever recommend the vaginal route for a certain limited number of cases, but the abdominal method holds in my estimation a superior place in the field of surgery, as it allows a more perfect visual examination and consequently a more finished result.

GUNSHOT WOUND OF ABDOMEN.

BY

R. E. L. BARNUM, M.D.,
of Richland, Ga.

On November 25, 1902, Milton Crump, a negro man, aged 35, received a gunshot wound of the abdomen. I was called in consultation with Dr. C. E. Pickett. The wound was made by a revolver at close range in a hand-to-hand fight. The ball entered the abdomen about one inch above the umbilicus and a little to the right. On introducing a probe it took a downward course pointing toward the right iliac region. The probe passed 1½ or 2 inches through the abdominal parietes, obliquely, before it pierced the peritoneum, then, as a matter of course, the track of the bullet was lost. I advised laparotomy at once. The wound was received about 4 p.m., and by 7 p.m. everything was in readiness for the operation. There was but slight evidence of shock or hemorrhage. The patient was given hypodermically 16 mg. (½ gr.) morphia and .4 mg. (⅙ gr.) atropin. His surroundings were very unfavorable for asepsis. The size of room was about 14x14 feet, with dingy cobweb walls and dirty floor. The bedding was also in a deplorably soiled condition. I had the floor swept and wiped up with a damp cloth. The walls were left untouched. While other preparations were going on, the instruments were being boiled in a kettle on the stove. A clean sheet was spread over a small table upon which were placed the instruments and dressings. The patient was anesthetized by Dr. Pickett, and with the assistance of Dr. W. F. McCurdy the operation proceeded. The abdomen was well scrubbed with soap and shaved, and then washed with bichlorid solution, 1-3,000. Clean towels wrung out of hot water were then placed about the field of operation. The incision was made from a point just beneath the umbilicus in the median line and extended 3½ or 4 inches downward. There was little evidence of hemorrhage in the abdominal cavity, and none whatever of the escape of intestinal contents. The intestines were then thoroughly examined so far as they could be well withdrawn, and no puncture could be found. Not being satisfied with this, the incision was extended 2½ or 3 inches upward to the right of the umbilicus, where the remaining portion of the upper intestine was easily reached. Here were found three ugly wounds of the intestine; two of them being

on opposite sides of the gut, the ball having passed through and through, the other about 6 inches distant and about 2 inches long being longitudinal with the axis of the gut. The upper intestines were found perfectly empty, and on inquiry it was ascertained that the patient had not eaten a mouthful of food since breakfast, an incident very much in his favor. The edges of the wounds were then carefully pared, all shreds and bruised tissues being cut away. They were then closed with a double row of sutures, the Czerney-Lembert stitch being employed. Common black silk sewing thread No. C with round sewing needle No. 5 was used. The intestines were then thoroughly washed with plain hot water and the abdominal cavity well flushed out with the same. The intestines being replaced the abdominal wound was then closed with surgeon's silk, the through-and-through or mass suture being employed. No drainage. A superficial row of sutures was also used to thoroughly coaptate the outer edges. Adhesive strips of zinc oxid plaster were placed over all. The application of iodoform gauze, cotton, and roller bandages completed the dressing. No search was made for the bullet. A second shot was received accidentally in the thigh, the ball entering the anterior aspect, and was found under the skin at the opposite point posteriorly. This was removed by a small incision, which was closed by sutures and dressed aseptically. The operation was completed in about one hour, four hours from the time of receiving the wounds. The patient was then placed in bed, which meanwhile had been replenished with clean sheets, etc. He rallied well from the operation. Next morning his temperature was 101.4°, pulse 90 with good volume. The second day after operation temperature 99.4°, pulse 86. Pulse and temperature continued about the same until the sixth day, when his temperature went to 98.4° and his pulse was 84. No food of any kind was allowed for the first 24 hours. Dressing was changed for the first time on the fifth day, when the wound was found united throughout. The deep row of stitches was removed and adhesive strips reapplied. An occasional dose of morphia had been given to keep the bowels locked. On the fourth day an enema of soapsuds was given, which cleared the lower bowel of a large quantity of fecal matter. On the seventh day no spontaneous movement of bowels having occurred one ounce of olive oil was given, which resulted about 4 p.m. in a good, free, through-and-through movement. After the first 24 hours the patient was allowed soup and milk at stated intervals and kept on a simple liquid diet for about two weeks. The wound was dressed the second time on the ninth day, when the superficial row of sutures was removed. At this time the patient complained of sharp pain at the crest of the right ilium. On examination the bullet was found just beneath the skin. A small incision was made without anesthesia, a No. 38 bullet removed, and the incision closed with a couple of sutures and dressed aseptically. The locality of the bullet accounted for the direction taken by the probe and demonstrated the fact that the patient was in a stooping position and his body almost horizontal with the revolver when it was fired. Neither of the small incisions gave any trouble, both uniting by first intention. At the time of second dressing a small stitch-hole abscess had developed around one of the superficial sutures. This was opened up and thoroughly washed out with bichlorid solution 1-3,000. Adhesive strips were kept on for several weeks and reinforced by pad and roller bandage until union was firm. The patient made a complete recovery and is now engaged at his usual occupation, farming.

This operation, done by the dim light of a smoky kerosene lamp and with the assistance of untrained negroes, is reported to show what results can sometimes be obtained under the most unfavorable surroundings and under the most trying difficulties, and in the hope that it may encourage some other young surgeon, when, like myself, he comes to do his first laparotomy.

ATROPIN POISONING FROM OCULAR INSTILLATIONS.

BY
S. EDITH IVES, M.D.,
of Middletown, Conn.

The patient, a girl aged 5, had internal strabismus. After making a preliminary examination I ordered atropin sulfate, 65 mg. (gr. 1), with distilled water 8 cc. (dr. 2), one drop in each eye three times a day. I saw the patient on Sunday and gave orders for her to return on Tuesday, the drops to have been used as directed. Before she left the office, I instilled one drop in each eye to show the father how I wished it done. On Tuesday the child returned to me, having had altogether six drops in each eye. My first thought on seeing her was that the pupils were not sufficiently dilated for a thorough retinoscopic examination, on which I was depending for determination of the refractive error, as the child did not know her letters. However I retinoscoped her, and during the examination noticed that she was quite restless, pulling at her dress and occasionally addressing her cousin (a girl of 13) as "mamma." I did not think, however, that her condition amounted to anything, so

told the cousin to continue the drops and bring her to me the following day, expecting the pupils to have been fully dilated by that time. In the evening of the same day, Tuesday, the mother of the child came to me in great alarm, saying the little girl was "entirely crazy." I went to the house and found the child in an active delirium. She was in her father's arms, and he had difficulty in restraining her. She wanted to get up and walk around, picking up imaginary articles off the floor, jerking her hands and feet. This condition lasted until seven o'clock the next morning, so that she had active delirium for 12 hours. During the next 12 hours she slept off and on and gradually quieted down.

The mother told me the child had not been herself since her first visit to my office. She was restless, not sleeping at night, so evidently the first instillation of atropin affected her. During the period of poisoning there was no fever and no rash; delirium seemed to be the only symptom. The peculiar feature of the case was that after six drops of the atropin solution in each eye there should not be full dilation of the pupils.

I thought there might possibly have been a mistake in putting up the prescription, but a chemist who analyzed it for me pronounced the drug atropin.

SALIVARY FISTULA CAUSED BY STENOSIS OF THE PAROTID DUCT; OPERATION; RECOVERY.¹

BY
FREDERIC GRIFFITH, M.D.,
of New York City.

Surgeon Bellevue Dispensary; Fellow of the New York Academy of Medicine.

The following is the history of a case of obstruction of Stenson's duct, due to the inflammatory reaction of the soft parts of the cheek to a ragged molar tooth:

The patient, a male of 17, called at the hospital for treatment of a salivary fistula upon the left side of his face. Upon examination I found a well marked sinus which admitted the end of a probe, upward and backward for a distance of about an inch. The probable cause of the sinus was an ulcerated tooth from which he had suffered some six months before I saw him. Saliva flowed continuously from the sinus causing excoriation of the skin of the cheek. Various measures for the relief of the condition had been tried, such as suturing the opening and the application of lunar caustic.

My treatment consisted in carrying out the method suggested by Hayes Agnew, namely, ligation of the sinus within the mouth. With a curved needle, threaded with silk, a puncture was made below the duct, at a point inside the mouth, about opposite that of the opening of the duct upon the right side. The needle was passed onward well in (toward the skin surface of the cheek), then brought out above; the ligature, drawn through, was tied tight and cut short. The new opening cut through during the course of three or four days. The lower sinus had meanwhile closed. A perfect outlet was thus secured for the saliva, within the mouth, and the cheek healed with no indentation, and but little scarring.

TO CUT SURGEONS' BANDAGES.

BY
L. W. SPRADLING, M.D.,
of Athens, Tenn.

Take the whole width and length of a piece of muslin or bandage material, roll it on the table into a tight roll the width of the material; hold the roll in the left hand and cut off end sections of the width wanted with a sharp knife after sticking a pin through the section to be cut, which keeps it from slipping and unwrapping. In this way bandages are already rolled for emergency and do not unravel.

DR. B. H. MCCALLON'S SOLUTION OF STRYCHNIN SULFATE.

Strychnin sulfate . . . . .	.5 gram (gr. 8)
Diluted acetic acid	4 cc. (31)
Alcohol	30 cc. (31)
Mix.	

This solution is permanent and readily miscible and contains 1 mg. ($\frac{1}{100}$ grain) to each drop. It is very convenient and much more active than the tablet method or solutions of the United States Pharmacopoeia.

¹ Presented at the New York Academy of Medicine, Surgical Section, 1903.

ORIGINAL ARTICLES

THE USE OF COMPRESSED AIR TO ENHANCE AND PROLONG THE ACTION OF REMEDIES UPON THE CEREBROSPINAL AXIS: SYNOPSIS OF EXPERIENCES IN APPLYING THE METHOD OVER SIX THOUSAND TIMES.

BY

J. LEONARD CORNING, M.D., LL.D.,
of New York City.

To squeeze within a definition or a formula the significance of some chosen field of human activity, some dignified pursuit or discipline, seems perennially to commend itself to two quite opposite types of mind—to the philosopher, because of its hair-splitting possibilities; to the humorist by reason of its mirth-making opportunities. Even such serious business as the practice of medicine has not been able to defend itself against these warring propensities. Only recently I have been reminded of the humorous aspect of the incursion. Loitering amid the miscellany of a medical publication, my eye was halted by this bit of facetious wisdom: "Neurology is the art of giving sedatives and stimulants!" Shades of Æsculapian propriety! The very proposition made the wits jump; each syllable exhaled a unique fallaciousness. And yet, even extravagance may have its uses. Masked by the cheap clatter of the sophistry, a temperate discernment may find the modicum of truth. Yes, sedatives and stimulants, while but a part, are certainly an important part of our neurotherapeutic resources. So long as, in the management of disease, it shall be deemed worth while to exalt or depress the functions of the nervous system, just so long this tenure is secure. Holding, then, a high place in the regard of the profession, their usage sanctioned by invincible necessity, it becomes a matter of high importance to render their exhibition as secure and effective as possible.

Agreeable to this conclusion, I have sought, in the present paper, to embody in a brief synopsis the results of my investigations and experience with compressed air, as a means of focalizing the action of remedies upon the brain and spinal cord.

Condensed air has been extensively used in the profession to facilitate the introduction of gases, medicated or nonmedicated, by way of the lungs. This, however, was not the purpose I had in mind when, in 1891,¹ I published my first paper on the neurotherapeutics of compressed air. In contradistinction to my predecessors, what I then sought to demonstrate was the possibility of enhancing and perpetuating the effects upon the cerebrospinal axis of certain stimulants and sedatives, when exhibited while the subject remained in air condensed more or less beyond that of the normal atmosphere. As the experiments and arguments brought forward were originally set forth with considerable attention to detail, I cannot do better than recall their more important features.

By proceeding in this fashion—following in some sort the first shaping of the idea—those who read will win, I hope, an appreciation of the position maintained by me without undue strain upon forbearance or attention.

The fundamental proposition of the argument may be thus stated:

The pharmacodynamic potency of certain stimulants, sedatives, analgesics, and probably of all remedies which possess a chemical affinity for nervous matter, is enhanced by exhibiting them (the remedies) in solution or soluble form—hypodermically, by the mouth, or per rectum—

while the subject remains in a condensed atmosphere. And, as a corollary, it may be stated that this increase, this enhancement of the action of the remedy is, within certain limits, in the ratio of the atmospheric condensation.

To express this truth mathematically is not difficult. Thus, when *a* represents the amount of blood of the whole body, *b* the amount of the remedy, *e* the amount of atmospheric compression, and *x* the pharmacodynamic potentiality which we are seeking, we shall then have the simple formula

$$x = \frac{b \times e}{a}$$

A definite conception of the truth of this proposition will, I think, be more readily attained by the presentation of the steps which led me to its discovery.

Let me begin, then, by stating that my attention was attracted several years ago by that unique complex of symptoms known as the "caisson or tunnel disease." As most physicians are aware, the caisson disease is an affection of the spinal cord, due to a sudden transition from a relatively high atmospheric pressure to one much lower. Hence, those who work in caissons or submerged tunnels under an external pressure of two atmospheres or even more are liable to be attacked by the disease shortly after leaving the tunnel. The seizure never, however,

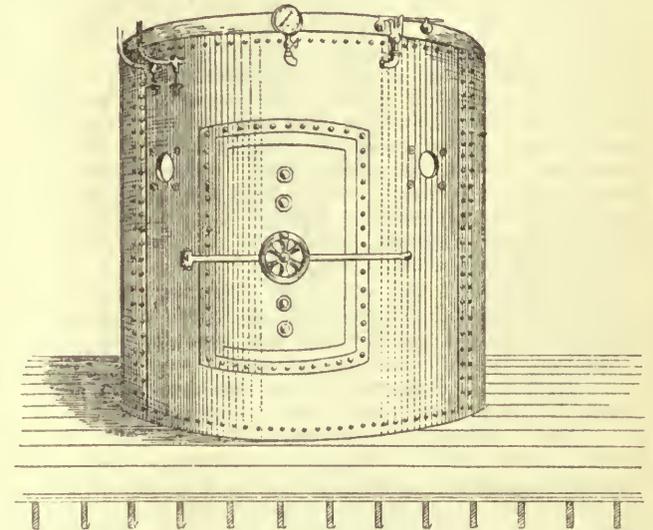


FIG. 1

occurs while the subject is in the caisson, or in other words, while he remains under pressure. Moreover, when the transition from the condensed atmosphere to that of ordinary density is gradually accomplished, which may be done by letting the air escape from the lock very slowly, caisson disease is rarely if ever set up. It is the systematic disregard of this principle by those who work in compressed air that is responsible, or largely responsible, for the occurrence of the disease.

The chief clinical features of caisson disease are pain, which may be relatively mild, as when confined to a circumscribed area of one extremity, or of frightful intensity, as when it appears in the ears, knees, back, or abdomen; anesthesia and paralysis, usually of paraplegic type; bladder symptoms, assuming the form of retention or incontinence; and, more rarely, rectal disturbances (usually incontinence).

These phenomena, or, rather, some of them, appear some time within half an hour after the subject has left the compressed atmosphere. It was while investigating this most interesting affection as it occurred in the course of the construction of the Hudson river tunnel that I was able at the same time to study the effects of compressed air upon the organism, and especially upon the

¹"The Use of Compressed Air in Conjunction with Medicinal Solutions in the Treatment of Nervous and Mental Affections." *The Medical Record*, August 29, 1891. Also amplified in my monograph, "Pain," J. B. Lippincott Company, Philadelphia, 1894.

nervous system, as exhibited in a large number of persons.

Without anticipating, however, let me state that the first thing which impressed me about compressed air was the extraordinary effect upon cerebral and cerebrospinal function.

Those who remain for a certain length of time—not too long, however—in the condensed atmosphere exhibit a most striking exacerbation of mental and physical vigor. They go up and down ladders, lift heavy weights, are somewhat exhilarated, and, in short, behave as though slightly under the influence of a stimulant.

Hardly had I observed these things, which are perfectly well known to those who have been able to familiarize themselves with the ordinary effects of compressed air as used in caissons and submarine works of various kinds, when my attention became attracted by what at first appeared to be a phenomenon of trivial importance. In a word, I observed that some of the men exposed to the effects of the compressed air were more exhilarated by it than others. Upon superficial reflection one might have supposed that this discrepancy in physiologic effect was to be accounted for merely on the basis of constitutional idiosyncrasy; maturer thought, however, convinced me that the exaggerated effects of the condensed air were both too numerous and too constant to be amenable to such an explanation. This led me to study the habits of the men; and thus it was that I arrived at a discovery of real practical value to neurotherapy. Briefly, I found that certain of the men were accustomed, before entering the compressed air, to drink a moderate quantity of alcohol. So long as they remained outside the tunnel, where the atmospheric conditions were normal, they were not visibly affected by their potations. When, however, they entered the compressed air of the tunnel, but a short time elapsed before they became exhilarated to an inordinate degree, acting, as one of the foremen graphically expressed it, "as though they owned the town."

On the other hand, when the customary draught of alcohol was withheld from them, these evidences of motor and mental exhilaration were entirely wanting.

The effects of alcohol, then, are enhanced by exposing the subject to the influence of air condensed to a considerable degree beyond that of the normal atmosphere.

Acting on the hint derived from this discovery, I administered ether, champagne, ammonia, and other stimulants, before exposing the subject to the influence of the condensed air, and invariably observed analogous effects, *i. e.*, palpable augmentation of the physiologic effects of the remedy.

Upon what principle does this augmentation of physiologic effect depend? How is it to be accounted for?

In my opinion, the answer to this question may be given as follows: In the first place, we know that the primary effect of the compressed air upon the organism must be to force the blood from the surface of the body toward the interior, and especially into the cerebrospinal canal. Or to express it more succinctly, the blood will be forced in the direction of the least resistance—that is, into the soft organs enclosed by bony walls, which latter completely shut out the element of counter-pressure. Now, when the bloodstream is freighted with a soluble chemical of some sort—let us say, for the present, with alcohol—this medicated blood will exert its greatest chemical effect where the tension—the pressure—is greatest; that is, in the cerebrospinal canal. The reason for this is found in the fact that endosmosis is most pronounced where the blood-pressure is greatest. This explanation of why the effects of alcohol are enhanced by exposing the individual who has taken it to the effects of a condensed atmosphere will, I believe, appeal to the physiologic conceptions of most medical men. It was the above course of reasoning which, at this stage of the argument, led me to the idea that, just

as the effects of stimulating substances are enhanced by exposing the subject to the influence of compressed air, so inversely sedatives and analgesics, when brought in solution into the bloodstream, either hypodermically or by the stomach, might be greatly enhanced in effect by causing the subject to remain, while under their influence, in a condensed atmosphere.

When I came to investigate the validity of these predictions, as I did shortly after the introduction of antipyrin, phenacetin, and other related compounds, I found my predictions verified, and, indeed exceeded. To summarize the whole matter, I ascertained that not only could therapeutic effects be obtained from much smaller doses by exposing the subjects to the influence of a condensed atmosphere, but, what was of equal interest, I found that the analgesic influence of the remedies was much more permanent, was prolonged, in short, by this mode of administration. With regard to the latter point—the prolongation of the effect of the remedy—there is a notable fact in connection with the physiologic action of compressed air that will help to a rational explanation. It is a matter of experience that the heart beat increases in frequency and the blood-pressure is raised while the subject remains in compressed air. On coming once more, however, into the normal atmosphere the conditions are reversed; the frequency of the heart's action is diminished and there is a notable falling off in the fullness of the pulse. These two factors—decreased frequency of the heart and diminished arterial tension—while asserting their influence throughout the organism, are bound to exert their greatest sway in the realm of the cerebrospinal circulation. The functional efficiency of the brain and spinal cord is especially dependent upon adequate oxidation and elimination of waste products. The evidence on this point—clinical and experimental alike—is overwhelming. Here activity of the circulation, even more than in the muscle, means enhancement of function; while sluggishness is no less certainly followed by decline. And it is worth remembering that this decline of function is contingent upon inadequate elimination of waste no less than upon curtailment of oxidation. These considerations, though perhaps a little aside from the argument, will help, none the less, to an intelligent answer of the chief question: Why are the effects of certain remedies upon the cerebrospinal axis perpetuated beyond the usual by this exhibition while the subject remains in a compressed atmosphere?

Briefly, we have merely to think of the decreased elimination consequent upon retardation of the circulation after the emergence of the subject from the compressed air to realize that the deportation of the medication from the tissues must share in the delay. Allowed thus to linger beyond the ordinary in the field of action the effect of the remedy is proportionately prolonged. I can conceive of no other explanation, and pending the arrival of something better, it may be accepted as the true one.

The Power of Compressed Air to Increase the Effect of Remedies Upon the Cerebrospinal Axis May be Heightened by the Simultaneous Exhibition of Substances Which Dilate the Capillaries.—I desire to draw attention now to a supplementary expedient in connection with the neurotherapeutic use of compressed air, an expedient which experience has taught me is of no little practical value in the management of various morbid conditions of intraspinal or intracranial origin, and more especially of the painful crises of ataxia, intractable insomnia, spinal irritation, melancholy of the simple, nondelusional type; headache, especially megrim, and impairment of memory due to functional causes.

It has long been known to me that when agents which cause relaxation of the capillaries—nitroglycerin, amyl nitrate—are exhibited jointly with sedatives or stimulants while the subject remains in compressed air an increased pharmacodynamic effect ensues, an enhance-

ment over and above that obtainable from the compressed air alone. Nor does the phenomenon stop here, for I have observed that after exit from the compressed air persons treated in this way are under the dominion of the remedy for a much longer time than when treated in the compressed air with sedatives or stimulants, but without the simultaneous exhibition of vasomotor relaxants. This observation I conceive to be of no little practical moment; I have set it down, because again and again it has served me well, and I trust in other hands may do no less.

As to forming a conception touching the *modus operandi* I conceive there need be no embarrassment. We have only to conceive of the retarded blood current in the cerebrospinal organs consequent upon the widening of the vessels to realize that such lethargy must mean a commensurate slowing of the processes of elimination. This means that the medicinal substance will linger longer in the tissues; that its action will be intensified and prolonged.

Certainly in the management of the painful phases of ataxia and spinal irritation the procedure is most serviceable. When we picture to ourselves the artificial lensor caused by this relaxation of the vessels, to which must further be added the sluggishness naturally prevailing in the circulation of the lower cord,¹ we shall then understand why remedies given to influence the sensory mechanism of the cord are enhanced and prolonged in their effects when exhibited with an arterial relaxant like nitroglycerin, while the subject remains in a condensed atmosphere.

The method just described, though not achieving an absolute localization of remedies, certainly *focalizes* their effects. I have used it during the past 10 years upward of 6,000 times, and have never witnessed ill effects of any kind.

But besides attaining in this way to a more effective focalization of remedies upon the cerebrospinal axis, and more especially upon the cord, I have also especially sought to direct their influence upon the contents of the cranium. To give practical effect to the idea I have with appropriate appliances moderately compressed both jugulars, after the administration of a sedative or a stimulant combined with nitroglycerin, the subject remaining meanwhile immersed in the condensed air. This expedient, born of the promptings of pure theory, has been amply justified by the practical event. It has again and again justified the claim that it is a means of subduing a severe attack of megrim. In the management of the lesser sorts of head pain, however, such clamping of the vessels is superfluous.

I am told that I should give a description of the apparatus employed by me in carrying out the various features of the treatment whose advantages have been already sufficiently set forth. Though this has been done with much detail, in my first paper, and still more explicitly in my monograph on "Pain," I suppose to give a practical climax to this writing I really ought to do it again. Not needlessly to expatiate, then, but merely to prod the memory, the apparatus I have made use of may be thus briefly described:

(1) It consists, in the first place, of a cylindrical steel chamber, six feet in diameter and something over that measurement in length (Fig. 1). To this access is had by a heavy door of the same material, hinged at the center and opening inward. A packing of rubber, carried around the edge of this door insures an air-tight enclosure, an accurate coaptation being made easy by means of a cross-bar and screw, as shown in the diagram.

Two port holes, protected by thick glass, give a view of the interior, which is brilliantly lighted by electric lamps. By the aid of a gauge it is possible to be at all times informed of the amount of pressure in the cham-

ber; while an adjustable valve, opening at the predetermined pressure, removes the possibility of accident from carelessness.

The walls of the chamber are hung with light drapery to remove the sense of confinement; and a semicircular couch comfortably cushioned enables the occupant to lie at ease.

(2) Into the chamber the air is driven by a large pump, actuated by an electric motor (two-horse power) (Fig. 2). Both pump and motor are installed in the cellar, and the air is led up by a stout iron pipe. To start or stop the motor, the turn of a switch, located near the chamber, is sufficient.

Pressures of two atmospheres fulfill, as a rule, all ordinary needs.

I have already alluded to the *exceptional* expedient of pressing upon the jugulars. This is done by fastening two small metal cups over the veins and connecting them by means of a narrow rubber tube with a stopcock, which, when opened, places the interior of the cups in direct communication with the external atmosphere. As a result of the difference in density of the air inside the cups and that in the chamber the tissues are both drawn up and pressed upon, whereby a decided venous turgor is produced.

It cannot, however, be sufficiently insisted that com-

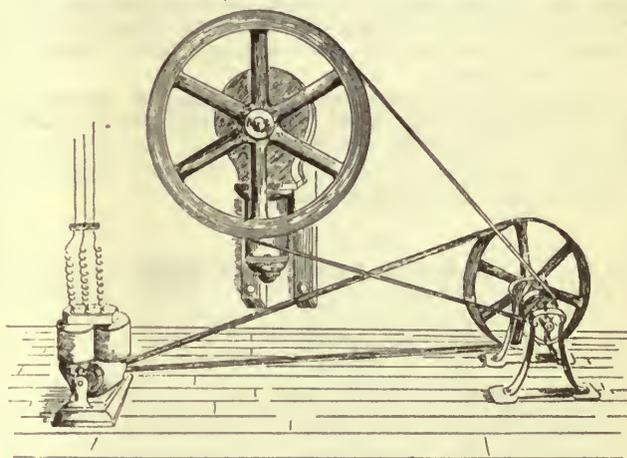


FIG. 2.

pression of the jugulars is an exceptional device, a device invocable in severe intracranial pain only.

Parenthetically, I would remark that the pneumatic principle invoked by me to compress the jugulars is also applicable to all forms of dry cupping, and, indeed, has been so applied by me for years. When, however, such use is intended—and the same may be said of compression of the jugulars—the air pressure in the chamber should be kept low; a concentration of three or four pounds above that of the normal atmosphere being sufficient to cause the cups to cling tenaciously to the integument. It is self-evident that communication is established between the interiors of the cups and the external atmosphere by means of india-rubber tubing carried outward to the small stopcock in the wall of the chamber. The manipulation required is infinitely simple, *i. e.*, (1) to raise the pressure; (2) to adjust the cups—this may be done by the patient or by an attendant with him in the chamber; (3) to open the stopcock, whereupon the cups immediately attach themselves.

CONCLUSIONS.

It has become something of a habit of late among medical writers to append to their papers a formal synopsis of opinion, a kind of ultimate extract of what has gone before. This, we are told, helps to a consistent grasp of essentials, and to that extent lightens the task of the reader.

¹ This lethargy of the circulation in the lower segments of the cord has been alluded to by Brown-Séguard in his papers on paraplegia.

Yielding, then, to the sway of a fashion, amply justified, no doubt, by such a consummation, I would shortly summarize my conclusions:

1. *Limitations of the Method.*—The plan of treatment previously described is of no use whatever in the management of the inflammatory and degenerative conditions of the cerebrospinal axis. True, the painful crises of ataxia may be averted by it, but the progress of the disease is not arrested. Upon such diseases as disseminated sclerosis, spastic spinal paralysis, poliomyelitis, its influence, as one might naturally infer, is nil. In disease of the bloodvessels and all cerebral accidents arising therefrom its use is absolutely counterindicated. Nor is neuritis an affection which lends itself to this mode of treatment, the increased pressure at the surface serving rather to augment than diminish the pain. The same may be said of articular rheumatism, whether recent or of long standing, even an added pressure of a few pounds being sufficient to cause discomfort in an old arthritic joint.

2. *Legitimate Sphere of Application.*—What, then, are the affections in which compressed air may be invoked as a means of focalizing the action of remedies upon the brain or spinal cord or both? Speaking generally, it may be said that cerebral and cerebrospinal affections of a functional character, in which pain, exhaustion, insomnia or depression are prominent features, are the most amenable to this plan of treatment. Here its effects are striking, and indeed, quite beyond those obtainable in any other way.

Finally and causally, compressed air, by increasing the pressure in the renal bloodvessels, gives rise to diuresis. This effect, obtainable from the air alone, becomes exceedingly pronounced when a diuretic is given, even in insignificant doses.

HERNIAL COMPLICATIONS.¹

BY

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Most operators of experience have found in hernial sacs almost any portion or even the entire floating contents of the abdominal cavity. I have found in my own operations for strangulated hernia in the inguinal region, in addition to the commoner contents, bowel and omentum, twice the ovary, once tube and ovary, twice a strangulated sloughing vermiform appendix, and once an adherent vermiform appendix. In one instance a kidney, which was exceedingly movable (after reduction of the mass of bowel), was found at the hernial ring, but did not constitute a portion of the hernia.

In two cases which came under my observation at the Troy Hospital the hernias, which were of the inguinal variety, contained the entire intestinal tract, and in one of these instances a portion of the stomach. These persons had been under observation for some months, and it was known that a large portion of the bowels had been down in the hernial sac in an irreducible way for several years. These patients died from intercurrent troubles, and upon autopsy the exact condition was confirmed. Incidentally, I would say I have knowledge of a case of umbilical hernia in which all the intestines escaped and were only partly reducible.

In a case of ventral hernia, following an operation for an appendicular abscess, all the coils of small intestine were found agglutinated and bound down in the sac, constituting a condition which would make one wonder how the contents ever passed through, and why obstruction did not occur at once. The intestinal coils were reduced

with difficulty, and it was evident that the long absence from their natural quarters had permitted a shrinking of the cavity, which caused a notable crowding of the contents after their return. This patient died three days after operation with all the phenomena of intestinal obstruction.

From the histories of these cases and many others which have been reported, it is very evident that large portions of bowel may escape from their natural quarters and continue for years without interfering particularly with the ordinary physiologic function; whereas one often finds that a small band or adhesion will frequently be associated with very marked discomfort and actual pain, and is more prone to become the seat of obstruction than in the former condition.

An unusual circumstance to which I desire to refer more particularly is one with which I was not familiar:

On July 5, 1900, I was asked by Dr. Hanratta, of Watervliet, N. Y., to see a patient whose condition he had diagnosed as strangulated inguinal hernia, requiring immediate operation. The left side of the scrotum presented a large tumor, contracted in its center, giving it an hour-glass shape. The upper part of the mass was tender, sensitive on manipulation, the lower part not so tender. The upper portion was hard and resisting; the lower elastic, evidently containing fluid. I suggested to Dr. Hanratta that the case was probably one of strangulated hernia complicating a hydrocele. The patient was sent to the Troy Hospital and in the afternoon of the same day I operated upon him.

Operation.—The ordinary incision was made, rather liberally; the hernial sac well exposed and opened, a small quantity of bloody serum escaping. Between 7 and 8 inches of small intestine was found within the sac tightly grasped and devitalized. The hernial ring was well divided, adhesions liberated, and the intestine drawn down into the wound until healthy portions presented. The entire gangrenous bowel was resected and an end-to-end anastomosis made with a Murphy button, reinforced with mattress sutures of very fine silk. The hernial sac was clamped with a pair of ordinary artery forceps after reduction of the bowel, and an investigation made of the remaining mass, which evidently contained fluid. A rather close examination failing to determine its exact identity, a small incision was made 1 cm. in length, permitting the escape of between 5 and 6 ounces of clear urine. The moment the incision was made and not until then did I suspect that we were dealing with the urinary bladder; and in order to satisfy myself that it was actually the bladder, I explored its interior with my finger and found that the bladder had escaped into the scrotum in its entirety. This was clearly seen by those present—Dr. Hanratta, the attending physician; Dr. William Kirk, my first assistant, and others. The mucous membrane of the bladder was healthy, the escaping urine was of clear amber color and of normal odor. The bladder was sutured with No. 2 plain catgut after its thorough evacuation. Considerable difficulty was experienced in effecting its reduction, but after more or less prolonged manipulation and continuous pressure with gauze sponges the whole organ slipped back into its normal position below and to the inner side of the hernial sac. The wound was closed partially with silkwormgut sutures and the unclosed portion packed with iodoform gauze. Instructions were given to pass a catheter every hour for the twenty-four hours immediately following the operation. A good quantity of urine was secreted and no pain or discomfort experienced.

History.—The patient had had a reducible hernia for about 10 years and never wore a truss. The hernia invariably came down in an erect posture and assumed a fair size. He could effect its reduction in a standing position and it always disappeared on lying down. On the morning of July 4, after being about the house for a short time, he found that his hernia caused him some pain, and its reduction could not be accomplished as on former occasions. Considerable colicky pain ensued during the day. He laid down, kept quiet, made ordinary pressure, but without success. He made several unsuccessful attempts to evacuate the bowels, and toward morning in straining at stool, he felt that the mass had suddenly increased very materially and the pain correspondingly. He sent at this time for his physician (Dr. Hanratta) for the first time, and the doctor recognizing the importance of the case, secured surgical assistance as soon as possible. Attempts at urination from this time on were frequent, but not more than a few drops were passed. Vomiting became frequent, there was moderate abdominal distention, paroxysmal pain and all the evidences of obstructed bowel.

The history of this case points very strongly to the fact that the entire bladder had descended into the scrotum from the severe muscular straining made in attempting to move the bowels.

The *British Medical Journal* for October 24, 1896, contains a report by W. Thelwell Thomas, F.R.C.S., under

¹ Read before the New York State Medical Society, January 20, 1902.

the title, Two Complicated and Unusual Hernias, One Containing Bladder, the other the Fallopian Tube.

B. T., aged 50, admitted to the Royal Infirmary for a strangulated hernia. The rupture had become strangulated 24 hours previous to admission to the hospital, the swelling was large, tense and irreducible.

Operation.—Sac exposed, looked like figure 8, the upper part was whiter than the lower and tightly nipped by the internal ring, and a loop of small intestines three inches long reduced, and the sac separated from the larger part lower down, and drawn up "a la MacEwen." The larger swelling clearly contained fluid which pressure could reduce into the abdomen through the usual place for a direct hernia, quite half an inch of the back wall of the inguinal canal intervening between it and the reduced hernia. A tiny puncture was made in it and a stream of ammoniacal urine poured out. The edge of the puncture was clamped and a catheter passed through the urethra which emptied the bladder and this pouch. After dissecting off a portion of the transversalis fascia which was stretched across the posterior wall, the finger could be introduced into the abdomen, but outside the peritoneum which was now detached toward the pelvis to prepare a place for the herniated portion of the bladder. A continuous Lembert suture closed the puncture in the bladder, and after reducing the hernia, the fascial covering alluded to was ligated as one would the peritoneal sac of a hernia in Czerny's operation, and the redundancy cut away. One remarkable feature of this very interesting case was the existence of a hernia for 25 years, disappearing on lying down; during the last five years the rupture was present when he awoke in the morning and disappeared on urinating.

Rose¹ reports a case of inguinal hernia associated with hernia of the bladder in a young woman of 24 who had a reducible hernia. Urination was often painful and sometimes not performed for from 24 to 36 hours, during which time the swelling increased. The bladder was opened and sutured with fine catgut, the patient recovering.

Curtis² attributes the frequency of wounds of the bladder to the altered methods of operating for hernia. The attempts to effect a radical cure necessitates complete dissection of the neck of the sac in order to ligate it, and for this reason the bladder is more apt to be injured, the tissues of the herniated bladder being recognized with difficulty.

Three varieties of bladder hernia are distinguished anatomically, according to the relation of the peritoneum to the bladder. 1. The extraperitoneal, in which the bladder lies wholly without the hernial sac. 2. The pariperitoneal, in which it lies partly within and partly without the hernial sac. 3. The intraperitoneal, in which the bladder lies fully within the hernial sac.

Hernia of the bladder has been known to exist ever since Sala, master and friend of Bartholini, sounded a man for stone in 1520 and failed to find one, but post-mortem examination showed it to be in a pouch of the bladder in the inguinal canal.

Macready found 51 cases recorded, and ferreted out 59, the greater majority being of the inguinal variety. This form of hernia is, however, quite rare, and the diagnosis surrounded with considerable difficulty; so that the condition is not usually considered until shown to exist on the operating table. Many surgeons have injured the bladder during operation accidentally, or have cut into it prior to recognizing what it was.

During operation the bladder may be recognized by the unusual amount of prevesical fat. The appearance and position of the bladder may be decidedly misleading; the wall of the bladder may be stretched so that its identity would be impossible. In about 40% of hernial operations the bladder was recognized before injury. In some the bladder was not seen until it was wounded—in others the injury was not recognized at the time; in quite a large percentage it was taken for the hernial sac, and in others for a cyst. In my own case the bladder resembled an independent cyst and on manipulation the size of the mass remained unchanged. The bladder was covered with a layer of fat—the bladder wall was nor-

mal in thickness, and its presence was unsuspected until an incision was made allowing the escape of the contents, about 200 cc. of urine.

My object in reporting my case is on account of the keen realization of the necessity of operators keeping constantly before them the possibility of such a complication. That such a condition occurs frequently is not at all appreciated, and in looking up the literature of the subject I have been astonished to find that while a goodly number of bladder hernias have been reported there are very few instances in which the entire organ had slipped out of its normal quarters.

Most of the cases reported have been instances in which only a portion of the bladder was included in the hernia, and very often formed no part in the hernial mass. Under the latter condition the organ lying in close proximity to the hernial sac, being included with the sac in the ligature, has frequently escaped notice and been injured. The recognition of the bladder is a matter of very great importance, and should not be surrounded with particular difficulty in instances in which its presence is suspected. The almost invariable presence of the fatty covering, which was a distinctive feature in my case; the origin of the cyst or sac traveling, as it always will, through the hernial ring; and the almost invariable possibility of emptying the cyst, particularly when the entire bladder is not prolapsed, should lead to its ready detection.

CASE OF BUBONIC PLAGUE, WITH EXHIBITION OF THE BACILLUS.¹

BY

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While in Honolulu, in September, 1902, I learned that for some months previously sporadic cases of plague occurred chiefly among Hawaiians in widely scattered portions of the city. Three such cases occurred during my short visit, and it is highly probable that the annual number is greater for the reason that unless the disease is serious the poorer class does not seek professional advice, and if recovery ensues, such cases are not reported to the health officers. As will be observed by examination of the statistics, all of the reported cases were fatal. During the present year plague occurred in the Cape of Good Hope, Hongkong, Japan, Mexico, New York and other places. Between January and September of the year 1902, 5,550 deaths from this disease occurred in India. For the week ended December 6, 1902, 12,400 deaths were recorded, as against 12,039 for the previous week, and 8,878 in the corresponding week of 1901. These facts show that plague is largely increasing in India.

Between December, 1901, and September 9, 1902, 10 cases of plague were reported to have occurred in the Philippine Islands, of which 9 were fatal. From December 11, 1901, to November 18, 1902, 40 deaths from the plague occurred in the Hawaiian Islands.

Between December 11, 1901, and November 18, 1902, 38 cases of plague were reported to have occurred in San Francisco, Cal. Recently new cases are reported in Honolulu, and three cases were brought to Swinburne Island, in New York harbor, by a ship from Durban, South Africa.

The widespread distribution of this disease, which is

¹ London Lancet for July 28, 1894.

² Sajous' Annual, for 1896, p. 164, sec. C. B. F.

¹ Read before the Pathological Society of Philadelphia, February 12, 1903.

favored by the close communications now existing between all parts of the world, together with the recent acquisition of the Philippine and Hawaiian Islands and the occurrence of this disease in Mexico, San Francisco, and New York, adds new interest to the study of this disease by physicians of the United States.

The case that I wish to relate is that of a native Hawaiian woman, aged 60, rather small in stature, who fell ill six days before her death. During the first three days of her malady she was without medical assistance, and when first visited no satisfactory history was obtainable. It was learned that she had been suffering from the symptoms of fever. Her temperature when first examined was 105° F., pulse about 130, tongue heavily coated, breath offensive, delirium moderate, and the abdomen tympanitic.

Upon the fourth day of the disease the temperature was 105° F., the delirium became more marked, and the abdomen more distended. In the left inguinal region an enlarged lymphatic gland was discovered, which was moderately painful. On the fifth day the temperature rose to 106° F., and the inguinal gland was slightly larger.

A diagnosis of plague was made, and the following day the temperature rose to 108° F., with a corresponding rapid pulse. The left inguinal gland was about the size of a hen's egg. No other symptoms were noted by the attending physician, and the patient died a few hours subsequently.

Through the kindness of Dr. J. T. MacDonald, of Honolulu, I was invited to assist at the autopsy, which was held two hours after death. The cadaver was still warm, and there was no rigor mortis. The body was rather small, more especially the upper and lower extremities and the neck, and the emaciation of these parts was in striking contrast to the remarkably enlarged and protuberant abdomen, upon the walls of which could be seen the cicatrices produced by former pregnancies. The skin was of a normal dark hue, and of a color common to the Hawaiian. In the left inguino-femoral region there was a small swelling produced by a moderately enlarged inguinal gland a section of which measured one inch by three fourths of an inch, and presented a whitish-gray appearance. This gland was partially disintegrated and softened, and a smear preparation showed numerous plague bacilli. The tissues surrounding the enlarged gland were edematous, and the serum flowed freely from the incision, but was not blood-stained, as has been so frequently observed in rapidly fatal cases of plague. Excepting one or two enlarged glands in the right axilla, no other glandular enlargements were discovered, nor was anything of importance noted in the thoracic or abdominal cavities, excepting the presence of an enlarged spleen measuring 4 inches by 2½ inches, and upon section presented a mahogany-brown appearance. A thermometer placed in the center of the spleen registered 109° F.

An autopsy of a rat that was found in the house in which this individual lived revealed no enlargement of the spleen nor of the glands. The lungs showed no inflammatory changes, and the bacteriologic examination gave negative results. A careful inquiry failed to show the exact manner in which the patient had become infected.

The occurrence of isolated cases of plague in the various portions of the city of Honolulu during the summer of 1902 has caused the health officers considerable concern, and the fact that these cases are not found in one particular quarter of the town, but on the contrary are scattered all over, leads them to believe that this malady is widely disseminated. It is more than probable that this disease was imported into Honolulu from China.

In most cases of plague that have occurred in Hawaii, the clinical diagnosis is based upon the existence of fever, adynamia, delirium, and enlarged lymphatic glands, and the existence of an endemic or epidemic in the community. The diagnosis is considered to be established when the plague bacillus is discovered in the liquid removed from an enlarged gland by means of the Pravaz syringe, or when found in the urine, sputum or feces. The cultural peculiarities are considered diagnostic, and the successful inoculation of mice, rats, or guineapigs often establishes the existence of the disease in doubtful cases. The mortality among the natives of Hawaii is very great, and all the cases thus far reported have been fatal, but it is probable that in many of the milder cases the patients recover without having been reported to the Board of Health.

The prognosis is particularly unfavorable when the plague bacillus is found in the blood, especially if the number of bacilli are greater in each succeeding examination. When a number of bacilli are included within

the leukocytes in the fluid obtained from a bubo, the prognosis is considered to be more favorable.

The physicians in Honolulu were unable to give any definite opinion as to the effects of Haffkine's inoculation. In India, during the month of October, 1902, 120,000 people were inoculated with the antiplague serum, which should go far toward determining its value. The inoculations were temporarily suspended because of the unfortunate occurrence of 17 deaths from tetanus, probably due to contamination of the serum employed.

The specimen under the microscope is a smear preparation from the enlarged inguinal gland already described. It was stained with anilin and showed an enormous number of short, thick, cocco bacilli with transparent centers and round ends. The bipolar portions are deeply stained. Certain of the microorganisms appear to be encapsulated, and a few are seen within the leukocytes.

AMYOTROPHIC LATERAL SCLEROSIS IN A BOY OF 15 WITH A HISTORY OF ACUTE ANTERIOR POLIOMYELITIS IN INFANCY.¹

BY

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The disease which is known under the name of infantile spinal paralysis or acute anterior poliomyelitis we usually consider as one in which the paralysis, the amyotrophy, the secondary deformities and the arrest of development in the affected limbs are confined to a certain portion of the body and remain there during the entire period of life.

When the myelitic focus is replaced by a cicatrix the patient is left with irremediable infirmities which, however, have no influence upon the duration of life nor upon the integrity of other portions of the cord. This is the rule. Nevertheless there are exceptions. We are now in possession of a certain number of facts which prove that the presence of an old myelitic focus, though healed up, is not an indifferent factor for the future of the patient so far as his spinal cord is concerned. On general principles a *locus minoris resistentiæ* can be a point of departure for new inflammatory processes either in the old injured place or in the immediate vicinity, or at a distance in the same cord. A concussion, circulatory disturbances, infectious diseases, exposure, trauma, are all factors for awakening an old extinguished focus.

That the acute symptoms of anterior poliomyelitis after a long interval of a few or many years may repeat themselves in the portions of the body previously affected is well known, but that the acute poliomyelitis may be followed by other diseases of the cord is a fact not altogether frequent, as the cases on record are comparatively few. Among the spinal diseases following spinal infantile palsy, progressive muscular atrophy is the most frequent. The perusal of the meager literature on the subject shows that the spinal diseases recorded made their first appearance a great many years after the initial symptoms of anterior poliomyelitis, consequently in adult or in middle life (Dutil, Ballet, Langer, Laehr, Charcot, Hirsh and others).

The case that I am about to report is of a special interest from this point of view. It occurred at a very early age. After a typical onset of infantile palsy at the age of one year, the disease remained typical until the age of eight, when a series of infectious diseases developed. Shortly afterward gradual loss of weight and strength was noticed. Still later two fractures occurred in one of the affected limbs. The two circum-

¹ Read, and patient exhibited, before the Philadelphia Neurological Society, December 23, 1902.

stances gave probably an impetus to the old diseased focus, with the result that the same pathologic process spread considerably and involved also the pyramidal tract.

The latter fact makes the case still more unusual, because if progressive muscular atrophy was reported, amyotrophic lateral sclerosis was reported only in one case, that of Hirsh.¹ The case I report presented *ad*

vitam a typical amyotrophic lateral sclerosis. The postmortem examination showed vast degenerations of the white matter between the cornua, besides the cornua themselves.

Two more points deserve our attention. The majority of cases of progressive muscular atrophy present the well known Aran-Duchenne's type, in which the small muscles of the hands are first affected. Our case presents the scapulohumeral type of Vulpian and Déjerine.

The second and last point of importance lies in the fact that the patient sustained two fractures of the right humerus, both in the same place, after a

trivial accident. The occurrence of two fractures in a limb affected with an infantile palsy, and the long process of healing (four months), is an indication that there is a defect of solidity dependent evidently upon a disturbed state of nutrition of the bony tissue, probably of the same origin as the muscular atrophy. As a matter of coincidence (perhaps more) the patient presents a large thyroid gland.

Our case is therefore one of amyotrophic lateral sclerosis with an atrophy of scapulohumeral type developed at a very early age in a patient who presents symptoms of an old acute poliomyelitis.

The case is as follows:

P. R., aged 15, was addressed to me through the courtesy of Dr. Saltzman, with the following history: When he was a little over a year old he became suddenly ill; fever, vomiting and diarrhea were the main symptoms. So soon as the fever, which lasted about 10 days, subsided, the parents noticed that the infant would not move his right arm and left leg, which soon became totally paralyzed. At the age of 5 he commenced to walk. Since then his general health was good until the age of 8, when he had measles and whoopingcough. Since then he became weaker, lost in weight and strength. Shortly afterward he sustained a fracture in the middle third of the right arm. It took about four months before a permanent callus was formed. About three years ago a second fracture occurred in the place of the old callus. It is interesting to state that both fractures took place after a trivial accident, while tying his shoestrings he stepped on them and fell. The paralysis which occurred in infancy remained confined to the two limbs and never improved. He was compelled to use the unaffected arm, and thus became lefthanded. This fact is significant, because under the circumstances we should expect if not a compensatory muscular hypertrophy at least well developed muscles.

Patient presents a normal height with an average intelligence. The two limbs which were primarily affected present a total flaccid palsy with a deformity of the foot (equinovalgus). The muscles in the lower extremity are contracted. The muscles of the right upper limb are almost totally atrophied; the hand on the same side has preserved some muscles. The scapulohumeral region, the supraspinatus and infraspinatus muscles are markedly wasted. The trapezius, however, is well preserved. The left lower extremity, which was primarily

paralyzed, presents also marked wasting. The muscles of the thigh, however, are not yet totally destroyed, although the difference in the size with the thigh of the opposite side is striking; the adductors are particularly flabby.

The interesting fact to notice is that the atrophy did not remain limited to the paralyzed limbs. The left upper extremity became invaded. The scapulohumeral region, the supraspinatus and infraspinatus, the triceps, the extensors of the forearm, the first interosseous space, and only to some extent the thenar and hypothenar are involved. The biceps is apparently preserved, but owing to the fact that the patient uses only the left arm and hand we should rather expect a biceps of larger size. The left scapula is very much receding from the thorax. The power of the left hand is below normal. The muscles of the thorax are also strikingly atrophied. There is a slight scoliosis toward the left. The right lower extremity is apparently normal as to size and power. However, the plantar arch is reduced to quite a marked degree.

The electric examination gives the following result: To faradism the right upper extremity does not respond at all. On the left the biceps and deltoid show some diminution of reaction, but much less response is obtained for the triceps, extensors, flexors of the forearm, muscles of the thumb, supraspinatus and infraspinatus muscles. On the left lower extremity the muscles of the thigh give an exaggerated response, no response whatever on the muscles of the leg and foot. On the right lower extremity is noticed a diminished faradic reaction for all the muscles. The muscles of the thorax present also diminished faradic reaction. The trapezeii muscles are normal on either side.

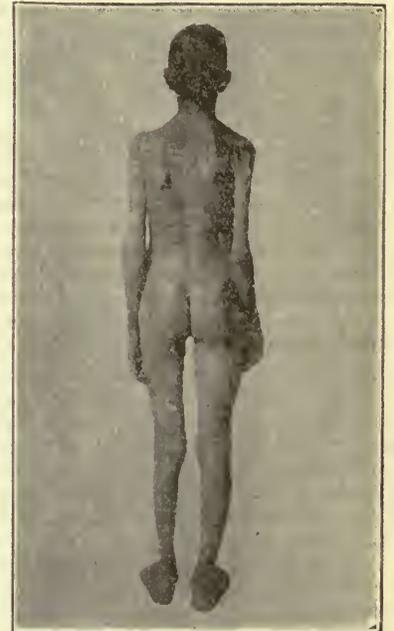
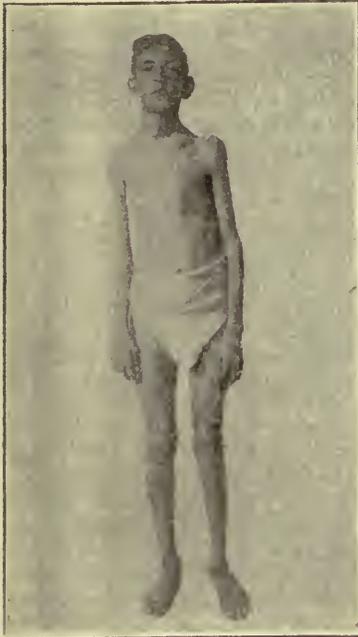
The examination with the galvanic current gave the following result: No response for the right upper extremity and the muscles of the scapula on the same side. On the left upper limb the deltoid and biceps give a weak reaction, but no reaction of degeneration. The triceps presents distinct reaction of degeneration, the extensors of the forearm, the thenar and hypothenar muscles present a much diminished irritability, the flexors are normal, the muscles of the scapula present the cathodal closure contraction equal to the anodal closure contraction. The pectoralis muscles on either side present also the cathodal closure contraction equal to the anodal closure contraction. On the left lower extremity no response for the muscles of the leg and foot, diminished response for the muscles of the thigh. The right lower limb presents also diminished reaction for some muscles, but the majority are normal.

The reflexes are as follow: The patellar, Achilles', cremasteric, abdominal are all exaggerated, more on the right than on the left. On the right upper extremity no reflex could be obtained, except Bechterew's, which is obtainable only in one spot. On the left upper limb Bechterew's reflex is exaggerated, also that of the biceps. The triceps reflex is entirely lost.

Babinski's reflex is distinct on the right side, doubtful on the left. No ankle clonus on either side. In addition to the atrophy and exaggerated reflexes the atrophied muscles present fibrillary tremor and increased mechanical irritability. The test for sensations to all the three forms (touch, pain, and temperature) gave negative results. At no time did the patient complain of pain. The sphincters are normal. He complains of occasional attacks of shortness of breath and difficulty in swallowing. These symptoms developed within the last year. Finally, it is interesting to notice that the thyroid gland seems to be enlarged. The family history of the patient is negative. He was born at term and delivered normally.

I wish to thank Dr. J. O. Arnold for the patient's photograph.

Vacancies in the Army.—There are over 40 vacancies in the junior grade of the medical department of the Army. An examination of candidates to fill these positions will be held in April. The first class to be examined will report at the Army Medical Museum, Washington, April 20.



¹Am. J. N. and M. Dis., 1899.

THE INFLUENCE OF ALTITUDE ON THE MORTALITY OF PNEUMONIA.¹

BY

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Pneumonia is a serious and common disease, attacking all ages and all walks of life, and despite the progress of therapeutics, is as fatal now as it was several decades ago. There have been some epidemics, if I may call them so, reporting a low deathrate and, from time to time, different methods of treatment have been put forth to lower the mortality, such as digitalis, antipneumonic serum, creasote, and the salicylates—but they have been attended with little or no success. We know when called to treat a patient that we cannot tell the outcome, and in any acute disease in which statistics prove that one in four die, any light, however feeble, thrown on the treatment of this condition either from drugs or climate is of interest. The popular impression among the profession generally and especially among those at sea-level is that this disease at high altitudes has a higher deathrate than elsewhere, and this is especially true among the laity, even in Colorado, their general impression being that it is practically fatal. For example, how often do we hear when called to the bedside of a patient suffering from influenza or bronchitis, "If I have pneumonia, doctor, I want to be sent at once to a lower altitude." With this opinion I was surprised to find on coming to Colorado Springs, several years ago, that the mortality, both in private and hospital practice, was no higher than, say, in Philadelphia, London, or Vienna. This impression has become a conviction, and for further proof I wrote a circular letter to the hospitals throughout the State, asking for statistics, and while not at all striking they bear out my general statement. I have taken hospital statistics instead of those of individuals, and consequently of private practice, for, while it is hardly fair to the disease, for we know there is a greater fatality in hospital practice, they are the only means of absolute and accurate comparison.

Through the kindness of Dr. A. A. Stevens, of Philadelphia, the following are the statistics from St. Agnes', the German, Episcopal and Pennsylvania Hospitals of Philadelphia for the past two years: Of a total number of 221 cases there were 58 deaths, giving a mortality of 26.2%. Osler puts the mortality of the Montreal General Hospital of 1,012 cases at 20.4%; New Orleans Hospital, 3,900 cases, mortality 28%. In the Massachusetts General,² during the past decade, there were 1,549 cases, with 172 deaths, making 31.3%. Albutt, with a record of 434 cases, gives a mortality of 25.5%. Taking these together to obtain a general average of the hospital mortality of pneumonia throughout the world, or at a low altitude, we have a total number of 6,116 cases, 1,640 deaths, making a percentage of 26.8. Of course it is impossible to get anywhere near this number of cases in Colorado, but the number reported is sufficiently large for a fair percentage. However, I do not want to appear dogmatic in my assertions, for I realize the fallacies when 700 cases are compared with 6,000, and until we can obtain statistics from several thousand can we gain a satisfactory conclusion?

The statistics from Denver, altitude 5,000 feet, for the past two years, taken from St. Joseph's, St. Anthony's and St. Luke's Hospitals follow: Of a total of 132 cases, they report 38 deaths, with a percentage of 28.7. Of St. Francis' Hospital, Colorado Springs, altitude 6,000 feet, statistics for the past two years, 66 cases, 17 deaths, 25.7%.

Of the D. & R. G. R. R. Hospital, at Salida, altitude 7,000 feet, 16 cases, 2 deaths, 12.2%. St. Mary's Hospital, Pueblo, altitude 4,800 feet, 120 cases, 32 deaths, 26.5%. Of Cripple Creek, altitude approximately 10,000, of 375 cases collected personally by Dr. B. F. Cunningham, the mortality was 18%. The latter are not hospital statistics, but they were collected during the winters of 1894, 1895 and 1896, when the Cripple Creek district had no hospital, when most of the patients were in shacks, with no nursing or hygienic surroundings, and were men, the majority of whom were alcoholics, so the objection can hardly be raised that they were from private practice, or that the surroundings were favorable. Taking these together, we have a total number of 709 cases of pneumonia, 157 deaths, with a deathrate of 22.1%, at an average altitude of 6,600 feet, against a percentage of 26.8 at sea-level. The following table may be of interest:

City.	Altitude.	Cases.	Deaths.	Percent.
Pueblo.....	4,700 ft.	120	32	26.5
Colorado Springs.....	6,000 ft.	66	17	25.7
Denver.....	5,200 ft.	132	38	28.7
Cripple Creek.....	10,000 ft.	375	68	18
Salida.....	7,000 ft.	16	2	12.5
Average.....	6,580 ft.	709	157	22.1

City.	Cases.	Deaths.	Percent.
Philadelphia.....	221	58	26.2
Montreal.....	1,012	207	20.4
New Orleans.....	3,900	1,092	28
London (Albutt).....	434	111	25.5
Massachusetts General.....	549	172	31.2
Average.....	6,116	1,640	26.8

The reason for this, I think, lies in a number of conditions. It has been proved by Herrera and Loupe that living at an altitude, say of 6,000 feet, respiration and heart's action are slightly increased. Dr. Maurice Kahn, of Leadville (altitude 10,000 feet), in a paper before the Colorado State Medical Association, states that in 100 cases examined he found a pulse-rate of 76.5%. Owing possibly to the rarity of oxygen the lungs are larger, expansion is increased, and there is a greater interchange of air. The heart is normally stronger, with possibly a certain amount of hypertrophy. Some keen observers in Colorado have decided that the right side of the heart is increased in size and contractile power by living at a high altitude. And if this supposition is true it may help to account for the lowered mortality, for as is well known so much depends on the integrity of the right heart in pneumonia. Then, too, we live more of an outdoor life. These conditions, taken together, obviously give a stronger activity of life, an increased metabolism, hence a greater resistance to toxins, which more than counteracts the possible lack of oxygen. Respiration after all is only one factor in the disease and not the most serious at that. A contributing condition may lie in the fact of this being a comparatively recently settled country, and hence fewer old people. Then we have few of the large factories so common in the east where large numbers of people are confined for eight or ten hours a day. On the other hand, Colorado is a health resort for many tuberculous persons, and they, in their proportion, suffer from pneumonia, which manifestly is more fatal than in the robust. Certainly a man with active tuberculosis, with lowered vitality, or one with but one lung left and half of it affected, with a pneumonic consolidation, has very little chance against this disease. This, I think, above all else, has caused the belief that pneumonia is more fatal here.

I know full well there is a line of demarcation as we ascend in altitude where pneumonia is certainly more fatal than at sea-level, but statistics must be obtained

¹ Read before the El Paso County (Colo.) Medical Society, June, 1902.

² Statistics collected by Dr. Edward F. Wells, in the American Medical Association Journal.

from other countries and at an altitude higher than 7,000 feet to reach any definite conclusions. This I have been unable to do, and while I grant that cases occurring in new arrivals (those not acclimated to the temporary increase of the heart's action), and the occurrence of such cases is rare, pneumonia has a high deathrate. In those who are acclimated, the disease is no more fatal, and in fact, by the statistics I have presented, it seems manifestly less so at an average altitude of 7,000 feet than at sea-level.

THE PRESENT-DAY MORTALITY OF PNEUMONIA.¹

BY

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In the ancient history of disease no subject received more careful description and study than pneumonia. The physicians of antiquity, of Grecian, Roman, and Arabian nationality, set forth their knowledge of the pneumonia of that day in descriptions filled with many interesting conceits and queer observations. In the writings attributed to Hippocrates and Aretaeus, among the symptoms mentioned we find these: "The tip of the nose is turned up;" "the white of the eye has a greasy luster," and others as curious, while the diagnosis "is made by the coating of the tongue." For many decades greatest confusion reigned with reference to pneumonia; in fact, pleurisy and pneumonia were not really differentiated until 1819, when Laennec pointed out these distinct and separate diseases, and to him is due the classification of the stages of pneumonia at the present time accepted as correct. However, through all the writings of history this fact is constantly set forth, though statistics are not given, that pneumonia is a deadly disease.

So great a factor in the deathrate has pneumonia become, and so rapid and terrible is its brief course, that I have deemed its consideration not an unprofitable pursuit. At the outset, I wish to comment upon two facts which have a direct bearing on this question of pneumonia mortality. First the advances of science have, during the last decade, raised the average of life in the United States 4.1 years. In the decade ending at 1890 the average life length was 31.1 years, while in the decade ending 1900 the average length was 35.2 years, a marked and gratifying increase. Second, the "great white plague" or tuberculosis, which up to recent date has exacted, of all diseases, the greatest toll of human life, even to one-seventh of the world's mortality, is conceded to be now on the decline. This may be explained by the worldwide fight which has been made recently against its progress: for the universal interest in civil, social, and scientific circles, as manifested in international conferences of scientific men, in popular education of the masses, and in State, municipal and private grants of large sums of money for the study, prophylaxis, and treatment of this erstwhile captain of death, has begun to have a most gratifying effect upon mortality tables. Now, pneumonia, as a swift destroyer, has appeared, according to the latest statistics, proving itself man's most formidable enemy, yielding to no other in the number of its deaths, and certainly effecting this end with swiftest brevity. Indeed, may not this ancient disease, treated through the ages with only this grave statistic result, justly claim the sober consideration now accorded it by the profession?

According to the Vital Statistics Report of the registered area of the United States in the *Twelfth Census Bulletin* of August 20, 1901, pneumonia holds leading place in the death column, having been the cause of death in 1900 in 55,296 instances, *i. e.*, 191.9 persons in

100,000 population. This fact is borne out in various particular localities, which I will cite to establish this point. In the report of the Department of Health of Chicago we find that between 1851 and 1890 there were 25,719 deaths from pulmonary tuberculosis and 16,577 deaths from pneumonia—that is, more than 35% excess of pulmonary tuberculosis deaths. Between 1891 and 1901 there were 22,957 deaths from pulmonary tuberculosis and 25,228 deaths from pneumonia, making an excess during this last decade of 9% in deaths from pneumonia. In the same report we find that in the decade 1861–1871 deaths from pneumonia formed 3% of the deaths from all causes; in the two succeeding decades it formed respectively 5% and 6.7% of the total deaths. In the last decade, 1891–1901, the proportion rose to more than 10% (10.2) of the total deaths from all causes. In Massachusetts also we find a great increase in the deathrate from pneumonia, it having risen from 7% to 8% in the late 70's to 9% and 10% in the last decade. In Rhode Island and Connecticut we find a similar increase in the pneumonia deathrate, and doubtless, as says the editor of the *Journal of the American Medical Association*, were the figures available we would probably find a corresponding increase throughout the Northern Atlantic and Lake States. In Virginia for the year ending May 31, 1900, there were 25,252 deaths from all causes; of this number there were 2,429 deaths from pneumonia—that is, about 10% of all deaths. In Richmond, Va., there were 2,523 deaths from all causes during the year ending May 31, 1900, and of this number 239, or 9.4%, were due to pneumonia. In order to explain this mortality I shall set forth some of the influences which seem to aid the occurrence of pneumonia: One of the chief factors operating as a recent causal agent may be the great fourth pandemic of influenza. It began, as Osler says, "October, 1899, in some of the distant provinces of Russia and by the November following it had reached Moscow. By the middle of November Berlin was attacked. By the middle of December it was in London, and by the end of the month it had invaded New York and was rapidly distributed over the entire Continent." Accordingly in the following year the pneumonia deathrate in Chicago doubled its former rate and throughout the entire country there was a marked increase in its mortality. Another factor in this increase of pneumonia fatalities may be the lessened deathrate of the newborn and infants from intestinal diseases. Many infants kept alive in delicate health may rapidly succumb before childhood is over to pneumonia. At the other end of life the number of aged lungs, sudden changes of weather, and exposure to atmospheric and microbic dangers may render the aged ready victims to pneumonia. The common use of alcohol in excess, the rheumatic and gouty diatheses of modern life, the concentration and overcrowded conditions in the cities, the dusty and filth-laden air of the city streets, all may tend to increase the deaths from pneumonia.

According to the latest authorities pneumonia is classified as an infectious disease, due to the pneumococcus of Fraenkel, in at least 95% of cases, the remaining 5% being accredited to other germs, namely, streptococci, Pfeiffer-bacilli, the pneumococcus of Friedländer. Fraenkel's pneumococcus is nonmotile; occurs in pairs, oval or lancet shaped; surrounded by a capsule of a substance like mucin. It grows in alkaline culture media, with or without oxygen, at a temperature of 35° to 38° C. Its life is self-limited in any medium in four to five days; however, in the dry state it possesses great latent virulence for a long time, especially when fostered in desiccated sputum.

In order to establish the communicability of this germ I will cite a few notable epidemics:

Tyson tells of a ship's crew of 815, of which 410 were attacked by pneumonia in rapid succession. Before the epidemic had subsided 720 had had the disease, and the appalling number of 298 had perished.

¹ Read before the Richmond Academy of Medicine and Surgery, November 11, 1902.

Dr. Cunningham, of Alabama, at the last meeting of the American Medical Association at Saratoga, reported a series of epidemics which had occurred during the last 15 years among prisoners under his charge.

In 1886 Darlington had 105 patients among laborers living in adjoining huts. In 1888 in Middleborough, England, 367 cases of pneumonia occurred in a population of 40,000. The history of epidemics in foreign prisons, garrisons and armies, and in native asylums, institutions and boarding schools, is too extensive—suffice it to say that pneumonia is an infectious and communicable disease, modified and influenced by such predisposing factors as age, sex, race, former attacks, unsanitary living, exposure to cold, occupation, rheumatic diathesis, anesthetization by chloroform or ether, and surgical operations.

Passing by the history of the treatment of pneumonia by blood-letting, blistering, tartar emetic, veratrum viride, calomel in large doses, by elimination of toxins, by the use of oxygen, care of the heart by stimulants and antipyresis, we take up that neglected phase of the question—prophylaxis. Dr. N. S. Davis, Jr., in a recent article, makes this pertinent inquiry in discussing this subject: "But is the medical profession altogether free from blame for its (pneumonia) prevalence?" And later he says: "Prophylactic measures have not been enforced as they should have been." Public education and professional teaching of the masses, followed in the masterly fight of the latter years against the increase of tuberculosis, may well be repeated in the fight that should be made against the further increase of the deathrate from pneumonia. As in pulmonary tuberculosis it must be not so much in the remedial measures as in the prophylactic agencies that we shall find the greatest results.

In the sick room the physician must intelligently teach its dangers and its preventive measures to the attendants. In the training school for nurses he must expound the truth of its deadly communicability and its successful prevention. He must advocate such laws of public sanitation, in regard to location, ventilation, disinfection of dwellings, as will best prevent the spread of this disease.

It should be the special care of the profession to guard the aged and protect infants from the prevailing evil conditions that so quickly cause them to succumb to this disease. With professional forethought in the treatment of influenza to avoid any lung complication, wise precautions in the administration of general anesthetics in the performance of surgical operations, and the most careful sanitary and aseptic measures in the treatment of patients with pneumonia, much will have been done toward lessening mortality.

In this day of medical enlightenment and the retrogression of fatality and frequency of all other infectious diseases, a masterful inactivity in the prophylaxis of pneumonia will but take from our day and time the glory of its wonderful progress. While if these seemingly overacting measures of prevention be adopted much will be done to annihilate the germinal cause, check the fatal progress and protect the stronghold of all future health against the devastating inroads of pneumonia.

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A new laboratory for the examination of drugs and medicine has been established by the National Government in the Bureau of Chemistry at Washington. Lyman F. Kebler, of Philadelphia, who was appointed chief of the laboratory, entered upon his duties March 1.

TETANUS.¹

BY

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In 1884 Nicolaier described the bacillus of tetanus, and in 1889 Kitasato obtained it in pure culture. It is one of the most poisonous of known bacteria. The bacilli, when not in spore formation, are long and slender and have rounded ends. They are motile and seldom united in chains. At the temperature of the body they form spores, and when in spore formation there is an enlargement at one end of the bacillus, in the center of which there is a bright round spore. They have no flagella, and while in spore formation they are non-motile. They stain with the ordinary anilin dyes and by Gram's method.

It is a common, saprophytic organism and is found in garden earth, dust, especially of stables, and sometimes in the intestines and discharges of animals. It is difficult to isolate and grows only where oxygen has been displaced. Kitasato's method of obtaining it in pure culture is the one generally used. It consists of heating the cultures to 80° C. for an hour at a time. This is sufficient to kill all contaminating organisms, but does not kill the tetanus spores, which may be subsequently cultivated under suitable conditions. The cultures all have a peculiar, rather characteristic odor.

Verneuil has observed that tetanus rarely occurs at sea, and when it does it occurs on vessels carrying hay or dirt. Ledantec has noted the fact that the natives in the New Hebrides poison their arrows by dipping them in clay rich in tetanus bacilli.

The bacillus generally gains entrance into the body through a punctured wound or an open one that has been badly soiled. The period of incubation is from 7 to 28 days, and during this period the wound may heal and not be found on examination. Men, horses, mice and rabbits are very susceptible to this bacillus, while dogs and birds are but slightly so. Amphibians are immune, but frogs may be infected if the body temperature is raised.

The bacillus grows at the site of inoculation, but does not enter the blood-current and is very rarely found in the body. Its growth is most rapid and but few bacilli are required to produce a most powerful toxin. The following experiments need no word of comment:

Kitasato inoculated the tail of a mouse, and an hour later tail, skin and subcutaneous tissue about the root of the tail were cut away. In spite of this the mouse died of tetanus.

Nocard took three sheep and put under the skin at the root of the tail of each a splinter of infected wood. When the first symptoms appeared he cut off the tails of two of the sheep, keeping the third as a control. All three died of tetanus.

Mice may be killed by injecting into them the blood, urine, or cerebrospinal fluid of animals affected with tetanus.

Brieger separated from the blood of diseased animals and also from pure cultures of the tetanus bacillus two alkaloid substances which he calls tetanin and tetanotoxin. Both are poisonous and capable of producing convulsions. Brieger and Fraenkel later isolated an extremely powerful toxalbumin. Vaillard and Rouget found that when tetanus bacilli were injected into the body free from toxin, owing to the promptness with which the phagocytes took them up and destroyed them, there were no ill effects. If the tissues were injured, however, either from trauma or chemicals, the bacilli began to form toxins and symptoms resulted.

Behring and Kitasato, and subsequently many other observers, have produced a valuable antitoxin by the usual method of introducing into animals increasing doses of the toxin. A. Lambert has shown that a protective power of 1 to 800,000,000 can be obtained. Dr.

¹ Read before the Journal Club, November, 1901.

Welch has pointed out that antitoxin has not as yet been very successful in the treatment of human tetanus. In animals it has proved of great value as a preventive. In all laboratories where horses are injected with the various toxins there is invariably an outbreak of tetanus from time to time. If the animals are given tetanus antitoxin every three months these outbreaks are prevented. This has been shown to be so at the Mulford laboratories in Philadelphia.

Nocard's figures regarding protective inoculations are most striking. Of 2,727 animals inoculated not one developed tetanus, while during the same period in the same neighborhood 256 nonimmunized animals developed the disease. In the large lying-in hospitals where tetanus is present its spread may be prevented by giving the mothers an immunizing dose of the antitoxin.

The more acute the attack the less chance there is of cure. The prognosis depends on the period of incubation and the nature of the attack. Roux and Borelles assert that the mortality in severe cases is 50% when the injections are made in the subcutaneous tissue. Delayed cases may result in cure with or without the use of antitoxin. In those individuals in whom the disease develops before five days after infection, the prognosis is almost invariably fatal. I do not know of a case of the patient getting well when the disease developed within four days. All cases coming on after five days may be classed as delayed, and they have a correspondingly good prognosis, depending, of course, on the incubation period.

The treatment is to open the wound and cleanse it thoroughly, with the object of preventing the formation of more toxin. Blood may be drawn and the fluid in the body replaced by injecting normal salt solution. The antitoxin should be injected as soon as possible. It has been suggested by Rabbe that the antitoxin would be more powerful and quick in its action if it were injected directly into the cerebral cavity. To do this it would be necessary to trephine. A simpler plan is to inject it into the spinal canal, using the same procedure as for lumbar puncture. Subcutaneous injection seems, so far, to give about equally good results.

Carbolic acid has been recommended by many. The idea originated with Bacelli, and has attracted widespread attention in Italy, where the most brilliant results are claimed for it. It has not received very much attention elsewhere, although there are a few scattered reports, some by very good authorities, commending its use. The drug is given hypodermically, the dosage being about 0.2 cc. (3 minims) in 2% solution, given during 24 hours. Twice as much as this and even more has been given without bad results. The injections are usually given at two-hour intervals. I have had no personal experience with its use.

In former days the surgical treatment of tetanus consisted in cleansing the wound, nerve stretching, or even amputation of the member wounded, at the first sign of the disease. Today the treatment consists in thorough cleansing of the wound, administration of antitoxin, and the use of such drugs as may be deemed necessary for allaying unpleasant symptoms.

The dosage of antitoxin should be considered carefully and a sufficient quantity used. When tetanus first shows itself it has probably existed for some days in a latent stage, and with the use of antitoxin there is an alleviation of the unpleasant features in many cases, and in some of the delayed cases a cure may be effected. Let me refer briefly to my experience with this disease:

While I was a student of medicine at the Maryland University, a boy of 12 years came in with a crushed foot. The late Dr. J. E. Michael amputated the leg, and 10 days later the boy developed tetanus. We gave him whisky, milk and opium by rectum and by mouth. Chloroform was used to lessen the spasms. The case was one of delayed tetanus, and after an illness of three weeks the boy recovered.

In April, 1892, a stableman was kicked on the leg by a

horse. A compound fracture of the tibia and the fibula was the result. The wound was cleansed and dressed. Four days later tetanus developed. Six days after the injury I amputated the leg above the knee, but without effect on the course of the disease. The man died on the seventh day after infection.

In 1894 a man fell down an areaway and sustained a compound comminuted fracture of the left shoulder bones. The wound was carefully cleansed and dressed. Seven days later the first symptoms of tetanus showed themselves, and 36 hours later the man died. The ordinary treatment was without avail.

In 1898 a negro was admitted to the City Hospital suffering from a wound of the foot of five days' standing. Tetanus had already developed. The wound was opened and cleansed and he was given a full dose of morphia and tetanus antitoxin hypodermically. During the following week he was given 700 cc. of the serum. He recovered and was able to leave the hospital in a month.

In 1900 a white woman came into the City Hospital. She had had spasms of the jaws for two weeks, was emaciated, and much reduced in health. She was given antitetanic serum and improved. Unfortunately the spasm was never relieved entirely, and she died of exhaustion four weeks later.

During the same year I was called to see an old man who had fallen in the street two weeks previously, receiving a cut on the head. The wound had been dressed by the family physician. On the ninth day tetanus developed. When I saw him he had been having convulsions for five days. He was given three phials of the antitoxin, but without result. He died 12 hours later.

In 1901 a negro who had served in the U. S. Army at Santiago, and who had had both yellow fever and rheumatism at that time, came to my office. Two hours before he had been thrown from his wagon into the street. The palm of his right hand at the base of his middle finger was torn across exposing the tendons. There was dirt in the wound and in the tendon sheath. He regarded the wound as trivial and came only because urged to do so by his employer. The finger was cocaineized and laid open. It was cleansed thoroughly and then allowed to soak in 1-5,000 bichlorid solution for 15 minutes. As the wound did not heal readily and there was some suppuration, it was opened again and hydrogen dioxide used in cleansing it. Ten days later the wound was practically healed, only a small part of it granulating. On the thirteenth day the patient told me that his right shoulder pained him and that he thought he had a return of the rheumatism with which he had suffered while a soldier. Tetanus was not suspected at this time. I was called to see him two days later, and he presented all the characteristic symptoms of tetanus. He was moved to the City Hospital, and placed in a darkened room and kept absolutely quiet. The convulsions were very severe, some lasting so long that it was feared he would die from impeded respiration. Chloroform was used to relax him, and he was given three phials of antitoxin which relieved him in a half hour, so that he was able to take nourishment. For 10 days he was given the serum every six hours. At first three phials were given at a dose, later two, and at the end of the treatment only one. Within 10 days he was given 53 phials of antitoxin. His spasms ceased but the muscles remained stiff and sore. He continued to improve, and was discharged cured at the end of six weeks.

From the foregoing cases and those of other observers I am led to believe that the tetanus antitoxin is of very considerable value in the treatment of this disease, especially in the delayed cases.

LOBAR PNEUMONIA AND ITS TREATMENT.¹

BY

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of El Paso, Tex.

Pneumonia has been defined as an inflammation of the parenchyma of the lungs. "The parts of the lungs involved are the alveoli, the air passages, and the smallest bronchi."

Of all cases of pneumonia 90% are caused by the pneumococcus of Fraenkel. The bacillus of influenza probably ranks second as a causative agent. The pneumococcus of Friedländer, streptococcus of suppuration, Klebs-Loeffler bacillus, fungus of actinomycosis, plague bacillus, colon bacillus, typhoid bacillus, tubercle bacillus, intracellular meningococcus, and perhaps other organisms are each capable of setting up pneumonia. Neusser, of Vienna, mentions a case in which a gonococcus-like organism seemed to have caused pneumonia.

The disease is most common and most fatal at the two

¹ Read before the El Paso County (Tex.) Medical Society.

extremes of life. Delafield says that of 7,873 cases occurring in New York City between 1871 and 1875 nearly one-half were in children under five years of age. Loomis states that 65% of all deaths after 75 are caused by lobar pneumonia. The fact that the mortality is so high at the two extremes of life renders statistics showing very favorable results in the treatment of a small number of vigorous adults of practically no value.

Pneumonia occurs about twice as frequently in males as in females. In youth and old age the sexes are about equally subject to the disease. Nephritis, diabetes, and alcoholism, measles, diphtheria, and other infectious diseases act as predisposing causes. Traumatism may also give rise to pneumonia.

In the United States pneumonia is more prevalent in the South than in the North. Colorado shows 60 deaths per 1,000 due to pneumonia, while Alabama has 123 per 1,000, and Arkansas 183 per 1,000. From January 1, 1895, to December 31, 1899, there were 1,736 deaths from all causes in El Paso. Of these 114 were due to pneumonia, which is 66 per 1,000. This includes all kinds of pneumonia.

According to the last census, pneumonia caused more deaths than any other disease. In New York City from 1890 to 1900, there were 56,062 deaths from this cause, and but 50,490 from tuberculosis. During the same period Chicago had 25,228 deaths from pneumonia and 22,957 from tuberculosis. The recent increase in mortality has been ascribed to influenza. Osler says that hospital records show a mortality of from 20% to 40%. He says that of 3,969 patients treated at the Charity Hospital, New Orleans, the deathrate was 28.01%. His analysis of 708 cases at the St. Thomas' Hospital shows that the mortality increases from the twentieth year on, rising from 3.7% under that age to 22% in the third decade, 30.8% in the fourth decade, 47% in the fifth decade, 51% in the sixth decade, and 65% in the seventh decade. A collection of 223,730 cases gathered from various sources gave a mortality of 18.1%. The mortality at El Paso is between 20% and 25%.

Hardship, alcoholism and extreme poverty make the prognosis bad. Pneumonia secondary to measles and the diarrheal diseases of children, is almost always fatal, circulatory failure being the common cause of death. There is generally an intense toxemia, partly due perhaps, to the great mass of infected tissue, through which a large part of the blood must pass with each circuit. The final effect of the toxins of pneumonia is to cause a vasomotor paralysis, to which the heart failure is due in most instances. The consolidated lung offers some resistance to the circulation, but while the affected part is impervious to air, the bloodvessels are, of course, open, or gangrene would result. Especially in pneumonia of the lower left lobe the consolidated and enlarged lung may press upon the heart and somewhat impede its action. In many cases tympanites embarrasses the heart movements by pressure from below. By preventing the descent of the diaphragm the circulation is also deprived of the aid of aspiration of the thorax with each respiration.

Of complications, meningitis is fatal. It is, however, not always easily made out during life. Ulcerative endocarditis is a common complication in cases terminating fatally. Pericarditis, the involvement of more than one lobe and pleurisy add to the gravity of the case. Edema of the lungs indicates a desperate, but not necessarily hopeless condition. A pulse of from 140 to 150 per minute, steadily maintained or gradually increasing in rapidity, generally means a fatal termination. High temperature has little to do with the prognosis. Marked leukocytosis is said to be a favorable symptom, as is also the reappearance of chlorids in the urine. Patients with a scanty excretion of urine do badly.

I will not discuss the morbid anatomy and symptomatology. Mistakes in diagnosis are very seldom made;

but lobar pneumonia in children is often overlooked if careful physical examinations are not made. A distinguished author has said "pneumonia is a self-limited disease and runs its course uninfluenced in any way by medicine. Patients are more often damaged than helped by the poisonous drugging, which is still only too prevalent." It is very evident however that some do not subscribe to this dogma.

Petresco gives from 4 to 12 grams of digitalis in powder daily. He reports 1,192 soldiers treated by this method, with a mortality of from 1.2% to 2.6%. The crisis occurred in general as early as the third day. Anders, in his textbook, says that this treatment is rational, but warns against the use of large doses of digitalis after the lung has become consolidated. It must be remembered that Petresco's cases were in young and healthy individuals, at an age when the deathrate is normally low. Corin has had similar results with large doses of digitoxin. He treated 54 patients with digitoxin with but four deaths. These cases occurred in private practice and in 24 the process ran its course completely in from 24 to 36 hours.

Dr. T. G. Stephens, of Sidney, Iowa, a practitioner of forty-two years' experience, says that veratrum viride is more efficacious in pneumonia than quinin is in malaria. His deathrate is 8%. He gives three-drop doses of Norwood's tincture, and increases the dose one or two drops each time until the desired effect is produced. Hare thinks veratrum viride sometimes capable of aborting a beginning pneumonia. H. C. Wood believes that in the early stages of sthenic pneumonia, veratrum viride offers the best known method of reducing the pulse-rate and temperature, and of ameliorating the disease. Dr. J. Paffrath asserts that he has never failed to abort a beginning pneumonia in three or four days, and the severest double pneumonia in five or six days by administering .39 gram to .45 gram (6 or 7 grains) of acetanilid with .19 gram to .26 gram (3 or 4 grains) of Dover's powder every four hours day and night. He has never seen collapse or other dangerous symptoms from acetanilid. De Becker recommends salicylic acid, and believes that, if administered early it is a sure preventive. Eleven out of twelve patients thus treated by him were cured quickly. Of seventy-two cases of pneumonia occurring in Austria, the patients were treated with 8 grams (120 grains) of sodium salicylate daily, and all recovered. Dr. Sebering, of Kingston, N. Y., treated seventy-five patients in this manner with but one death.

Within the last few years creosote carbonate has been highly commended, it being claimed that in the form of creosotal it is an antidote for the toxins of pneumonia. The dose advised is from 2 to 12 grams (.5 to 3 drams) a day. Excellent results are reported, but the statistics that I have seen only included patients between the ages of 10 and 45, a period during which, as has been already shown, the mortality is not high.

Dr. Thomas J. Mays, of Philadelphia, believes in treating pneumonia by the application of ice bags over the lesion in the lungs. He has collected a large number of statistics showing a mortality of but 3% when his method has been followed.

Dr. Simon Baruch urges the great value of hydrotherapy in the treatment of pneumonia. He advises the wet compress, which consists of several folds of old linen covered with flannel and cut in the form of a vest so as to fit accurately the whole chest. This is to be wrung out of water at 60° F., and changed every half hour; if the temperature is below 102.5°, every hour, and when it is 99.5° it is discontinued. He has not lost an uncomplicated case of pneumonia since adopting this plan of treatment. To combat collapse he has depended largely upon strychnin used hypodermically. In connection with the compress externally, he has insisted upon large quantities of fluid being taken internally.

Regnaud, of Marseilles, has bled pneumonia patients, at the same time injecting normal salt solution. It is

said that by this plan cyanosis disappears, arterial tension improves, and the energy and regularity of the heart are increased. Wells, of Chicago, has reported good results from this procedure.

Venesection performed early has produced striking results in some cases. The symptoms calling for venesection, according to Broadbent, are distended jugular veins, cyanosis and a strong apex beat with a weak pulse, showing that the right ventricle is unable to overcome the obstruction in the lungs. Late venesection it would seem is a mistake. Out of 12 hospital patients upon whom Osler did the operation 11 died.

The specific treatment of pneumonia would be all very well if others could get the same results claimed by a few enthusiasts. In many cases the drugs mentioned cannot be used at all. For example in acute gastritis digitalis and ammonium salicylate are out of the question. And in the pneumonia complicating measles, the summer diarrheas of children, or typhoid fever, who would have the hardihood to use any of the drugs advised? And the same might be said of the old and feeble, and also of marasmic infants. And it is just these patients that give the highest mortality.

The best results on the whole seem to come from rational symptomatic treatment. *Absolute rest* in bed from the very beginning is imperative. The patient should not be allowed to raise himself in bed for food or medicine, and the bedpan should be used from the start. Anything that will add to the comfort of mind or body is a real and valuable aid to recovery. All visitors must be firmly refused admittance to the sick-room. Until these matters have received attention, we are not ready to begin the administration of drugs, which is a part of good nursing, but cannot be left to the nurse without detailed instruction from the physician. It is our first duty to see that the patient does not kill himself by his indiscretions; second, to prevent his friends from killing him by their misguided zeal, and third, to beware lest we ourselves snap the slender thread of life in our anxiety to give relief.

The diet should be nourishing and easily digestible. Milk serves a twofold purpose, as a food and as a diuretic. An abundance of plain or medicated water should be given to aid in carrying off toxins by the urine. Enemas of normal salt solution meet the same indication and form a valuable routine measure. Tympanites should be carefully watched for and promptly relieved by enemas or turpentine stupes. A dose of from .32 gram to .65 gram (5 to 10 grains) of calomel in the beginning is generally good, but too active purging does harm by carrying off fluid by the bowels that is needed for the elimination of toxins by the kidneys.

An abundance of fresh air will do much to prevent circulatory failure. Huxley once said that if the tissues of the human body were as well supplied with oxygen as are those of the gnat, an ordinary man could easily carry Newgate prison across the street on his back. The proper ventilation of the sick-room must come before the administration of cardiac stimulants. Of course the tissues can only use a certain amount of oxygen, but that ought to be furnished in an atmosphere that is pure and unvitiated. An oil stove, or worse yet, a swarm of visitors in the sick-room may be the means of killing a pneumonia patient by robbing him of fresh air and oxygen.

Fever, unless it causes restlessness or remains persistently high is best left untreated. If it becomes necessary to reduce it the wet pack, or ice bags, to the head and chest, or sponging with cold water are probably the safest measures. Circulatory stimulants are often needed but should only be employed when plainly indicated. A pulse that is poorly filled and gradually increasing in rapidity until 120 or 130 beats per minute are reached generally calls for heart stimulants. When the second sound of the heart at the pulmonary orifice begins to grow faint and poorly accentuated, failure of

the right ventricle is apparent, and it is the most valuable sign of heart failure. Strychnin, ammonia, ether, and camphor are most to be depended upon in desperate cases. The administration of 6 mg. ($\frac{1}{10}$ gr.) of strychnin every hour for a few doses may be necessary at times; but ammonia and ether make the most prompt and decided impression upon the circulation. The administration of 15 minims each of ammonia and ether night and day every 15 minutes, as advised by Professor Elsner, has apparently saved life in some instances. His patients were in a desperate condition, with pulse from 130 to 150 per minute, cyanosis, tracheal rattling and edema of the lungs persisting for from one to three days. Still many patients will die under any form of treatment. What I wish to emphasize especially, and what seems to be generally overlooked or regarded of secondary importance, is the great value of fresh air, plenty of water, absolute rest in bed, and good nursing.

SPECIAL ARTICLES

ON THE CLASSIFICATION OF MUSEUM SPECIMENS.¹

With an Exposition of a Decimal Classification of Museum Specimens Applied in the Pathological Museum of McGill University, After a Plan Suggested by the Late Professor Wyatt Johnston.

BY

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The progress of modern professional education being always toward more objective teaching in all departments, the importance of the medical museum in this connection increases constantly, and in a university the uses of the museum as a storehouse for the curiosities of medicine or for the materials of scientific research are naturally subordinated to its value in the practical assistance it can lend the teacher by placing at his hand the fullest illustration of the varying facts which he seeks to impress upon the student.

Further, in the department of pathology, museum preparations have of late years been made of infinitely greater value to the teacher by the introduction of methods for preserving the natural colors of organs. The discovery of these methods was announced in the year 1896 by three independent workers—Melnikow-Raswedenkow, Jore, and Kaiserling.² These methods, one or other of which is now the routine practice in almost all the leading museums, depend on the action of, first, formalin, and then alcohol, on the blood-coloring matter in the tissues, the formalin reducing the hemoglobin to brown acid hematin, and the alcohol changing this again to the red alkaline hematin, a substance closely resembling oxyhemoglobin in color, but which remains fixed in the tissues and does not undergo further change.

Under the right employment of these methods there is now no longer a "Museum Pathology" in which the peculiar appearances of the museum specimen must be acquired for examination purposes by the hard-worked student. Today a well prepared museum specimen, its colors preserved almost as in life, properly mounted to resemble as closely as possible its position in the body, and carefully dissected to display the extent and relations of the lesions, presents appearances very similar to those of the postmortem-room, and sometimes shows the morbid process even more clearly and with greater advantage to the student. At the meeting of the Berliner Med. Gesell., of July 8, 1896, at which Dr. Kaiserling first announced his method, Professor Virchow stated that he believed the use of this process for the preservation of the natural colors of organs would inaugurate a new era in the demonstrative teaching of pathology, and already it may be said to have done so.

Virchow's own institute—the new Pathological Museum of

¹Read before the meeting of the Canadian Medical Association, Montreal, September 18, 1902.

²Puppe: Vierteljahrsschrift für gerichtliche Medizin, 2 Folge, xvii, 2.

Berlin—is a good example of the extensive use to which a large collection of fine specimens can be put in teaching. This museum, which was formally opened last year at the festival of Virchow's eightieth birthday, is a large, four-story brick building devoted entirely to pathologic museum specimens, to museum preparation rooms, and lecture theater, and contains about 20,000 specimens. Among these are many full series of the finest colored preparations. These are used singly to illustrate conditions studied for the first time, in groups for comparison and differential diagnosis, and also (and this especially) in large numbers for purposes of rapid review. In Virchow's own words, written at the time of the opening:

Thus will the student prepare himself for the difficult art of forming for himself, out of the confusing many-sidedness of pathologic appearances, a general idea of a diseased process, even in those cases in which direct observation is impossible.¹

So soon as a museum collection becomes of any size the question of its scientific classification is of primary importance. This not only for the convenience of the teacher and the curator, but also for the sake of making the material as it stands on the shelves accessible and of most advantage to the student. For this reason a useful classification must be based on teaching principles.

Pathologic material will be approached by the teacher from the standpoint of (a) general pathology, the study of the same morbid condition as it appears in different organs and tissues; (b) special pathology, the study of the same organ as it is affected by different diseases, and (c) regional pathology, the study of a portion of the body, such as the head or abdomen, according as it is affected by different diseases.

Any classification will naturally be based on one of these divisions, and in a large collection where specimens are duplicated all three may be followed. Thus in the great Army and Navy Museum at Washington there are three full sets of specimens. First one finds diseases and injuries of regions, in which morbid processes involving the head, thorax, abdomen and extremities are grouped together; second, diseases of organs where groups of pathologic conditions affecting the different parts of the circulatory, nervous, digestive and other systems follow each other; and third, one sees illustrations of the same diseased process, *e. g.*, tuberculosis, syphilis, infarction, as it affects the different organs of the body.

In the great Museum of the College of Surgeons of London, as also in the small but beautifully ordered Museum of Charing Cross Hospital, an anatomic classification is followed throughout, specimens being subclassified pathologically under the main divisions of the organ in which they occur. For a smaller teaching museum, such as college museums are likely to be, where specimens are not often present in duplicate, this last named arrangement would seem to be the most practical. That is, that an anatomic classification be followed and the different morbid processes affecting each organ be subclassified under it, general and regional pathology being provided for by cross cataloguing. Especially characteristic groups of morbid conditions, such as calculi, parasites, etc., may be placed together as departments of general pathology.

The general plan of classification having thus been mapped out, a less prominent but no less important problem is the method in which the preparation shall be numbered so that it will remain in the order to which it has been assigned, perhaps after some study. The specimen must either bear the number of its shelf or its catalog number must be made to give an index to the place to which it belongs on the museum shelves. I have the honor to present in this paper a system of descriptive catalog numbers which has recently been applied in the Pathologic Museum of McGill University. These catalog numbers have a logical sequence and are based on a scientific classification of which the main grouping is anatomic and the subdivisions pathologic.

For the suggestion of this classification the museum committee is indebted to the late Professor Wyatt Johnston, with whom also the pathologic portion of the classification was original.

To devise a good working system of catalog numbers that

will not require frequent change is a problem that has exercised museum workers everywhere, and has nowhere as yet been satisfactorily solved. It has generally, indeed, been set aside as less important than the time which it would take to elaborate it. What is required is a system of numbers which will run in numerical rotation in the museum and will yet allow of the addition of new specimens in the division of the classification to which they belong without disturbing this numerical order.

In the College of Surgeons of London, as in the Charing Cross Museum, which has lately been completely recatalogued under Dr. Hunter, only one set of consecutive numbers is used, and these numbers follow each other in rotation all through the museum. Gaps are left in the series for new specimens, and new duplicate specimens are distinguished from the original by a small letter. Thus: 1001, Tuberculous Pericarditis, 1001a, ditto.

The objection to this method is that it does not allow for the growth of the museum. When new specimens have exhausted all the numbers of the gaps that have been left in the series or have occupied all the shelf room that has been left empty for them, an extension means a complete renumbering of the collection in order to preserve the rotation. A descriptive number is needed which will be common to each group of specimens, some additional letter or figure being added to distinguish the particular specimen from another of the same group. This has been attempted in the Army and Navy Museum, Washington. Here a descriptive number is used; it is made up of letters to represent the anatomic, and figures to represent the pathologic condition, while the particular specimen is indicated by a figure placed after a decimal point. Thus, for instance, capital D. would represent the circulatory system, little a. the heart, and 3 anomalies. All specimens showing anomalies of the heart are labeled Da3, the individual specimens of this condition would be Da3.1, Da3.2, Da3.3, etc.

If I may venture to criticize so excellent a museum, it appears to me that in the Army and Navy collection the ideal lying behind this descriptive number has not been systematically carried out in its application, so that it does not altogether answer the purpose for which it was intended. The classification on which the numbers are based does not attempt to be a complete one, only a few headings being used, and these not always exhausting the main divisions of the subject, nor following each other in the order in which we are accustomed to think of them. So that not only is it often difficult or even impossible to classify a specimen under the headings that the catalog numbers furnish, but also it is impossible to observe the numerical order in the different groups without disturbing the natural order in which the specimens should stand.

THE CLASSIFICATION OF SPECIMENS IN THE PATHOLOGICAL MUSEUM OF MCGILL UNIVERSITY.

In the year 1897 this museum was renovated and put in order under the direction of Professor Adami. At this time the specimens were grouped on an anatomic classification, with a pathologic subclassification, and a corresponding descriptive catalog number made up of letters and figures, as in the Army and Navy Museum, was used. The classification employed, however, as was necessary in any attempt to get the whole mass of material into order in a short time, was too broad to be adequate for permanent purposes. The few divisions made were soon found insufficient for classifying purposes, as they did not indicate the whole range of pathologic possibilities.

In the year 1899 the late Professor Wyatt Johnston laid the decimal system of classification and catalog numbers, which is the subject of this paper, before the Museum Committee. It was adopted and applied and the collection catalogued upon it.

In its application this system has been found to meet all the requirements of the case. Its decimal character admits of its being extended in any one direction or of its being modified in any one particular at will, and specimens can be kept in order on the shelves without the help of skilled labor.

The general principles of this classification may be summed up as follow:

A full classification, both anatomic and pathologic, is aimed at, in which there is a logical sequence of ideas. The anatomic

¹ Virchow: Das neue Pathologisches Museum zu Berlin, Berlin, 1901.

condition is made the main classification and the pathologic condition a subclassification under it. In the anatomic classification organs are made to follow each other, so far as possible, in their relations in the body. Thus, the respiratory system runs: 21, nose; 22, larynx; 23, trachea and bronchi; 24, lungs; 25, pleura, passing from the surface inward. So also in the pathologic classification, anomalies, circulatory disturbances, inflammations, progressive and retrogressive changes follow each other in the order in which they are generally presented to the student.

The descriptive numbers are made up of figures only. A decimal point is used, and the anatomic condition is represented by numbers before, the pathologic by numbers after the decimal point. The particular specimen is indicated by a small index figure to the right of the full number.

The Dewey system of library classification is followed. This is a decimal system. The set of numbers before and after the decimal point each represent a complete classification in themselves. In each classification there is a division into ten main groups, and each of these groups may be divided at will into ten or less subgroups, each of which may again be subdivided into ten, and so on indefinitely.

The Anatomic Classification.—This is the main classification. The numbers representing its divisions precede the decimal point in the catalog number. With a few insignificant modifications it is the work of Dr. Haviland Field, of Zurich, and was devised by him for use in medical libraries under the Dewey system.

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| <p>1. CIRCULATORY SYSTEM:</p> <p>11. Pericardium.
12. Heart and Myocardium,
13. Endocardium,
14. Arteries,
15. Veins,
16. Capillaries,
17. Blood,
18. Lymphatic Vessels.</p> <p>2. RESPIRATORY SYSTEM:</p> <p>21. Nares,
22. Larynx,
23. Trachea and Bronchi,
24. Lungs,
25. Pleura.</p> <p>3. DIGESTIVE SYSTEM:</p> <p>31. Teeth,
32. Mouth, Tongue, etc.,
33. Pharynx and Esophagus,
34. Stomach,
341. Stomach Contents,
35. Intestine,
351. Small Intestine,
352. Appendix and Cecum,
353. Large Intestine,
354. Rectum,
355. Intestinal Contents,
36. Peritoneum and Mesentery,
37. Liver,
38. Gallbladder and bile-ducts,
39. Pancreas.</p> <p>4. LYMPHATIC SYSTEM AND DUCTLESS GLANDS:</p> <p>41. Special Lymphatic Glands,
42. Thymus Gland,
43. Thyroid Gland,
44. Spleen,
45. Suprarenals.</p> <p>5. UROGENITAL SYSTEM:</p> <p>51. Kidney,
52. Ureter,
53. Bladder,
54. Urethra,
55. Penis,
56. Prostate,
57. Seminal Vesicles, Vas Deferens and Cord,
58. Testes, Epididymus and Tunica Vaginalis,
59. Scrotum.</p> <p>6. FEMALE GENERATIVE SYSTEM:</p> <p>61. Vulva,
62. Vagina,
63. Uterus,
64. Tubes,
65. Ovaries,
66. Broad Ligament,
661. Parovarium,
67. Mamma,
68. Gravid Uterus,
69. Ovum,
691. Membranes,
692. Placenta,
693. Fetus.</p> | <p>7. NERVOUS SYSTEM:</p> <p>71. Dura Mater,
72. Pia Mater,
73. Brain,
74. Medulla and Pons,
75. Spinal Cord,
76. Nerves,
77. Sympathetic System,
78. Eye,
79. Ear.</p> <p>8. TEGUMENTARY AND MUSCULAR SYSTEMS:</p> <p>81. Skin,
82. Hair,
83. Nails,
84. Muscle and Fascia,
85. Cellular Tissues.</p> <p>9. OSSEOUS AND ARTICULAR SYSTEMS:</p> <p>91. Bones of Cranium,
92. Bones of Face,
93. Vertebras,
94. Sternum,
95. Ribs,
96. Bones of Upper Extremity,
961. Scapula,
962. Clavicle,
963. Shoulder-joint,
964. Humerus,
965. Elbow-joint,
966. Bones of Forearm,
967. Wrist-joint and Joints of Hand,
968. Bones of Hand,
97. Pelvis,
98. Bones of Lower Extremity,
981. Os Innominatum,
982. Hip-joint,
983. Femur,
984. Knee-joint,
985. Bones of Leg,
986. Joints of Ankle and Foot,
987. Bones of Foot.</p> <p>0. REGIONAL:</p> <p>01. Head,
02. Face,
03. Neck,
04. Trunk,
05.
06.
07.
08.
09.</p> |
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The Pathologic Classification.—This is the subclassification. The numbers representing its divisions follow the decimal point in the catalog number:

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| <p>1. ABNORMALITIES:</p> <p>.11 Persistent fetal structures,
.12 Defective closure of fetal openings,
.13 Fetal disease,
.14 Malposition of parts,
.15 Suppression of parts,
.16 Excess of parts,
.17 Duplication of parts,
.18 Reversions,
.19 Teratomas,
.20</p> <p>2. CIRCULATORY DISTURBANCES:
(Abnormal distribution of blood and lymph)</p> <p>.21 Anemia,
.22 Hyperemia,
.23 Hemorrhage,
.24 Thrombosis,
.25 Embolism,
.26 Infarction,
.27 Edema.</p> <p>3. INFLAMMATIONS:</p> <p>.31 Parenchymatous degeneration,
.32 Cellular or catarrhal inflammation,
.33 Serous inflammation,
.34 Fibrinous or croupous inflammation,
.35 Diphtheric inflammation,
.36 Hemorrhagic inflammation,
.37 Purulent inflammation,
.38 Destructive inflammation,
.39 Productive inflammation.</p> <p>4. INFECTIONS AND PARASITES:</p> <p>.41
.42 Pyogenic cocci,
.43 Bacilli,
.44 Spirilla,
.45 Yeasts and molds,
.46 Protozoa,
.47 Verms,
.48 Verms,
.49 Arthropods.</p> <p>5. GRANULOMAS AND GENERAL DISEASES.</p> <p>.51 Tubercle,
.52 Lupus,
.53 Syphilis,
.54 Glanders,
.55 Actinomycosis,
.56 Diseases of the blood,
.57 Nutritional diseases,
.58 Gouty rheumatic group.</p> | <p>.6 PROGRESSIVE CHANGES:</p> <p>.61 Regeneration,
.62 Hypertrophy,
.63 Histoid tumors,
.64 Histoid tumors,*
.65 Sarcoma,
.66 Sarcoma (mixed forms),
.67 Cyst formation and teratomas,
.68 Benign epithelial tumors,
.69 Carcinoma.</p> <p>7. RETROGRESSIVE CHANGES:</p> <p>.71 Atrophy,
.72 Necrosis,
.73 Gangrene,
.74 Degenerations,
.741 Parenchymatous,
.742 Fatty,
.743 Hyaline,
.744 Amyloid,
.745 Caseous,
.746 Calcification,
.747 Pigmentary,
.748 Cystic degeneration,
.75 Ulceration and abscess formation,
.76 Perforation and rupture due to disease,
.77 Dilatation due to disease.
.78 Stenosis due to disease.
.79 Calculus formation.</p> <p>.8 WOUNDS AND INJURIES:</p> <p>.81 Wounds,
.82 Ruptures and lacerations,
.83 Gunshot wounds,
.84 Fractures,
.85 Dislocations,
.86 Sprains,
.87 Corrosion,
.88 Poisons,
.89 Foreign bodies,
.90 Abortion.</p> <p>.9 SPECIFIC ARTEFACTS:</p> <p>.91 Amputation,
.92 Excisions,
.93 Plastic operations,
.94 Ligatures,
.95 Miscellaneous operations,
.96 Tattooing,
.97
.98 Gas formation,
.99 Postmortem changes,
.90</p> <p>.0 GENERAL SUPPLEMENTARY:</p> <p>.01
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A glance at the details of this system as it is applied in the museum will illustrate what, although it may appear complicated, is really a very simple principle. The whole collection is divided into 10 main divisions, the 10 systems of the anatomic classification, and the organs of each system are arranged under it. Under each organ again the lesions affecting it are classified, while the individual specimens showing the same condition stand in the rotation of their index figures. Thus, the first department is lettered: 1. Circulatory System, and its first division: 11. Pericardium. The specimens showing inflammations of the pericardium read as follows on the shelves:

- 11.23¹ Ecchymoses into pericardial layers.
11.34¹ Acute fibrinous pericarditis, moderate degree of "Cor Villosum."
11.34² Acute fibrinous pericarditis. Fine example of "Cor Villosum."
11.34³ Subacute serofibrinous pericarditis.
11.34⁴ Acute serofibrinous pericarditis. Pericardial cavity enlarged. Both layers covered with a granular deposit having a flattened surface and peeling off in flakes.
11.34⁵ Subacute serofibrinous pericarditis.
11.36¹ Hemorrhagic pericarditis.
11.37¹ Purulent pericarditis. Greatly enlarged pericardial cavity, which contained postmortem a pint of pus.
11.37² Subacute purulent pericarditis. Both surfaces covered with a phlegmonous sloughy bloodstained surface.

* Where a term is repeated it signifies that the possible subdivisions being more than 10, 20 instead of 10 places are allowed for convenience in classification.

- 11.39¹ Chronic adhesive pericarditis, pericardium adherent anteriorly, the layers widely separated posteriorly to contain a large cavity. Both layers are thickened and lined by organized tissue.
- 11.39² Chronic adhesive pericarditis.
- 11.39³ Chronic pericarditis with localized adhesions.
- 11.39⁴ Chronic mediastinopericarditis. The outer surface of the parietal pericardium is adherent to the pleura covering the right lung, also firmly united to diaphragm below and anteriorly.
- 11.39⁵ Chronic adhesive pericarditis. A filmy layer of organized tissue unites the opposed surfaces at all points. Etc., etc., etc., etc.

The anatomic classification is followed in the museum into all its details, and cards bearing the title of each division, with its corresponding number, are placed over the shelves where each organ is to be found. These subdivisions form the most convenient point in the whole system. Thus, after 34, Stomach, a compartment is found, 341, Stomach Contents; after 35, Intestine (under which are classed lesions affecting the intestine as a whole, such as "hernias"), comes 351, Small Intestine; 352, Appendix and Cecum; 353, Large Intestine; 354, Rectum; 355, Intestinal Contents. Again, the obstetric collection arranges itself naturally at the end of the gynecologic department.

In the pathologic classification, on the other hand, the intent has been to avoid subdivision wherever possible. Although a full table of possible conditions has been made out, the subheadings are used only in those cases in which there are many variations of a given lesion. Thus, "Anomalies" of the pericardium, being rare, would be all classed together, 11.1¹, 11.1², 11.1³, etc., while "Anomalies" of the heart itself, being many and varied, would be subclassified under this head as 12.11¹, 12.12², 12.13³, etc., according to the condition.

In working out this system in the museum, one or two possible alterations have suggested themselves. If the anatomic classification were altered to: 1. Digestive System. 2. Respiratory System. 3. Circulatory System. 4. Glandular System. 5. Urogenital, etc., the lymphatic vessels with which the circulatory system ends would stand next to the lymphatic glands, and the suprarenals, with which the glandular system ends, would stand next to the kidney, with which the Urogenital begins. But this is a minor point, and it seems not worth sacrificing to it the natural order which would certainly begin the open book which the museum aims at making itself to the students with the circulatory system.

The pathologic classification presents, in the nature of the subject, many difficulties. In the present state of our knowledge it is not like an anatomic classification, based on certain well-established facts, it is largely tentative, for our ideas of pathologic conditions change constantly with the increase of our knowledge. One has only to glance at the repeated changes that are being made, for instance, in the Bertillon classification of the causes of death, to realize how impossible a permanent nomenclature will be, at least for many years to come. All that can be done is to classify so far as possible on the actual pathologic changes known to be present, rather than on any supposed etiology.

The advantages of this system may be summed up as follows:

First. A careful classification is, as has been said at the outset, absolutely necessary to make a museum of thoroughly practical use to teacher or student. A careful system of catalog numbers which follows the classification into its details, so far as one wishes to push it, is of inestimable use to the curator in meeting this requirement. The catalog number chosen carefully and with study to describe the condition cannot fail of its numerical order in relation to other specimens of the same kind, and the preparations can then be kept in their appointed order by any boy who follows the one order that he is to watch the figures closely and place the specimens under their main group in the strict rotation of their index figure.

Second. The system allows of an indefinite growth of the museum, for it is expansive, permitting the addition of an indefinite number of specimens without any disturbance of either the grouping or the numerical order.

Third. It admits of subclassification to an indefinite extent in any one direction that may seem desirable. Thus, suppos-

ing that the museum is particularly rich in tumors, or that the curator devotes much time to working out this particular department, he can subdivide, *e. g.*, Sarcoma—65 Sarcoma; .651 Round-celled sarcoma; .652 Spindle-celled sarcoma; .653 Giant-celled sarcoma—and so on indefinitely. In short, this system is an aid to exact definition which is the basis of accuracy.

We believe that some form of decimal classification has been contemplated in several museums on this continent and has already been introduced in one or two places, as in the Museum of Biology and Zoology at Manchester, England; in the Pathologic Museum at Newcastle-on-Tyne, and in the Pathologic Laboratory of Professor Ira Van Gieson. But we do not know the details of the systems adopted or the degree of success which has attended them. The classification applied in the Pathologic Museum of McGill University, and given in detail in this paper, has now been in working order for more than a year and has proved itself thoroughly satisfactory in meeting the requirements alike of teacher, curator and student. In view of this fact we have thought it important to put it fully upon record in the hope that its utility might be increased by its adoption elsewhere, and that in time, if necessary by modifying and further simplifying wherever possible, a common system of museum classification based on the decimal system might be arrived at.

NOTE.—Dr. Johnston's plan, in its entirety, embraced the medical museum as a whole. The Museums of Anatomy, Pathology, Public Health and Legal Medicine were divisions I, II, III and IV under it, and the subject-matter of each had a decimal classification of its own. Thus, in the Medicolegal Collection the main divisions, 1. Criminology, 2. Thanatology, 3. Traumatism, 4. _____, 5. Tests, 6. Toxicology, 7. Sexual Relations, 8. Mental, 9. Jurisprudence, all precede the decimal point, while Dr. Field's anatomic classification (used as the main headings in the Pathologic Museum) follows the decimal point. But the only one of these classifications that had been fully worked out and applied by us in Dr. Johnston's lifetime was that in the Museum of Pathology. This is therefore the only portion which we feel competent to publish now, deprived as we are of his active cooperation through his recent sad and untimely death.

Tuberculosis in Prison.—Dr. J. P. Ranson, resident physician of the Clinton State Prison, Dannemora, New York, states that one-fourth of the inmates are afflicted with tuberculosis. An appropriation is urged for the construction of a special building at the prison for the cure of persons thus afflicted. It is said that from 40 to 200 tuberculous cases are being discharged every year from this prison, to carry infection broadcast into the outside world. At present there are 200 tuberculous inmates in the institution. Of these 195 were transferred from other institutions.

Mortality of Indiana.—The total number of deaths returned to the Department of State for February was 2,677, making an annual rate of 13.8 per 1,000. Pneumonia caused 339 deaths; tuberculosis, 342; cancer, 92; influenza, 56; diphtheria, 53; smallpox, 50; and typhoid fever, 49. The city deathrate was 17.3, which is 3.5 higher than the average rate for the whole State. The country deathrate was 11.9, which is 1.9 less than the State average, and 1.7 less than in the same month last year. Pulmonary tuberculosis prevailed more extensively in the cities than in the country, the rate being respectively 195.4 and 137.8 per 100,000. Pneumonia also prevailed more extensively in the cities, with rate of 236.4, and country 190.4. Of the smallpox deaths 43 occurred in the cities, 38 of these were in Indianapolis and 7 in the country. Of the 92 deaths from cancer 44 occurred in the cities and 48 in the country.

Medical Expert Testimony.—Judge Cary D. Davie believes that the value of evidence given by an expert depends upon his honor, experience and sound judgment. Much depends upon his personal appearance and conduct as a witness. He is called upon to testify as to what he may actually know regarding the matter in controversy, and to express his opinion founded upon such knowledge. An expert should be thoroughly conversant with his subject; he should avoid technical terms. In New York State an expert may decline to give evidence until satisfactory arrangements have been made for his fee. It is the court's duty to protect an expert in the exercise of this right. It is the duty of the court to decide whether an expert is competent or not. The only use an expert can make of quotations from textbooks is as follows: The counsel may ask a witness whether he agrees with the statement read from a textbook. He believes the creation of a State commission of experts is impracticable; and the present method of using hypothetical questions in the examination and cross-examination of witnesses is farcical and dangerous. He believes the defects in the present system of expert testimony are more the fault of the system than of the doctor.—[*Buffalo Medical Journal.*]

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

March 23, 1903. [Vol. XL, No. 13.]

1. Iodized Catgut. NICHOLAS SENN.
2. The Administration of Calcium Salts in Nephrolithiasis Due to Uric Acid Calculi. ALFRED C. CROFTAN.
3. Glioma Retinas: With Report of Five Cases. CHRISTIAN R. HOLMES.
4. Gastrointestinal Perforations and Their Diagnosis. F. GREGORY CONNELL.
5. The Respiratory Quotient as Influenced by Tuberculosis. T. M. ADERHOLD and W. S. HALL.
6. The Intracellular Toxins of Some of the Pathogenic Bacteria. VICTOR C. VAUGHAN.
7. Angiosarcoma of the Liver: Report of a Case. J. C. COOK.
8. The Recognition and Prompt Removal of Postnasal Adenoids in Children. LOUIS J. LAUTENBACH.
9. Cyclic Vomiting in Children: With Report of Cases. THOMAS C. ELY.

1.—Iodized Catgut.—N. Senn thinks there is little doubt that catgut will eventually render silk and metal obsolete for buried sutures. He advises the method of preparation devised by Claudius. A 1% aqueous solution of iodine destroys anthrax spores in eight days. The solution for the catgut is made by dissolving potassium iodide in a little water, adding finely powdered iodine, and diluting to 1%. The solution and catgut are kept in a glass-stoppered bottle with the date on the label. Before using the catgut it is immersed in a sterile solution to remove the iodine from the surface of the threads. The catgut not used is returned to the bottle. The thread is pitch black, pliable, and almost as strong as silk. Absorption occurs in from 12 to 16 days. The iodine not only sterilizes the catgut but inhibits the growth of pyogenic microbes in the tissues around the suture. The raw material prepared in this country is more suitable for this method of sterilization than imported catgut. [H.M.]

2.—Calcium Salts for Uric Acid Calculi.—A. C. Croftan notes that the uric acid of the urine is held in solution by disodium phosphate and is precipitated by monosodium phosphate. For the prevention of uratic calculi the increase of diphosphate and the decrease of monophosphate is therefore a desideratum. The object can be accomplished either by decreasing the phosphoric acid or by increasing the sodium of the urine. Calcium salts decrease the excretion of phosphoric acid through the kidneys by binding the preformed phosphates of the food and preventing their absorption and by binding the phosphates of the blood and causing their elimination through the bowel. The administration of sodium salts that can also produce an increase of the diphosphate and a corresponding decrease of the monophosphate is to be condemned, chiefly because sufficiently large doses render the urine permanently alkaline, thus favoring the deposit of concretions other than uric acid stones. They also interfere with gastric digestion and affect the corpuscular elements of the blood. Calcium salts have none of these deleterious effects. The author recommends the carbonate in 15 or more grains three times daily. The good results obtained in four cases of nephrolithiasis encourage further trial. [H.M.]

3.—See *American Medicine*, Vol. III, No. 25, p. 1053.

4.—See *American Medicine*, Vol. III, No. 25, p. 1039.

5.—See *American Medicine*, Vol. III, No. 24, p. 993.

6.—Intracellular Toxins of Pathogenic Bacteria.—V. C. Vaughan has studied the cell substance of the colon, diphtheria and anthrax bacillus, the micrococcus prodigiosus, and lemon and orange sarcines, and in all these organisms has found it more or less toxic to guinea pigs and rabbits, the toxicity varying with the virulence of the culture employed. By the use of sulfuric acid he has split off, in the case of the colon bacillus, a soluble toxin, which, when injected into animals causes symptoms and lesions identical with those obtained after injection of the unbroken cell. The part which remains is also toxic, but much less so than that split off by the acid. He believes that he has isolated the specific toxin of the anthrax bacillus by the same method. He reviews the work of other men along this line, and believes his own investigations show the toxin cannot be obtained except by chemical disintegration of the cell substance. From other experiments he concludes that the intracellular toxin of diphtheria is not identical

with the soluble toxin. Commercial diphtheria antitoxin protects against the latter but not against the former. This offers a plausible explanation for that natural immunity to diphtheria toxin possessed by animals which are not immune to diphtheria infection. [H.M.]

7.—See *American Medicine*, Vol. III, No. 25, p. 1048.

8.—See *American Medicine*, Vol. III, No. 25, p. 1049.

9.—Cyclic Vomiting in Children.—T. C. Ely describes the mechanism of vomiting, and the attacks which occur in gouty and neurotic children, due to faulty metabolism and elimination. He reports several illustrative cases, differentiating them from cases of bilious vomiting. The toxin probably acts directly on the vomiting center. He emphasizes the importance of being on one's guard for the vomiting of this gastric neurosis, distinguishing it from that due to kidney, brain, and other diseases. In severe cases he advises hypodermics of morphine and atropine with elimination by high saline enema and gavage, and in extreme cases hypodermoclysis and even intravenous injections of saline solutions. In less severe cases calomel and cocaine or Fowler's solution may be sufficient. [H.M.]

Boston Medical and Surgical Journal.

March 26, 1903. [Vol. CXLVIII, No. 13.]

1. Extensive Cavity Formation in the Central Nervous System, Presumably Due to *Bacillus Aerogenes Capsulatus*. EMMA W. MOOERS.
2. *Bacillus Shiga* in an Epidemic of Diarrhea. LAWRENCE W. STRONG.
3. Systemic Infection Due to Natural Teeth Conditions. D. D. SMITH.
4. Suppuration of the Frontal, Ethmoid and Sphenoid Sinuses: With Brief Report of the Treatment of 237 Cases. EDGAR M. HOLMES.

1.—Cavity Formation in the Central Nervous System, Presumably Due to the *Bacillus Aerogenes Capsulatus*.—E. W. Mooers reports the case. A man of 49 had advanced general paralysis, having been in the hospital for nine years. He was profoundly demented, with extensive paralytic evidences and confined to bed. He was well nourished and weighed 168 pounds. The patient's condition continued unchanged until a few days before death, when an increased restlessness was noted. On the morning of the day he died there was discovered a marked abdominal distension, a temperature of 104°, and respirations 48 to 58. He rapidly failed, and died in the evening. Necropsy performed 20 hours after death showed the abdomen and intestines enormously distended with gas, and there was gaseous emphysema of the subcutaneous structures. The most marked feature was a series of cavities in the brain substance, in both white and gray matter, and the meninges of the brain and cord were pigmented. Microscopic examination showed the presence in both brain and cord of a bacillus, presumably *B. aerogenes capsulatus*. The gaseous distension as well as the cavities in the brain were presumably caused by this bacillus. It was believed that death was produced by the entrance of the germ into the blood and the elaboration of a toxin. [A.B.C.]

2.—*Bacillus Shiga* in an Epidemic of Diarrhea.—L. W. Strong reports an epidemic on the Maine coast due to untraceable causes, and presenting several types of diarrhea. Simple diarrhea, which is nonbacterial, may, by increasing susceptibility to invasion, pass over into an infective type. This may be fermental, acting high up in the alimentary tract, or an ileocolitis may be produced if the bacterial action or absorption of toxic substances is delayed till the ileum or colon is reached. On this theory the same organism, whether a normal inhabitant of the intestine or introduced with the food, might produce either a fermental diarrhea or an ileocolitis. No definite relation has been found between any special form of bacteria and variety of diarrhea. In this epidemic the bacillus of Shiga was isolated from several cases of ileocolitis. The only way of determining the cause in various cases is by the serum reaction, as there is no way of separating them clinically. This organism is viable in the soil longer even than the typhoid bacillus and this suggests the means of distribution and production of epidemics. The stools and presumably the urine of all cases of infective diarrhea should be disinfected. [H.M.]

4.—Suppuration of the Frontal, Ethmoid and Sphenoid Sinuses.—After an elaborate paper dealing with the entire

subject, E. M. Holmes gives the results of his treatment. In the 16 cases of suppurative frontal sinus, 7 were relieved by removing obstructions in the middle meatus and draining the ethmoid cells. Four of these were cleansed through a cannula, but into the other three not even a probe would pass. Eight persisted after all internal treatment had been applied. Upon six of these he performed the external operation, and obtained good results in all but one. Ethmoid suppuration is in a labyrinth of cells, any one of which may be diseased. Fourteen in this series were discharged well in three weeks. Of the others 23 were well within two months, and 16 others within three months; 24 were apparently well after periods varying from three to six months, and 11 others after longer periods. The sphenoid cavity though large can be so thoroughly exposed and drained that the great majority of cases when not complicated are cured in a comparatively short time. In the 182 cases of pus in the sphenoid cavity there were only five of the non-complicated which were not cured by the end of six months. Eighteen cases were apparently well by the end of three weeks, 15 by the end of four weeks. Fifty-one cases were free from symptoms by the end of two months. Sixty-seven cases were under treatment between two and three months. Of the 26 remaining cases, 8 were discharged during the fourth month, 11 during the fifth month, and 7 during the sixth month.

Medical Record.

March 23, 1903. [Vol. 63, No. 13.]

1. Renal Decapsulation for Chronic Bright's Disease. GEORGE M. EDEBOHLS.
2. Specific Treatment of Diphtheria. GEORGE B. PHILHOWER.
3. The Psychic Element in Hay-fever. RAYMOND WALLACE.
4. On the Biologic Relationship of Proteids and on Proteid Assimilation. P. A. LEVENE.

1.—Renal Decapsulation for Chronic Bright's Disease.

—George M. Edebohls' conclusions after operating on 51 cases for chronic Bright's disease are summed up: In 47 instances double renal decapsulation was performed in every instance at a single operation; in four instances a unilateral renal decapsulation was done. Seven patients died within 17 days after operation; 7 patients died at periods varying from 2 months to 8 years after operation, the average being 20 months. Two patients do not show satisfactory improvement. Twenty-two are in various stages of satisfactory improvement, varying from 2 months to 15 months after operation. The urine of several of these is entirely free from albumin and casts, but they have not passed the probationary period of 6 months of normal urine, before which they are not entitled to a place in the list of cured. One patient, after a cure lasting 4 years, again has chronic Bright's disease, one kidney only being operated upon. Nine were cured of chronic Bright's disease and remain cured at periods after operation varying from 21 months to 10 years, the average duration being over 4 years. Three patients disappeared after leaving the hospital and no trace of them can be found. Attention is called to the fact that a number of these patients were operated upon in the very late stages of the disease, when little hope of benefit could be had. Of all patients who applied only two were refused operation. No surgeon should attempt the operation who is not familiar by experience with renal surgery. The operation for double renal decapsulation should in no case exceed one hour in duration, as the anesthetic is the dangerous factor. Rapidity and dexterity are prime requisites. The histories of heretofore unreported cases are detailed at some length, and the article is a rather exhaustive discussion of the operation, which the author has introduced into surgery as offering practically the only relief to those suffering from chronic Bright's disease. The most noticeable feature after operation is the prompt increase in urea. An increase from 6 grams previous to operation to 35 grams within a month after operation has been observed, the greatest relative gain being in the first two or three months. Casts, such as the waxy, fatty, epithelial and pus casts, which denote destruction of the secreting structure, disappear first, usually requiring 1 to 12 months or more. Granular and hyaline casts next disappear, albumin usually persisting for some time after all casts have disappeared. [A.B.C.]

2.—Specific Treatment of Diphtheria.—G. B. Philhower

emphasizes the importance of medical societies pronouncing against the misleading statements of cheap medical journals as to the value of antitoxin in diphtheria, and would have every physician who treats a fatal case without its use prosecuted for malpractice. He believes that severe cases are just as surely controllable with large doses as are mild cases with small doses if given early in the disease. The growth of the membrane should be arrested in the first 24 hours, its edges caused to loosen and turn up during the second 24, and it should crumble and come away in the third 24, or else the dose has not been large enough. Tonsillar cases do well with 2,000 units, nasal require from 4,000 to 6,000 units, laryngeal cases should receive from 6,000 to 10,000 units. When there is much glandular swelling the doses should be from 4,000 to 6,000 units. [H.M.]

4.—The Biologic Relationship of Proteids.—P. A. Levene has observed that if the serum of an animal acquires the power to form precipitins with one proteid of an animal it has the power to form them with other proteids of the same or closely related animals. Chemically different albumin, globulin, casein, etc., derived from the same animal have at least one part common to all of them, or, perhaps, may be regarded as derivatives of one substance, which is the nucleus of all the proteid material of that animal. We may look on them as isomers. He has also observed that a precipitin for a given proteid is capable of forming precipitins with the primary digestive products of the latter and vice versa. This property of forming precipitins against food proteids shows that the molecules of foreign proteids have to be reconstructed before they can be assimilated. The place of this reconstruction can be found only experimentally. It is not improbable that in pathologic conditions these proteids pass the digestive organs unchanged. [H.M.]

New York Medical Journal.

March 21, 1903. [VOL. LXXVII, No. 12.]

1. The Development and Ultimate Result of Medical Science. ANDREW F. CURRIER.
2. The Treatment of Felon. EDWARD WALLACE LEE.
3. Report of a Case of Epidemic Parotiditis, with Fatal Termination. W. J. S. STEWART.
4. A Study of Tuberculous Infection: Special Susceptibility of Childhood; Causes and Methods of Infection; Factors of Development of the Disease. F. M. POTTENGER.
5. The Intravenous Injection of Formaldehyd. WILLIAM L. BANER.
6. The Hemorrhagic Diathesis as a Factor in the Production of Hemorrhage Following Removal of Tonsils and Adenoids. FRANK H. WASHBURN.

1.—Development of Medical Science.—A. F. Currier in this address takes up the development of medical science from its beginning to the present time and calls attention to some of the work which remains unfinished. The article is interesting and instructive and should be read in the original as it does not lend itself to valuable abstract. [C.A.O.]

2.—Treatment of Felon.—E. W. Lee states that a general anesthetic is indicated in the severe forms. The hand and forearm should then be placed as near as possible in an aseptic condition and measures taken to control hemorrhage so that the extent of the disease may be clearly defined. An incision should be made from a few lines back of the inflamed area to the tip of the finger, down, if necessary, to the bone. All pus and sloughing debris should be removed with hydrogen peroxid, and the wound cavity washed with a 1-1,000 bichlorid of mercury solution. All diseased tissue should then be thoroughly removed, the wound cleansed again with peroxid and washed with bichlorid, and the whole cavity swabbed with pure carbolic followed by alcohol. After again washing with bichlorid an aseptic dressing should be applied. [C.A.O.]

3.—Epidemic Parotiditis.—A fatal case is reported by W. J. S. Stewart as occurring in a man of 27. Death occurred on the fifth day of the disease, and before the inflammation of the second infected gland had reached its height. The infection was exceptionally severe, as evidenced by the continued high temperature and delirium. He believes that the fatal termination was due to sudden failure of the heart, caused by the excessive strain to which that organ had been subjected by reason of the difficulty to respiration, from which the patient had been suffering for eight or nine hours previous to his demise. [C.A.O.]

4.—Tuberculous Infection.—F. M. Pottenger has thor-

oroughly reviewed the literature on this subject, and quotes statistics to show that although children are, with few exceptions, born free from tuberculosis, it is common in childhood, causing about 25% of the deaths occurring during the last quarter of the first year, and quite a large proportion of those during the second and third years. Nearly all cases of tuberculosis show involvement of the lymph glands; and if the fact that the process is furthest advanced is an indication, they are in a large percentage of cases to be considered the primary foci. Nearly all children show enlarged glands during the period of infancy and early childhood, of which investigation seems to show from 60% to 70% to be tuberculous; and of those chronically enlarged, even a larger per cent are so affected. A large proportion of those patients who, although infected, do not show acute symptoms during childhood, develop active tuberculosis in later life. In seeking the cause of this frequent infection, aside from the habits of the child and the carelessness of the parent bringing it in frequent contact with the bacillus, all those things which lower vitality at this time must be considered; and the author calls special attention to the fact that there is a connection which seems more than coincidence in the time that tuberculous infection takes place and the time that the child is most apt to suffer from catarrhal conditions of the stomach and bowels. [C.A.O.]

5.—Intravenous Formaldehyd Injection.—W. L. Baner gives a brief review of the case reported by Barrows, an account of which appeared in *American Medicine*, Vol. V, No. 6, and also of a case treated by Waitzfelder which was also one of puerperal sepsis and had been cured. The blood showed the presence of streptococci. The temperature, averaging about 105.5° F., had three separate times fallen below normal following a hypodermoclysis of normal saline solution, but within 24 or 36 hours in each instance had risen as high as ever. An intravenous injection of 750 cc. of a 1-5,000 formalin solution was then given. The temperature again fell below normal, but in 24 hours had regained its former height. A second injection was ordered, but by mistake the solution was made double strength, and the patient became rapidly cyanotic, so that the formalin had to be stopped. A saline infusion was given in its place, and the result was the same as from the first formalin injection. Forty-eight hours later her temperature was 101° F., pulse 120, and respirations 48. The author reports a case of pure streptococcus bacteremia occurring in a woman of 42, admitted to the hospital suffering from a scalp wound, and was also found to have a bronchopneumonia. Twenty-two days later she had a chill, after which the fever fluctuated daily between normal and 104° F. to 105° F. Streptococci in great numbers and pure culture were found in the blood. An intravenous injection of 250 cc. of a 1-5,000 formalin solution was then given. The following day the patient was better, but on the second day she was worse, and a second injection of 750 cc. was given. She continued to grow worse, and died three days later. An autopsy revealed areas of bronchopneumonia in both lungs. Cultures from the blood of the heart cavity were made separately, and in both series a prolific and pure growth of streptococci was found. The author quotes a case of ulcerative endocarditis treated by this method with no beneficial result, and further blood cultures showed no decrease in the number of microorganisms. He says it seems improbable that this treatment has any specific value in septicemia, and that normal saline will dilute the toxins equally well and with less probability of injuring the structures of the blood. [C.A.O.]

6.—Hematophilia and Amygdalotomy.—A case of dangerous hemorrhage occurring several hours after the removal of adenoids of the postnasal space and hypertrophied faucial tonsils is reported by F. H. Washburn. A hemorrhagic diathesis is considered the principal factor in the production of hemorrhage in this case. [C.A.O.]

Medical News.

March 23, 1903. [Vol. 82, No. 13.]

1. Spinal Concussion, So-called. CARL E. BLACK.
2. A Brief Consideration of the Mechanism of Mental States Encountered in Alcoholic Insanity, With Illustrative Cases. W. K. WALKER.
3. Scope of the Vaginal Section. H. J. BOLDT.

4. The Scope of Vaginal Section. HIRAM N. VINEBERG.
5. How Easily We Can Be Mistaken in the Diagnosis of Cancer of the Stomach. MARK I. KNAPP.
6. The Operative Treatment of Fracture of the Patella. RUSSELL S. FOWLER.
7. Some Physiologic Observations on a Crustacean Heart. GEORGE V. N. DEARBORN.

1.—See *American Medicine*, Vol. IV, No. 17, p. 648.

2.—Mechanism of Mental States in Alcoholic Insanity.

—According to W. K. Walker, alcoholic cases are, as a rule, too complex to be grouped under any simple classification. They present symptoms common to other forms of insanity with variations depending upon degree and duration of alcoholic poisoning and susceptibility of individual neural tissue. The modern tendency is to attribute the greater importance to the latter. Of the cases he reports, all had shown marked mental defects, but these seem to have been disregarded by the courts. Clinically they present widely varying pictures, but all show a definite mechanism of development following familiar psychopathologic laws. In cases of gradual mental deterioration produced by alcohol, long before marked mental disorder is noted, there may be manifestations of blunted moral and esthetic sensibilities and change in normal affections and emotions. Later, develop morbid ideas, suspicions, etc., having their origin in some past occurrence or some vague sensory disturbance, attention becoming concentrated upon them. Misinterpreted sensations gain increased importance, and the patient explains everything in the light of accompanying emotions, which are nearly always in the key of fear. The higher reasoning faculties become more and more involved until finally they are not to be reckoned with as inhibitory or restraining forces; the emotional element now in full sway impels to the commission of acts which are the logical outcome of the idea to which the field of consciousness is narrowed. This is the mechanism of even those cases in which purpose and motive have apparently been present. In their last analysis the acts are seen to be actuated by self-preservation, and to be instinctive. It is a reproach to medical science that these should be left to the tender mercies of the law. Recognition of early deviation from a normal mechanism might, in many instances, prevent it from reaching a dangerous development. [H.M.]

3.—Scope of Vaginal Section.—H. J. Boldt prefers vaginal operation to abdominal section. He says many who eight years ago opposed vaginal operations are now their most earnest advocates. Meantime his own views have been modified and after a study of the subject, based upon more than 500 vaginal sections, he concludes that its application is much more limited than he formerly supposed. He would employ this method for suppurative salpingitis and ovarian abscess and in all instances of pelvic suppuration in which it is evident that the pus can be reached through the vagina. With the exception of such instances as described he thinks conservative surgery upon the uterine adnexas can best be performed by abdominal celiotomy. Diseased ovaries or small ovarian tumors should be removed by way of the vagina unless the adhesions are too extensive; but abdominal section is generally to be preferred for ectopic gestation and also for myomectomy for certain kinds of tumors. Displacements of the uterus are often indications for colpoceliotomy, but for backward displacements Boldt prefers shortening the round ligaments through an abdominal incision. [W.K.]

4.—Scope of Vaginal Section.—According to H. N. Vineberg vaginal section finds its scope in the following conditions: 1. Pelvic abscess. 2. Pyosalpinx and ovarian abscess under certain conditions (a) when the abscess is situated in the Douglas sac and is fairly movable; (b) when the abscess sac is not large and can be readily removed through an anterior vaginal incision; (c) in pyosalpinx and ovarian abscess during the acute stage, if the pus is accessible through a posterior vaginal incision, to tide over the dangerous period; and sometimes this palliative measure may prove curative. 3. Conservative surgery in diseased adnexas. 4. Ovarian cysts. 5. Myomectomy. 6. Ectopic pregnancy (a) in obscure cases to aid in diagnosis; (b) in cases in which it is evident there is no further hemorrhage, and when the already diffused blood has formed a hematocele in the Douglas sac at the base of the broad ligament. [W.K.]

5.—Mistaken Diagnosis of Cancer of the Stomach.—

M. I. Knapp reports cases in which there were found what is alleged as being the "cardinal" symptoms of cancer, both proving in reality, however, excellent examples of gastritis fungosa. Diagnosis should never be made without a test-meal examination. Chocolate colored vomit does not necessarily mean blood. It may be due to a mold. [H.M.]

6.—Operative Treatment of Fracture of the Patella.—

R. S. Fowler says operative treatment is contraindicated in those suffering from intercurrent disease, which would make operation dangerous; in longitudinal fractures; as a rule in comminuted fractures, and in transverse fractures in which rupture of the capsule has not occurred—a rare condition. Without operation there will be only fibrous union except in the rare cases in which there is perfect apposition without intervening periosteum. At operation great care is observed to prevent the possibility of infection, no hand or instrument being permitted to enter the joint-cavity. The knife used in cutting the skin is not used for the deeper structures. The seat of fracture is exposed, the torn fringes removed, two holes are drilled through each fragment, the drill emerging in every instance in the fractured surface slightly away from the articular surface. Chromicized catgut is used to approximate the fragments, lateral sutures of the same material being passed through the fibrous structure on either side of the patella. Nine cases are reported. [A.B.C.]

7.—Physiologic Observations on a Crustacean Heart.

—G. V. N. Dearborn announces as the result of his investigations that there is strong physiologic evidence that the heart of *Daphnia* has nerves connected with it, the stimulation of which inhibits its action and evidence of a similar sort, although negative, that the heart has no augmentor nerves. This heart appears to be eminently automatic and very independent, especially in its rate of beating, of agencies usually modifying or even destructive. Puncture of parts of brain and body, especially just ventral to the heart and in a supposed caudal ganglion, inhibits the heart for a few minutes only. Induced electricity, unless of an intensity which disorganizes the protoplasm, has no effect beyond momentary inhibition. Division of the animal into parts inhibits the heart for a time, or permanently, according to the mode and place of section. Openings of the circulation channels lessens both the force and average size of the beating heart. When a *Daphnia* dries up the heart continues to beat after all the other organs are still. Absorbed beef-serum increases the force of the beat and the pulse-rate, but not beyond the normal for that individual. Alcohol, nicotine, chloral, aconite, chloroform, curare, and digitalis act in general as on other hearts. The embryonic pulse-rate is half that of the adult, which about 240. The advantages of using small, transparent animals, as *Daphnia*, in research is perhaps not adequately appreciated by physiologists. [H.M.]

Philadelphia Medical Journal.

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1. The Increase of the Use of Cocain Among the Laity in Pittsburg. THOMAS G. SIMONTON.
2. The Use of the Electrothermic Angiotribe in Lieu of the Employment of Ligatures in the Open Operation for the Relief of Varicocele. ORVILLE HORWITZ.
3. Additional Notes on Organacidia Gastrica. MARK I. KNAPP.
4. Mouth Infection, Due to Natural Teeth. D. D. SMITH.
5. Psychopathic Epidemics. JOHN B. HUBER.

1.—The Increase of the Use of Cocain Among the Laity.—T. G. Simonton details the increased use of cocain among the laity of Pittsburg. Many of the drugstores of Pittsburg make a very large annual profit from the sales of cocain, any one being able to purchase the drug. It is a shocking revelation of the use of the drug by the citizens of the above city, and the comparative ease with which it is procured. The two types of cocain habit are occasional and continuous, social and solitary. The social indulgence is becoming more common. Many of the habitues resort to the use of the hypodermic needle, but the present day method is to "snuff it," so this requires one to be more alert for its detection. Two of the prominent symptoms of cocain poisoning are self-consciousness and elation, and when present they are a great aid in making a

diagnosis. The treatment of the cocain habitue is described. [F.C.H.]

2.—The Use of the Electrothermic Angiotribe in Operating for Varicocele.—Orville Horwitz claims the following advantages for the Downes instrument over the simple angiotribe suggested by Freeman, in lieu of the employment of ligatures in the open operation for the relief of varicocele. The substitution of a more scientific instrument, a less crude and less dangerous method than that depending upon violent traumatism so as to produce hemostasis; there is less danger of secondary hemorrhage; the operation is not followed by pain; the use of the electrothermic instrument does not produce orchitis, a condition commonly attending operations in the vicinity of the cord. The electrothermic angiotribe has been employed successfully in place of ligating the cord after castration, as well as for resection of thickened and vascular sacs of large hydroceles. [F.C.H.]

3.—Organacidia Gastrica.—Mark I. Knapp details some additional notes on this condition. He believes that we are forced to admit that every pathologic-anatomic change, traumatism excepted, must be preceded by pathologic-chemic conditions. Such a pathologic-chemic condition is organacidia gastrica. Organacidia gastrica always means either absolute or only relative hypochlorhydria. It may as well show hypoacidity, and that is the fact in very many cases. It is the natural course to begin with hyperacidity and advance to hypoacidity. The prognosis of uncomplicated cases is very favorable. A very frequent complication is organacidia enterica with or without insufficiencia pylori. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

EDITORIAL COMMENT

The Leukocytosis of Measles and Rötheln.—Combe, in 1899, described a new sign characteristic of measles in the period of incubation, consisting of a polymorphonuclear hyperleukocytosis without any other morbid symptom. During the last two days of the period of invasion or of the enanthem, and during the entire period of the exanthem, the blood presents a decided hypoleukocytosis, which is due to diminution in the number of polymorphonuclear cells. There is no change in the lymphocytes. The observations of Combe have been repeated by Plantenga.¹ The leukocytes were not stained, but were counted after diluting with the fluid of Prus, consisting of 10 parts each of a 0.1% solution of osmic acid and of a 0.1% solution of chromic acid, and 1 part of glacial acetic acid. Counts were made in 13 cases of measles and in 5 cases of rötheln. The results as regards measles confirm the observations of Combe. The hypoleukocytosis is sometimes accompanied with a marked lymphocytosis, usually attended with violent and persistent diarrhea and general adenopathy. After the exanthem has subsided, the number of leukocytes return to normal unless there are complications. The same modifications of the blood as in measles were found in rötheln, and from this Plantenga concludes that it is identical with measles. The differences presented by these two diseases may, according to the author, be accounted for by differences in the degree of virulence of the causative agent, or by differences in the portal of entry of the organisms. The possibility of diagnosing measles and rubella during the incubative stage by means of blood-examinations affords an important auxiliary for the institution of prophylactic measures.

REVIEW OF LITERATURE

Experiences of an Epidemic of Cerebrospinal Meningitis.—E. T. Smith² bases his article on 36 cases of epidemic cerebrospinal meningitis observed in Dublin during 1900. These cases showed the wildest diversity in duration and severity

¹ Arch. de Méd. des Enfants, March, 1903.

² The Practitioner, March, 1903.

and inconstancy of symptoms and signs, even those most frequently present varying remarkably as to their appearance after onset, their degree, and their duration. Hence Smith does not attempt to describe a "typical case," but discusses *seriatim* the most constant and prominent clinical phenomena. The oldest patient was 47, the youngest 2, and the mortality 14, approximately 38%. The time of death in 12 cases whose onset was definitely determined varied between the first and two hundred and forty-sixth days of the disease. Diagnostic stress could not be laid on the situation of the pain in headache, which was present in every case. It was more frequently frontal than occipital. Smith believes that textbook writers have confused pain which is strictly headache and pain in the cervical spine, of which these patients so often complain. Kernig's sign was present without exception. Smith has also found this present in children suffering from severe enteric fever. The following points regarding the sign should be remembered: (1) It is sometimes more marked in one leg than the other; (2) in any nervous disease in which the legs are kept flexed long enough for a degree of contraction to develop there is pain and resistance to extension. This is not Kernig's sign; (3) normally in those who have not practised the feat the required movement is difficult and painful. Treatment was directed mainly to the relief of headache, for which morphin hypodermically was the only efficient agent. Autopsy findings in 13 cases varied. The severest inflammation was most frequently found on the superior surface of the cerebellum. [A.G.E.]

Xeroform in Pediatrics.—Xeroform, chemically tribromophenol bismuth, has been extensively used as a wound dressing, and also internally, to a limited extent. It is not only a good astringent, but also a powerful intestinal antiseptic, being split in the intestinal canal into tribromophenol and bismuth oxide. E. Toff¹ has used it for seven years in the treatment of acute and chronic diarrheas in children, with very satisfactory results. It is tasteless and odorless, and the author has never observed toxic symptoms from its use. To the antiseptic and astringent action of the drug is to be added the analgesic effect of the bromin, which makes the administration of opiates unnecessary. It may be used in doses of 0.5 to 1.0 gm. (grs. 7½ to 15) daily, for children under two years, and 2.0 gms. (grs. 30) daily for older children. The author has used it in diarrheas, gastritis, abnormal fermentations, dysentery, and typhoid fever. He has also found it very useful externally, as a dusting powder for wounds, intertrigo, moist eczema, burns, suppurative otitis media, and scrofulous affections of the eye. [B.K.]

Tannoform in Intertrigo.—S. E. Ostrowski² has employed tannoform in the intertrigo of infants with strikingly favorable results. More than 50 cases were observed, all children under 1 year. The remedy was prescribed either as a dusting powder mixed with an equal part of starch or in 10% ointment-form with vaselin. The affected area was first washed with 2% boric acid and the ointment applied. The effects were prompt and marked, owing to the astringent as well as antiseptic properties of the drug. The most neglected cases responded rapidly to this treatment, which the author pronounces to be invaluable in the intertrigo of infancy. [L.J.]

The Prognosis in Pneumonia.—After stating that the mortality from pneumonia exceeds that from any other acute disease, and that the already large deathrate is steadily increasing, J. M. French³ considers the prognosis as modified by age, sex, constitution, and habits of life, extent and portion of lung involved, complications, severity of the epidemic, pulse, respiration, temperature, and treatment. Many tables from the report of Sears and Larrabee are incorporated in the article. Of individual symptoms, the most reliable is to be placed upon the pulse, the mortality from pneumonia being in direct ratio to the frequency of the pulse. French does not agree with the conclusions of those writers who state that pneumonia is uninfluenced by treatment, or even with the statement that the mortality does not vary materially even under the most diverse methods of treatment. Judging from either statistics or clinical observation, he believes that the most which can reasonably

be said is that no one mode or system of treatment has shown itself so superior to every other as to lead to its general acceptance as the best. [A.G.E.]

Sanatogen in Pediatrics.—Sanatogen is a combination of 95% casein with 5% sodium glycerophosphate. It is easily dissolved, and is very readily absorbed. E. Fromm¹ has tried this preparation as an addition to the food in weak and convalescent children, with most favorable results. The doses given varied from a few grains for infants to one or two dessertspoonfuls for older children. It may be dissolved in water, milk, or soup. In almost all the observed cases there occurred an increase in weight and improvement in the character of the stools. In some cases the gain in weight started one or two days after the first administration of sanatogen. [B.K.]

Electrolysis in Stenosis of the Esophagus.—J. B. Fel-doritch² recommends electrolysis in the treatment of cicatricial esophageal strictures. Without claiming decidedly radical curative powers for the method, it may be safely relied upon to effect rapid and comparatively painless dilation. In three or four sittings, each lasting two or three minutes, the author succeeded in stretching a stricture with a diameter of 3½ mm. to 13 mm., a feat which it would require months to achieve by means of the ordinary dilating measures. Recurrences are apt to take place even after electrolysis, but they come considerably later, and valuable time is thus gained. From a palliative point of view, no other method can compete with electrolysis. The technic is extremely simple, and consists in attaching an esophageal sound to the constant current. A galvanometer is indispensable. With weak currents and short sittings, no harm will result to adjacent organs. [L.J.]

Differential Diagnosis Between Diphtheric Croup and Morbid Conditions Simulating It.—A. Delcourt³ discusses at length the differential diagnosis between diphtheric croup and (1) acute laryngitis that may or may not be associated with pulmonary affections and complicated with spasms of the glottis; (2) laryngitis occurring in measles before the eruption, during the course of the disease, and during convalescence; (3) laryngitis stridulous or false croup; (4) foreign bodies in the respiratory tract; (5) adenoids and hypertrophy of the tonsils; (6) retropharyngeal abscess; (7) polypus of the larynx and other tumors; (8) edema of the glottis; (9) spasm of the glottis or phrenoglottic spasm; (10) pseudomembranous non-diphtheric tracheobronchitis; (11) stridor of the newborn; (12) asthma. [J.H.W.R.]

Disease Simulating Acute Rheumatism.—Reference to statistics bearing on the treatment of acute rheumatism with the salicylates elicits the fact that a small proportion of the cases are little, if at all, influenced by their administration; the fever goes on for weeks and weeks, and the pains and sweating remain. C. J. Macalaster,⁴ from his own observations, has concluded that these resisting cases are not rheumatic fever, their clinical histories as well as their relation to the salicylates are different, pointing to a totally different toxin. In these conditions the temperature is remittent, the joint pains tend to be symmetric and to spread to new joints without leaving those affected, not flitting about as in acute rheumatism. The temporomaxillary and cervical joints are often affected, and the small joints of the hands and feet and the sternoclavicular articulation are not infrequently attacked as well as the larger joints. [H.M.]

Tidal Percussion of the Apices of the Lungs.—E. H. Colbeck⁵ insists that the phenomena which may be elicited by so-called "tidal percussion" over the apices of the lungs are commonly and widely misrepresented and misunderstood. He adduces (1) anatomic and physiologic and (2) clinical evidence to show that the limits of supraclavicular resonance do not increase with full inspiration and decrease with expiration, as currently taught. Under the first head it is claimed that the fascial coverings of the apices are not capable of distention, that the movements of the upper part of the thorax and the clavicle diminish the distance of the apex of the lung above

¹ Zentralblatt für Kinderheilkunde, March, 1903.

² Russki Vratch, January 11, 1903.

³ Medicine, March, 1903.

¹ Zentralblatt für Kinderheilkunde, March, 1903.

² Russki Vratch, January 4, 1903.

³ Journ. Méd. de Bruxelles, February 26, 1903.

⁴ Medical Press and Circular, December 3, 1902.

⁵ The Practitioner, March, 1903.

the clavicle during the inspiration, and that the apical portion of the lungs tend to collapse during that period. Under the head of clinical evidence it is stated that inspection of the supraclavicular fossas, in conditions both of health and disease, more especially in thin subjects, not uncommonly reveals sucking in and descent of these spaces during a full inspiration. [A.G.E.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

EDITORIAL COMMENT

Enterostomy in the Treatment of Intestinal Obstruction, Peritonitis, and Typhoid Perforation.

—The making of an artificial anus for the relief of obstruction or great abdominal distention in cases of peritonitis probably dates back to an early day in surgery. Greig Smith, in his *Abdominal Surgery*, published in 1897, considers this operation indicated in desperate cases of obstruction in which there is imminent risk of death from distention, vomiting, and toxic poisoning. In such cases the first coil of dilated bowel that is met on opening the abdomen is brought to the surface, incised and drained without any regard being paid to the removal of the cause of obstruction. He also advises this procedure in cases of obstruction in which the cause has been removed but in which there is still a great deal of distention, and also in cases in which the cause of obstruction cannot be removed or cannot be found. While enterostomy is frequently employed in such cases by many surgeons, its value is perhaps not sufficiently appreciated. Every operator of experience recognizes the fact that patients suffering from intestinal obstruction are far more ill than their general condition at first seems to indicate. If an extensive operation be undertaken in such cases, the patient almost inevitably succumbs. Enterostomy might, no doubt, well be employed in many of these cases which at first sight do not seem so desperate. If obstruction is caused by adhesions about an appendix abscess or some other intraabdominal focus of infection, it would be impossible to remove it without soiling the general peritoneal cavity. In such cases enterostomy is certainly the method of choice. At the thirty-first German Surgical Congress, Doyen,¹ of Paris, called attention to the treatment of acute general peritonitis with distention by making temporary enterostomy, and Heidenhain presented a paper in which he advocated its use in the treatment of intestinal obstruction. Doyen has found the best results by employing enterostomy both in the ileum and in the upper part of the jejunum in cases of peritonitis, after the usual measures of cleansing the peritoneum have been carried out. Heidenhain, at the same congress, also advocated the use of enterostomy in cases of obstruction accompanied by peritonitis. In many such cases the obstruction is a temporary one caused by the pressure of paralyzed and overdistended loops of intestine on some other loop which is bent upon itself, and this obstruction is relieved spontaneously as soon as the bowel is emptied. An entirely new indication for the employment of enterostomy is suggested by Escher,² surgeon to the City Hospital in Trieste, Austria, who advocates its general employment in the treatment of all cases of typhoid perforation. In looking over the statistics of typhoid perforation, he finds 10 cases treated by this method with 40% of recoveries, which is in striking contrast to the 20% to 23% of recoveries which have followed suture of the perforation. He reports four cases which he has treated personally with three recoveries, and believes that it is better to bring the perforated loop of intestine into the abdominal wound, thus making an enterostomy, than to attempt suture

except in the rarest cases. Suture is occasionally justified, Escher believes, very late in the disease; when the patient is in good condition, when the operation is undertaken early, and when there is a slight amount of distention. This method of treatment not only saves time, but drains the intestine and prevents the development of distention and paralytic ileus. There are constantly appearing in the literature so-called new operations, new methods and new apparatus. Many of these discoveries like enterostomy are not new, and simply show that practical men when faced with conditions similar to those which have been previously met by others, naturally fall into the same or similar ways of treating them. In most cases it is not a desire to claim originality for the work which has been previously done by others, but simply that such work has been overlooked. We are not aware that Doyen or Heidenhain claim any originality for their advocacy of more general use of enterostomy, but they do deserve credit for again directing attention to a simple and effectual means of treatment which has much to commend it to those who have frequently to deal with the acute abdominal conditions mentioned. Escher's suggestion as to the routine treatment of typhoid perforation by bringing the perforation into the wound and thus forming an enterostomy is, so far as we know, a new one, this having been done previously only in cases in which suture was difficult or impossible. The results which he finds in a limited number of cases which have been previously treated in this way and in his own four cases encourage a further trial of this method.

REVIEW OF LITERATURE

Nephrectomy for Hypernephroma.—The case reported by Bean¹ is that of a woman of 42, who six months before had noticed a lump in the left side. This gradually increased in size and became tender and painful. The diagnosis of cystic kidney was made and nephrectomy performed. This disclosed a tumor of the kidney measuring 6½ by 5½ inches. Microscopic examination showed the tumor to be a hypernephroma. A case of sarcoma of the kidney in a child is also reported, Bean stating that the abdominal incision for nephrectomy in these cases is preferable to the lumbar incision. The pedicle is ligated after the tumor is removed, first having been clamped with forceps. This allows free access to the parts involved. [A.G.E.]

Recurrent Appendicitis.—F. C. Southam² bases his remarks upon the results by operation in the treatment of 50 cases of recurrent appendicitis. Of these 39 were males, 11 females. In 5 cases there had been only one distinct attack; in 10 cases there had been two well marked attacks; in the remaining 35 cases there had been three or more attacks. In almost every case the lumen of the appendix was either partially or completely occluded in some part of its course. In 3 cases collections of pus were shut off in the distal portion of the appendix which was dilated into a small cyst. In 6 cases fecal concretions were present. In the remaining cases the contents consisted of mucoid or mucopurulent fluid. In no instance was a foreign body present. In 11 cases a localized suppuration existed outside of the appendix, chiefly associated with perforation of its wall. In 2 cases the patients had previously been operated on for appendical abscess. One case had been operated on a year before, the abscess drained, the appendix not removed. The wound healed spontaneously and there was no trouble until a year subsequent when another abscess formed. In many cases marked lesions were found in the appendix, there having been entire absence of local signs or symptoms during the quiescent period. All the patients recovered. [A.B.C.]

The Radiographic Diagnosis of Renal Calculi.—After quoting a few successful cases in which kidneystones were found by the radiographer prior to the operation, Kienboeck³

¹ Zentralblatt für Chirurgie, 1902, xxix, p. 78 (Beilage).

² Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie, 1903, xi, 104.

¹ Northwest Medicine, January, 1903.

² British Medical Journal, January 10, 1903.

³ Wiener klinische Wochenschrift, December 11, 1902.

says in his opinion in thousands of cases the stones are not discovered. This is due to inexperience and errors in technic. He describes his own method carefully, laying stress on the use of a partially evacuated tube, which must be lit up intensely. A purgative must have acted the day before, and palpation indicate a fairly empty intestine. A lead diaphragm should be used, and the tube should be brought as near to the abdomen as possible. Exposure is best made with breathing pauses of from 10 to 40 seconds, as the movements of the kidney cause considerable blurring. [E.L.]

Hystero-Traumatism: Convulsions Cured by Excision of a Cutaneous Scar.—M. F. Mouisset¹ describes the case of a man of 43, who, 16 years before, had received a blow on the head, this causing a wound of apparently little gravity. As a sequel, however, the man was the subject of convulsive, epileptiform seizures which were preceded by pain and pricking sensations in the scar that resulted from the wound. Medical treatment availed nothing. Excision of the scar was followed by cure. The larger part of Mouisset's article is devoted to a discussion of the causes of cure in these peculiar cases. He concludes that different hypotheses may be invoked in different cases. In some hysterical subjects who desire operation and have great confidence in the surgeon, the cure is really by suggestion. The destruction, or anatomic and physiologic modification, of the epileptogenous zone caused by the scar is the cause of cure in some cases. Surgical anesthesia plays a role in still other instances. [A.G.E.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

The Use of Bossi's or Other Metallic Dilators.—A. Ostreil² reports four cases of eclampsia, in three of which he used Bossi's dilator and in one Frommer's. With the latter the dilation occurs more easily and uniformly, but the points of the instrument are too thick to permit their ingress into the narrow cervix of a primipara unless first enlarged in some other manner. In no case did he detect any laceration from the use of a metallic dilator, but in certain cases in which it was important speedily to end labor the instrument was invaluable. Leopold Meyer states that he agrees fully with Zaugeneister that this instrument should not be used in cases of placenta prævia, since its use might increase the hemorrhage, and in placenta prævia the patient has often lost much blood before the arrival of the physician. The aim is not to hasten delivery, but to hasten the control of the hemorrhage and so gain time to strengthen the patient. In such cases a metreurynter is preferable. But with indications for a speedy delivery he recommends Bossi's instrument. In his experience the fear of hemorrhage from laceration of the os or cervix is unfounded. The greater the resistance and the longer the cervix the more time required for the dilation. He has used Kaiser's instrument also, but it is too short and fills the vaginal passage so completely as to prevent following the dilation by either eye or finger. It is eight-bladed and suitable in construction. Perhaps the advantages of both might be united in one. A. Callmann,³ however, gives the preference to manual dilation as equally practicable in most cases, and less liable to produce cervical laceration. Then the metallic dilators have this disadvantage, they lighten the purse and make heavy the instrument case. He deems manual dilation worthy of further trial. [W.K.]

Care of the Perineum During Labor.—E. V. Davis³ details the precautions used to prevent laceration of the perineum, and states that in the last 514 cases confined in the obstetric clinic for the benefit of the students of Rush Medical College but 18 cases of laceration occurred. Of these cases 9 were multiparas. In a number of them the labor was directed by students. Ten of the 18 had but one or two stitches, and the most severe required but four. Episiotomy was formerly employed in certain cases, but attention to the measures out-

lined has decreased its necessity so that it was not employed once in the 514 cases in question. All primiparas and most multiparas are placed in the left lateral position when the presenting part reaches the pelvic floor. Chloroform is administered unless contractions are gentle. Direct pressure is applied to the head when it appears at the vulva. Hohl's position of the hand is commended. Pressure is applied to the jaw and lower part of the face by the method of Ritgen. Finally, the head is lifted out with a slight rotary motion. [A.G.E.]

Reproduction of the Sacrouterine Ligaments for Prolapsus Uteri.—E. Stanmore Bishop¹ claims that the true ligaments of the uterus which preserve it at its normal level and prevent prolapse are the fundopubic or round ligaments in front and the sacrouterine or retrosacral ligaments behind. Of these the latter are by far the more important. Their relative shortness, the position of their implantation below the main bulk of the uterus, their coordinate action with the vesical attachment in front, all render them more effective in maintaining the uterus in its normal position than the comparatively longer round ligaments which act upon the fundus. To ventrofixation, which he has many times performed, Bishop sees many objections and mentions vaginofixation only to condemn it. He states the anatomic and physiologic objections to these procedures and contends that the true remedy for any severe prolapse is the reproduction of the sacrouterine ligaments, since in those cases in which they are absolutely torn through no amount of rest will reunite them. Torn fibers retract and atrophy from disuse. In the upper extremity of the posterior fornix a sufficiently firm resistant material is available which, while firmly attached to the cervix, yet is of sufficient length between its most superior point and that blended with the latter to permit of normal freedom of movement. It is this which is utilized as the new sacrouterine ligament. Its superior surface is covered with peritoneum. If this is denuded by removal of a short, narrow strip its connective tissue surface is bared for attachment to the parietal peritoneum behind; the best point of attachment is between the rectum on the inner side and the ureter on the outer, its height on the sacrum varying with each case. The technic of the operation is given in detail. Bishop has performed the operation ten times with uniformly good results. It claims to be a rational attempt to attack the problem of prolapsus uteri in a scientific manner. [W.K.]

Placenta Prævia Without Hemorrhage.—Dr. Burger² says that he, when called to a case of labor, has many times diagnosed a placenta prævia to the astonishment of the midwife, who thought it not possible without hemorrhage. If there is a well distended os uteri and there are no labor pains present, the presenting placenta may cause no hemorrhage. In placenta marginata the hemorrhage first begins during labor. Perhaps it is here that edema and hydramnios occur instead of hemorrhage. Burger describes the technic of delivery in a case of this kind. [W.K.]

The Ligation of the Hypogastric and Ovarian Arteries on Both Sides in Inoperable Uterine Carcinoma.—O. Th. Lindenthal³ gives the history of three cases of inoperable cancer of the uterus in which ligation of the hypogastric and ovarian arteries was employed with a favorable effect upon the hemorrhage. The advance of the cancer was not restricted, but the fetid discharge was improved by a simultaneous curetment. In two cases the general condition was improved by the cessation of hemorrhage, but in the third cachexia was so severe that improvement seemed no longer possible. The writer cites cases of Kronig's in which the hemorrhage ceased after this palliative treatment. After reviewing a number of other cases he concludes that the ligation of the hypogastric and ovarian arteries is to be recommended in those cases in which inoperable cancer has not extended far into the vagina, in which there is little or no cachexia, and the threatening hemorrhages can be controlled in no other way. If in any case the abdomen has been opened to perform a radical operation which is found impracticable, then this palliative procedure should be carried out. [W.K.]

¹ Lyon Médical, February 22, 1903.

² Zentralblatt für Gynäkologie, March 14, 1903.

³ Illinois Medical Journal, March, 1903.

¹ Lancet, March 14, 1903.

² Münchener medizinische Wochenschrift, February 17, 1903.

³ Zentralblatt für Gynäkologie, March 7, 1903.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPELMAN

REVIEW OF LITERATURE

Solubility of Iodin in Glycerin.—Catillon¹ calls attention to the fact that iodine is almost as soluble in glycerin as it is in acetone. He has been able to obtain a solution of 1 gram (15 grains) of iodine in 2 grams (30 minims) of glycerin by heating the mixture in a closed vessel at a temperature between 250° and 300° F. This solution has the color and odor of free iodine. It does not give off irritating fumes of hydriodic acid and other substances as does the solution of iodine in acetone. The author believes that the iodine does not undergo any reaction since it separates in crystals by sublimation or in the form of a fine sediment by the addition of water. Glycerin favors the absorption of iodine and the solution is preferred to the tincture of iodine when it is necessary to act on the deeper tissues or when a milder and more prolonged action is desired. [L.F.A.]

Treatment of Metrorrhagia.—Lutaud² directs that a dessertspoonful of the following solution be given every two hours:

Ergotin	2 grams (30 grains)
Alcohol	3 cc. (45 minims)
Distilled water	135 cc. (4½ ounces)

Vaginal injections of hot water 110° F. may also be used with advantage. Curetment should be practised in metrorrhagia following miscarriage and in those cases in which the loss of blood is due to retained placenta or to polypi. [L.F.A.]

Pyrogallol Triacetate in the Treatment of Nonparasitic Skin Diseases.—Clau³ advises pyrogallol triacetate in a 20% paste for the eczemas seen in scrofulous children. The ointment should be made with vasoline instead of vaselin and the remedy applied with a bandage, to remain in place for three days. A cure follows in the course of a few days. [W.E.R.]

Eukinase and Pancreatokinase.—Hallion and Carrion⁴ discuss the physiologic properties and the therapeutic applications of these substances. Eukinase is an extract from the duodenal mucous membrane of the pig; it is a yellowish powder, which contains the enterokinase of Pawlaw in a very active form. Eukinase is indicated in various acute and chronic affections of the intestines, either of primary origin or secondary to infectious diseases; in intestinal indigestion it is also of great value. Pancreatokinase is a combination of pancreatin and eukinase, which is not only eupeptic, but also a powerful digestant. In order that these substances may not be acted upon by the gastric juice, they may be given either in gluten capsules or incorporated with a gluten paste which, after desiccation, is formed into granules. [L.F.A.]

A New Method of Administering Chaulmoogra Oil.—H. Danlos⁵ recommends the administration of chaulmoogra oil by the rectum when it cannot be taken by the stomach. An emulsion is prepared by mixing 12 cc. (3 drams) of the oil with 75 cc. (2½ ounces) of warm milk and thoroughly beating with a fork. This is administered after the patient has evacuated the bowels; he is then directed to remain in bed for two or three hours. [L.F.A.]

Bromocoll in Pruritus.—Joseph⁶ advises the use of a 10% solution of bromocoll to relieve the itching in pruritus, lichens simplex, etc. [W.E.R.]

The Preparation of Colloidal Silver.—Danlos and A. Cothereau⁷ give the following method of preparing colloidal silver: 1. 100 grams (3½ ounces) of citric acid is dissolved in distilled water, and ammonia is added until the color of phthalin is obtained; enough water is then added to make 500 cubic centimeters (1 pint). 2. 186 grams (6 ounces) of ammoniacal ferrous sulfate is dissolved in 500 cubic centimeters (1 pint) of distilled water. 3. The two preceding solutions are mixed;

this mixture is still further diluted by the addition of 1½ quarts of distilled water, and into it is gradually poured 100 cubic centimeters (3½ ounces) of a 20% solution of silver nitrate, care being taken to stir constantly while pouring. A reddish-brown precipitate is formed and allowed to settle. The supernatant liquid is poured off and the precipitate placed on a rapid filtering apparatus, washed with a small quantity of water and then dried. These different manipulations must be performed rapidly in order to avoid the action of the air and light as much as possible. The precipitate must be dried in a vacuum over sulfuric acid and protected from the light, or in a drying-stove at a temperature of 122° F. The product thus obtained occurs in small masses, having a metallic reflex and containing 97% of silver with traces of iron and citric acid. It is completely soluble in water, and its solutions will not pass through the membrane of a dialyzer. The metal is precipitated by acids, and the addition of bromine, chlorine or iodine causes the formation of silver bromide, chloride or iodide. [L.F.A.]

Observations on the Action of Soluble Silver.—A. T. Dvoretzky¹ reviews the literature and reports his own experience with soluble or colloidal silver introduced into therapeutics in 1897 by Credé. Rubbed into the skin in the form of an ointment colloidal silver is absorbed and carried along by the blood, exerting its influence locally and generally. The remedy may therefore be applied far from the seat of disease and good results be obtained. The effects of colloidal silver, probably due to its germicidal action, are as follow: An almost instantaneous general improvement, fall of temperature, better pulse, and disappearance of subjective septic symptoms. The remedy is highly potent in local inflammatory or infectious processes caused by streptococci or staphylococci, such as phlegmon, erysipelas, furunculosis, glandular swellings, excepting advanced stages with softening and necrosis of tissues. The author had no opportunity of testing soluble silver in general sepsis and puerperal sepsis, but is inclined to expect great results from the remedy in the future. [L.J.]

Intravenous Injections of Collargol.—Thiroloux² reports a case of pneumonia in an old person, which was successfully aborted by the intravenous injection of colloidal silver or collargol. This substance was used in the strength of 1 to 200, of which 6 cc. (1½ drams) was employed at each injection. This drug has been used by several investigators for the purpose of combating acute infections, but with widely different results. Dabot used it in a case of bronchopneumonia with good results. Widal tried it in the treatment of infectious endocarditis, but no amelioration resulted; in this case the condition had been present for two or three months, which may explain its unfavorable influence. Chauffard employed intravenous injections of 10 cc. (2½ drams), representing 1½ grains of collargol, in a case of staphylococcal septicemia following typhoid fever with no effect. Huchard has obtained no definite results from its use. On the whole, effects of the drug are uncertain. [L.F.A.]

Abortive Treatment of Furunculosis.—P. Gallois and Coureux³ replace tincture of iodine, which is commonly employed in the treatment of furunculosis, by a solution of iodine in acetone, as follows:

Metallic iodine	4 grams (1 dram)
Acetone	10 grams (2½ drams)

This solution contains about four times as much iodine as can be dissolved in the same quantity of alcohol. Its appearance is nearly identical with that of the tincture of iodine, but it gradually changes in character. At the end of 15 days the solution becomes black and syrupy, and resembles black currant juice. Clermont and Chautard⁴ found that a definite chemical compound was formed—monoiodoacetone—with the liberation of hydriodic acid. Monoiodoacetone turns black in the light. In the action of iodine on acetone, diiodoacetone is also formed, the proportion of this increasing with the age of the preparation. In the treatment of furunculosis the action of this solution is much more powerful than tincture of iodine. It is more caustic

¹ Bulletin Général de Thérapeutique, Vol. cxlv, No. 2, 1903, p. 62.

² Bulletin Général de Thérapeutique, Vol. cxlv, No. 5, 1903, p. 192.

³ Therapeutische Monatshefte, 1902, H. 9.

⁴ Bulletin Général de Thérapeutique, Vol. cxlv, No. 2, 1903, p. 53.

⁵ Bulletin Général de Thérapeutique, Vol. cxlv, No. 2, 1903, p. 69.

⁶ Dermatol. Centralblatt, 1902, No. 7.

⁷ Bulletin Général de Thérapeutique, Vol. cxlv, No. 2, 1903, p. 57.

¹ Russkl Vrach, January 25 and February 15, 1903.

² Journal des Praticiens, Vol. xvii, No. 3, 1903, p. 33.

³ Bulletin Général de Thérapeutique, Vol. cxlv, No. 2, 1903, p. 58.

⁴ Bull. de la Soc. de Chimie, t. xliii, p. 614.

than tincture of iodine, and must be used more cautiously. The absorption of the drug seems to be governed by the degree of congestion of the inflamed tissues. When iodoacetone is applied to an unopened boil which is surmounted by a small pustule the drop of pus is dried up and is later removed as a crust. At the end of 24 hours, if the pustule is still red and inflamed, the application may be renewed. When applied early the furuncle is usually aborted. Slight irritation may result from its use where the skin is thin, as in the axilla. It is recommended that the applications be made by the physician himself. [L.F.A.]

FORMULAS, ORIGINAL AND SELECTED.

Treatment of Eczema.—The following ointment has given good results in certain cases of eczema:¹

Camphorated naphthol 0.5 gram (7½ grains)
Zinc oxid 5.0 grams (75 grains)
Vaselin 45.0 grams (12 drams)

To Prevent Vomiting.—Soupault² advises chloroform in the following combination to prevent vomiting:

Chloroform } of each 5 cc. (1½ fluidrams)
Tincture of iodine }

Dose.—Five drops after meals if there is a tendency to nausea.

For severe **gastralgia** he uses:

Cocain hydrochlorate 0.05 gm. (½ grain)
Chloroform water } of each 60 cc. (2 fluidounces)
Distilled water }

Dose.—One tablespoonful every two hours. [W.E.R.]

LEGAL MEDICINE

JOHN MARSHALL

J. H. W. RHEIN

EDITORIAL COMMENT

The Differentiation Between Animal Bones.—

An article of practical importance to all those interested in forensic medicine is the description by Schütze³ of a method for differentiating between human and animal bones. The method is based upon the principles of the so-called "Wassermann's method." Wassermann was the first to demonstrate that the blood-serum of an animal treated by successive injections of the serum of an alien species gives a specific precipitate when the serum used for the injections is added to it. To give a concrete example: a rabbit is treated with successive injections of the serum of the ox; after a certain interval—the degree of immunity is proportional to the total amount of serum used for the injections—serum is collected from the rabbit, and to it is added a trace of bovine serum; a delicate clouding is seen immediately, and a considerable precipitate collects in the bottom of the test-tube after standing. No other serum except bovine serum will give this reaction with this rabbit's serum. The reaction is therefore, practically speaking, absolutely specific. We say practically speaking, for it has been found that the serum of some of the anthropoid apes will give a precipitate with the serum of an animal immunized against human serum, though even here a quantitative difference is discernible. But such a condition would hardly occur in forensic practice, and there would be absolutely no reaction of the serum of an animal immunized against human serum if it were tested against the serum or blood of any of the common domestic or wild animals. In practical use the reaction is therefore specific. Dried blood and extracts of old stains can be used as well as fresh serum. The method has been successfully employed in practice in differentiating between bloods, in identifying a given blood for forensic purposes, and in determining the biologic relationships of species. It has also been practically applied to distinguish between beef and horse-meat—the serum albumins necessary for the reaction being

extracted from the meat by maceration. Schütze has applied the method to the differentiation between human and animal bones with success. For this purpose the serum of an animal immunized against human serum was taken, and to it was added the fluid resulting from the maceration of the ground and pulverized bones. A specific reaction was obtained—only fluid obtained from the maceration of human bones gave the precipitate. Dried bones gave the reaction, but since the reaction depends upon the extraction by maceration of the serum albumins, it is evident that it can only be obtained from bones which still have enough of the marrow substance adherent to them to permit of obtaining these albumins. The reaction fails if the albumins have been previously coagulated by heat; the method is therefore limited to more or less fresh bone substance, yet the majority of forensic cases would doubtless fall under this heading.

The Röntgen ray has a twofold medicolegal significance, its relation to the offering of skiagraphs as evidence in the courts and its relation to suits in malpractice. The courts have accepted the skiagraph in testimony in a number of cases. Its importance depends, however, upon the care with which it has been prepared and whether it is explained by an expert professional witness. Several malpractice suits have grown out of the use of the Röntgen ray in the diagnosis and treatment of disease. Patients receiving harm as a result of the use of the Röntgen ray have sued the physician employing this measure for malpractice. It would seem wise, in view of these facts, for any one employing this measure to insist upon a written agreement not to bring suit in case of accident occurring from its use. The patient should have the danger of the procedure fully explained to him before undergoing examination or treatment.

REVIEW OF LITERATURE

Medical Laws of Maryland.¹—The Legislature of Maryland in 1902 passed an act which provided for two separate examining boards: one representing the Medical and Surgical Faculty of the State of Maryland, and one representing the Maryland State Homeopathic Medical Society. The applicants are examined in anatomy, physiology, medical chemistry, surgery, practice of medicine, materia medica, therapeutics, obstetrics, and pathology. The applicants may show a diploma from a legally incorporated college in the United States or a diploma or license entitling him to practise all the branches of medicine and surgery in some foreign country. If the diploma is from a college in the United States, it must have been conferred by a college requiring a four-years' standard of education, as defined by the American Medical College Association or the Intercollegiate Committee of the American Institute of Homeopathy, provided that these requirements shall not apply to any applicants who shall have practised outside of the State for three years prior to the passage of this act, if he is duly registered or licensed in the place where he so practised; provided further, that two courses of medical lectures, both of which shall be either begun or completed within the same calendar year, shall not satisfy the above requirements; provided also, that in the case of students who at the time of the passage of this act shall be in their second year in a medical college, a three-years' course of study or attendance on three courses of lectures delivered in different years shall satisfy said requirements. Licenses may be granted without examinations to applicants who are licensed practitioners of the District of Columbia or other States where the standard of requirements are as high as those governing the Board of Medical Examiners of Maryland; provided that such States reciprocate the same privilege. Medical students at the end of their second year of study who have completed the studies of anatomy, physiology, medical chemistry, and materia medica, shall, upon application, be examined in these branches by the

¹ Bulletin Général de Thérapeutique, Vol. cxlv, No. 5, 1903, p. 192.

² Bulletin Thérap., October 15, 1902.

³ Deutsche medicinische Wochenschrift, No. 4, 1903, p. 62.

¹ Medicolegal Bulletin, February, 1903.

State Licensing Board, the results to be considered as a part of the final examination. Diplomas presented by graduates of foreign colleges shall be accepted if the course of four years has been required by such foreign college before issuing such diploma.

New Illinois State Bill to Regulate the Practice of Medicine.—This was introduced March 3, 1903.¹ The bill retains all the good features of the present law and guarantees representation of all schools. It defines the practice of medicine as follows: "Any one shall be regarded as practising medicine who shall treat or profess to treat, operate on or prescribe for any physical injury to or deformity of another." It provides for the restricted practice of medicine—that is to say, a person may engage in the practice of medicine without using drugs or appliances, performing surgical operations, or attending cases of labor. Midwives must be licensed. Itinerant vendors of drugs, nostrums, and ointments, or those who profess to treat diseases or injuries by any other method, must be licensed.

Incompetent to Offer Certain Quotations in Giving Expert Evidence.—The Supreme Court of Alabama, in the murder case of Timothy vs. State,² decided that it is competent to offer in evidence quotations from standard medical works relating to wounds and personal physical conditions, but that statements of a work on medical jurisprudence relating to certain experiments made with guns at various distances in order to determine the distance a weapon should be held from a target to leave no powder marks cannot be accepted as evidence, nor can the conclusions of the author from these experiments. Opinions upon such subjects must be given by word-of-mouth and only by experts.

Judgment Against Charity Patient.³—A physician brought suit for \$20.00 against a patient treated as a charity patient in the Postgraduate School of Chicago in the free clinic, whom he afterward discovered was financially responsible. Judgment was rendered in his favor.

Diagnosis of Blood Stains, Human and Animal.—The *Journal de Med. de Paris*⁴ reviews in an editorial the recent work of Nobele, who made a number of interesting experiments on animals, with the object of confirming the results of Wassermann and Schütze relating to the differential diagnosis between the blood of man and the blood of animals. The process consisted of injecting animals with human serum; the serum of the inoculated animal acquiring the property of throwing down a precipitate when mixed with human blood. Nobele injected into the peritoneal cavity of a rabbit 10 cc. of ascitic fluid from a woman who had a uterine tumor. After six injections the animal was killed, and it was found that the serum of the blood when mixed with equal parts of human serum gave a flocculent precipitate. A second rabbit was injected subcutaneously six times with 10 cc. of a liquid expressed from a fresh human placenta. The animal was then killed and the serum was found to react upon human serum. When the blood for examination is dry it is dissolved in a physiologic solution of sodium chlorid or a weak solution of caustic soda. He proved that the serum of injected rabbits gave no precipitate with the blood of dogs, horses, oxen, cats, rabbits, pigs and cows. It gave a precipitate when mixed with the serum of milk, the serum of pus, saliva, nasal secretions, coryza and albuminous urine. Putrefied blood reacted equally well. A stain of human blood was made upon linen many days previously, and when diluted in a solution of sodium chlorid gave a characteristic reaction. A piece of linen stained with human blood was washed in water, then dried, so that the stain was distinguished with great difficulty. When placed in a solution of sodium chlorid it was found that the serum of the injected rabbit gave with this solution a feeble precipitate. Linen stained with blood in 1893 was treated in the same fashion, but no reaction was obtained. Rusty scissors which had been stained with blood two months previously were scraped and the debris mixed with a solution of sodium

chlorid, with which solution the characteristic precipitate was obtained. A few drops of blood were placed upon three pieces of glass which were subjected to a temperature of 75°, 100° and 125° respectively. When the blood stain was taken up by a solution of sodium chlorid, the liquid containing the blood subjected to a temperature of 125° was the only one that did not give the reaction. When he gave the ascitic fluid by the mouth the serum of the rabbit so treated did not give the characteristic reaction of human blood. On evaporating in vacuum the reactive serum, he obtained a substance which he preserved in sealed glass tubes protected from the light. He found that after six months serum so preserved retained its activity.

Power of Board of Education.—The Supreme Court of Michigan in the case of Mathews vs. Board of Education¹ held that the board of education exceeded its power when it made it essential to admission to school that a child shall be vaccinated. In this State a rule had been enacted by the School District Board in 1894 by which no pupil was permitted to attend school who could not give satisfactory evidence that he or she had been vaccinated, or was in some other way immune to small-pox. The court held inasmuch as it was the duty of a child to attend school, and that the parent is liable to a fine or penalty or imprisonment or both if he neglects to send him, that this practically gives the board of education the authority to compel vaccination, for if the parent does not have his child vaccinated the child can not go to school, and as the parent is compelled to send his child to school he becomes liable to the penalty mentioned above. The court further holds that in spite of this decision the board of education has the power temporarily to close the schools during the prevalence of epidemics of contagious diseases. Only the legislature can change the existing laws so that a child can be lawfully excluded from attending school for the cause relied on.

Board of Expert Medical Witnesses.—Johnson,² in discussing the question of the medical expert evidence, proposes that the court should appoint a medical board of witnesses, who may be cross-examined just as expert witnesses are cross-examined, as a remedy for the evils arising from the present method of obtaining expert testimony.

Damages for Loss of Eyesight.—The Appellate Court of Indiana,³ in the case of Van Camp Hardware Company vs. O'Brien, allowed \$25,000 damages in the case of a girl 9 years of age who lost the sight of her left eye by accident. **Damages for Broken Leg.**—The Supreme Court of New York, in the case of the American Sugar Refining Company vs. Wieszynski,⁴ believes that \$1,000 is the proper amount of damages received for the breaking of a leg.

Injuries Sustained by Röntgen Ray Examination.—The Supreme Court in the case of MacDonald vs. Shields, Jernigan and O'Conner,⁵ dismissed the case without letting it go to the jury. A suit of \$50,000 was brought for injuries sustained through an examination by the Röntgen ray, and as a result the patient's hair fell out and she became bald. The court held that the evidence went to prove that she had consented to the examination, and that there was no case against the defendants.

Liability of Druggist in Dispensing Poisons.—In the case of Gibson vs. Torbert⁶ the Supreme Court of Iowa is of opinion that if a person of mature age, apparently in possession of his faculties, represents to a druggist by implication that he knows the properties and uses of the drug for which he asks, and that he a proper person to receive the same, such a transaction may be made without special inquiry or instructions, and that the seller thereof is not liable for damages or injuries to the purchaser that may result from any improper use of such drug, when there has been nothing suspicious about the transaction by which the seller might judge that the person was an improper person to receive the drug. To say that a man is illiterate does not mean that he cannot be trusted with dangerous substances.

¹ Journal of the American Medical Association, September 28, 1901, p. 861.

² Canadian Pract. and Rev., August, 1901, p. 432.

³ Journal of the American Medical Association, 1902.

⁴ Journal of the American Medical Association, September 14, 1901.

⁵ Medicolegal Bulletin, December, 1902, p. 90.

⁶ Journal of the American Medical Association, February 1, 1902.

¹ Supplement to the Illinois Medical Journal, March, 1903.

² Journal of the American Medical Association, October 1, 1901, p. 1000.

³ Medicolegal Bulletin, December, 1902, p. 91.

⁴ June 8, 1902.

Legal Value of a Woman's Life.—The Supreme Judicial Court of Maine,¹ in the case of Oakes vs. the Maine Central Railroad Company, decided that \$3,500 was an excessive amount to pay for the life of a woman aged 35, whose husband was in poor health; who was a good milliner; a prudent, industrious woman; an affectionate mother, and who possessed a fair education. The court held that in determining the amount of pecuniary injury resulting from the death of the woman it was proper to show the expectancy of life; the probability of her surviving her husband; the burden of supporting her child; the time that might reasonably expire before the child could assist in the support of himself and mother; the possibility that the mother might become dependent on the child for support; the loss of proper moral training. The court decided that a new trial must be granted if all over \$2,500 was not remitted. The Supreme Court of New Jersey, in the case of Rafferty vs. the Erie Railroad Company, held that \$5,000 was an excessive amount to pay for the death of a woman 45 years old who had kept house for three brothers and a sister, all of whom were single. The court held that the damages were limited by statute to the pecuniary loss sustained by the nearest relatives. Unless the damages were placed at \$2,500 the verdict would not stand.

Contamination of Wet-nurse.—In the Court of Lyons² an opinion was rendered in favor of a wet-nurse who had been contaminated by a child suffering from hereditary syphilis.

Examination of Blood Stains.—The Supreme Court of Idaho,³ in the murder case of State vs. Rice, held that it is not necessary to call an expert witness to prove the existence of blood, but only when there is a doubt as to whether the blood comes from man or from some lower animal.

Malpractice.—Falconbridge, Chief Justice of the King's Bench,⁴ gave an important opinion upon the subject of malpractice. A woman who had injured her foot called in a surgeon who, with the assistance of a second surgeon, set the foot, after which they were discharged by the patient. The woman, more than a year afterward, brought suit against the physicians for malpractice, claiming that improper treatment of the foot had resulted in deformity and permanent lameness. It was claimed by the defendants that the foot had been properly set, and that the deformity that subsequently developed was the result of negligence on the part of the plaintiff. Furthermore, that the proceedings were begun more than a year after the date of their last visit. It was claimed by the plaintiff that the astragalus was dislocated, that there had been no fracture of the fibula, and hence an incorrect diagnosis had been made. Skiagraphs were offered in evidence. The court decided in favor of the defendants, and stated the opinion that there is "no implied warranty on the part of a physician or surgeon that he will effect a cure."

Obligation of Insured in Medical Examinations.—The Court of Appeals of New York⁵ held that the obligation of the insured is only to submit to the examination of a medical examiner and to answer the questions asked by him. If the examiner omits important points in his record of answers given to him, the responsibility falls upon the insurance company, and in the event that the company claims a forfeiture on the ground that the answers were false, the beneficiary may show the answers as actually given. Although the insured may agree that the physician is his agent, the examiner is really the agent of the company.

Magnetic Healer.—The Indiana Supreme Court,⁶ in the case raised by a magnetic healer, held that healing of the character employed by the magnetic healer was merely a magnetic phenomenon and could not be considered the practice of medicine. This decision has important bearing upon proceedings against "professors" without licenses or Christian Scientists.

Expert Testimony and Hypothesis.—The Court of Appeals of Maryland⁷ held that when expert testimony depends

wholly upon hypothesis inaccurate conclusions are likely to follow. Two experts of recognized ability often come to opinions diametrically opposite when a hypothetical case is propounded, and the court emphasized the importance of exerting unusual care in dealing with this sort of evidence.

Professional Secrets.—The Comité consultatif de l'Assistance Publique¹ decided that facts that may be acquired during professional care of a patient must be considered as professional secrets, and that it is improper to inform the authorities of evidence of crime thus discovered.

Practice of Medicine Defined.—Beates, in a recent monograph, asks the question, "How should the practice of medicine be legally defined?" The technical legal interpretation of this question, he states, may be as follows: "To practise medicine is to treat disease and accidents by means of drugs or medicines, and if the treatment of these is conducted without drugs or medicines, one so doing is not practising medicine." The following definitions, he believes, meet all the objections of which he has knowledge: *To Practise Medicine.*—"For any one, except those carrying out the directions of the attending physician, to engage, directly or indirectly, habitually or occasionally, gratuitously, or for pecuniary or other compensation, in the care, management or treatment, by any means whatsoever, either material or immaterial, for the relief or cure of any or all diseases, accidents, or disabilities to which human or animal life is exposed, threatened, or afflicted." *Practitioner of Medicine.*—"Any one, except those carrying out the directions of the attending physician, who engages directly or indirectly, habitually or occasionally, gratuitously, etc., as above." *The Practice of Medicine.*—"The engaging by any one, except those carrying out the directions of the attending physician, directly or indirectly, habitually or occasionally, gratuitously, etc., as above."

Registration of Pharmacists.—The Kentucky statutes² make it a misdemeanor for any one except a registered pharmacist to sell or compound drugs. It also provides that it shall not interfere with the business of a licensed practising physician or prevent his supplying his patients with drugs, or compounding his own prescriptions. The Court of Appeals of Kentucky in the case of Commonwealth vs. Hovious says that this statute does not give the physician the privilege of selling drugs indiscriminately or to compound and sell drugs indiscriminately to any who may call for them, but that he has the privilege of giving any drugs to or compounding any drugs for parties applying to him for treatment.

Malpractice Defined.³—This article defines malpractice in its various phases. It is divided into two general classes—civil and criminal malpractice. A physician when he takes charge of a patient contracts that he has the requisite skill to properly perform the duties of his profession. The reasonable and ordinary skill and knowledge which is required of a physician by law is that possessed by physicians practising in the neighborhood in the same line of work. A physician contracts that he will use a reasonable degree of skill and knowledge, due care and diligence in treating his patients, and that he will continue in attendance as long as his services are needed; that he cannot retire from the case except after due notice and allowing sufficient time to elapse for the patient to engage another physician. On the other hand, a patient may discharge a physician without notice. The physician must give clear and explicit instructions; he must follow recognized methods of practice; he must be familiar with the advances made in medicine and he must employ the latest methods, though the law holds him responsible if untoward results follow the use of untried remedies. As to the employment of the Röntgen ray in therapeutic medicine no court of last resort has passed upon the question of the propriety of using it in medical treatment. The physician must employ the best judgment, though this does not imply that it shall be infallible. If the patient fails to follow his advice the physician shall not be held responsible for unfortunate results. The fact that a physician's services are gratuitous does not render him exempt from responsibility. Medical experts are held responsible according to the opportunity for possessing

¹ Journal of the American Medical Association, August 31, 1901.

² Gazette Hebdom., December, 1901, p. 576.

³ Journal of the American Medical Association, October 19, 1901, p. 1061.

⁴ Canadian Pract. and Rev., 1901, p. 314.

⁵ Journal of the American Medical Association, 1902, p. 895.

⁶ Medicolegal Bulletin, December, 1902, p. 87.

⁷ Journal of the American Medical Association, 1901.

¹ Gaz. hebdom. de Med. et de Chirurgie, April, 1902.

² Journal of the American Medical Association, February 15, 1902.

³ Medicolegal Bulletin, December, 1902, p. 71.

and using skill and care. A patient contracts to pay when accepting the services of a physician, and this is independent of the results of the treatment. When a certain amount has been agreed upon the amount may be increased when upon further examination the physician discovers that the treatment will be more extended and more difficult and explains this to the patient, though no mention as to increased fee be made. The law recognizes this contract between physician and patient when made on Sunday. Medical ethics offset the implied promise to pay when medical services are rendered to a medical man. Refusal on the part of the patient to follow instructions laid down by the physician will prevent a recovery for damages.

Licenses and Examining Boards.—Beates read before the National Confederation of the State Medical Examining and Licensing Boards at Saratoga Springs, N. Y., June 9, 1902, a paper entitled "How May the Topics in Examination for Licensing be Best Arranged by Examining Boards?" This question is of great importance because these examining boards, by controlling licenses that are granted, indirectly establish a standard of medical education. He emphasizes the fact that on account of the indiscriminate way in which medical colleges have issued diplomas many illiterate men have been given the privilege of practising medicine. The examinations for licensure vary in the different States, and the memory character of the State examinations and the varying requirements set up are a source of great injustice to competent practitioners who, licensed in one State, desire to practise in another. The State board should so arrange the topics in examinations as to establish a uniformity of standard which compel medical colleges to so modify their courses that their graduates may readily pass the State examinations, which shall be of such a character as to demonstrate that the successful candidate is qualified to practise medicine. The relation of general education to medical education must be carefully considered. Previous education on the part of the candidate for advanced standing should only receive due consideration when it has included the branches that are required in that course of the medical curriculum that it is desired to replace. Topics in the examinations held by examining boards should be so arranged that medical colleges shall be compelled to teach them. Colleges granting a degree should have the same curriculum; the State examinations should be the same in type and extent; matriculation examinations should be of the same standard; uniform standard in both general and medical requirement for uniform license-right will result in the best arrangement for the topics for licenses by examining boards.

Morphinomania.—An action was brought against a physician by a nurse¹ for negligence resulting in the development of morphinomania. She claimed that the physician negligently administered or negligently gave her opportunities of administering to herself various narcotics to such an extent that she lost her reason and very nearly lost her life. An attempt was thus made to fix the responsibility upon the physician for developing the morphin habit, which had been acquired as a result of his treatment. The drug had been prescribed for the relief of spasmodic asthma, which had resisted treatment by other remedies. The jury rendered a verdict for the defendant.

Judge Stowe entered judgment for the defendants in the case of Addy vs. Trustees of the Western Pennsylvania Medical College.² Addy brought proceedings against the trustees of this college to compel them to award to him a degree of doctor of medicine. The court, however, says that the trustees have a right to refuse to approve the recommendation of the faculty that a degree of doctor of medicine be granted, excepting in violation of the principles of right and justice. The law does not give the faculty the privilege of authorizing the issuing of diplomas, unless the trustees agree to it, and it is not necessary to examine into the reasons that the trustees may have for not granting the diploma.

Liability of Railroad Company in Caring for a Case of Smallpox.—The Supreme Court of Texas, in the case of the Missouri, Kansas and Texas Railway Company of Texas vs. Wood,³

decided that the railroad company was liable for the damages caused by the escape from quarantine of a patient suffering from smallpox while under the care of a surgeon employed by the company. When the company undertook to take charge of the patient to protect the public from infection by coming in contact with such a patient it assumed the responsibility of using ordinary care to avoid transmission of the disease, and when by the negligence of one of its employes the patient escaped and communicated it to others the company was liable for the damages caused thereby.

Verdict for a Physician.—Dr. George D. Head,¹ of Minneapolis, sued the American Bridge Company for a bill of \$66.00 for services rendered to eight employes who were injured in the construction of a steel elevator. The bookkeeper of the company sent the patients to Head. The company requested him to send the bill to the Travelers' Insurance Company, which paid half the bill, claiming that it was only liable for first aid, and informed the doctor that he must collect the other half of the bill from the American Bridge Company, or from the men who were injured. The latter company held that its agent had only the authority to employ the doctor for first aid only, but it was shown in the testimony that Dr. Head did not know of this restriction until long after the services were rendered. The case was decided by the Municipal Court and later by the Supreme Court in favor of Head. The Supreme Court gave the following opinion: "If a physician is summoned to attend an injured person by another having authority from his principal to hire the first aid services, and nothing is said about his authority being limited, and the physician is unaware of such limit, the agent binds the principal to pay not only for the first aid, or initial service, but for the subsequent service as well."

Malpractice Suit for Röntgen Ray Burn.²—In the case of Shelly vs. Dr. G. W. Spohn, of Indiana, the La Grange Circuit Court decided in favor of the defendant. Dr. Spohn had treated Shelly for a cancerous growth on the under part of his tongue with the Röntgen ray. The patient was told of the possibility of a burn, and consented to the treatment. After daily treatment for two weeks a slight dermatitis developed on the patient's face, after which the treatment was discontinued. After receiving a few treatments for the dermatitis, the patient left the city to obtain treatment for his burns elsewhere. He brought action against Dr. Spohn for malpractice, claiming \$10,000 damages for injuries to his face and left hand, which, he claimed, was permanently crippled as a result of his burns. He alleged that the doctor directed him to hold the lower jaw down with the left hand during the treatment. It was proved in the trial that the only real injury was to the hand of the plaintiff, and it was shown by experts that this was due to infection of a wound in the hand by poisonous saliva, which came in contact with the hand at certain times when the patient persisted in wiping saliva from his mouth against the advice of the doctor.

Exception to Physician's Fee.—In the case of St. Louis Southwestern Railway Company of Texas vs. Stone-Cypher,³ the latter made a claim of \$100, the expense incurred in physician's fees and treatment for injuries sustained by the company's negligence. Exception was taken on the ground that the dates and places of the alleged services were not stated, but the Court of Civil Appeals of Texas overruled the objection, maintaining that the claim was for the amount he was compelled to pay for the company's negligence, and that it was unnecessary to be more explicit about the claim. If the doctor had been suing for the amount of his bill, then the case would be different, and an itemized account would be necessary.

Life Insurance in Case of Suicide.—An action was brought against the Knights Templar and Masons' Life Insurance Indemnity Company by Rosa B. Jorman⁴ to recover \$5,000 upon a life insurance policy issued upon the life of John P. Jorman, her husband, who had committed suicide. The case was first brought into the Circuit Court of Grundy County, Missouri,

¹ Northwestern Lancet, January 15, 1903, p. 33.

² Medicolegal Bulletin, January, 1903.

³ Journal of the American Medical Association, September 14, 1901.

⁴ Baltimore Underwriter, November 5, 1902, and Public Ledger, December 8, 1902.

¹ British Medical Journal, March 8, 1902, p. 605.

² Medicolegal Bulletin, December, 1902.

³ Journal of the American Medical Association, March 15, 1902.

and later into the Circuit Court of the United States for the Western District of that State. The policy contained a suicide clause by which the holder of such policy was not entitled to indemnity in case of suicide, "whether voluntary or involuntary, sane or insane." The Missouri law of 1879, however, provides that suicide shall not be used as a defense against settlement of a life insurance policy. Judgment was rendered in favor of the plaintiff by the Circuit Court and was affirmed by the Circuit Court of Appeals, and later by the United States Supreme Court.

Privilege of Increasing Fee.—A Supreme Court jury of New York decided in the case of *Asch vs. Goldsmith* that when a physician attending a patient in a summer resort moves to the city he has the privilege of increasing his fee for the subsequent visits out of town. The patient claimed that the fee for the out-of-town visits should be the same as charged when the doctor was staying at the summer resort.¹

Malpractice in Vaccination.—Action was brought by Bridget Nugent against Dr. Harvey M. Righter before Judge McCarthy, in the Common Pleas Court No. 3, of Philadelphia, to recover for the death of her child of six years who had been vaccinated by Dr. Righter. It was claimed by the plaintiff that impure virus had been used and that the method had been careless, and as a result of this that impetigo contagiosa developed, in consequence of which the child died. It was also alleged that proper skill and diligence was not exercised in the treatment of this disease. The testimony of a number of reputable physicians went to show that Dr. Righter had used more than ordinary care in vaccinating the child; that the impetigo which developed nearly a month after the vaccination and after the wound had healed could not possibly have been introduced at the time of vaccination, and further that Dr. Righter had not only recognized the impetigo but had administered the proper treatment for it. It was shown in the testimony that the plaintiff's home was in a bad hygienic condition. On the contrary, several witnesses testified to the cleanliness of the plaintiff's home. The jury returned a verdict in favor of the plaintiff, awarding her \$1,000 damages. The case has been appealed and the Philadelphia County Medical Society has voted funds for the defense.

The Legal Aspect of the Premature Infant.²—A case was tried before the Tribunal de la Seine in which the plaintiff endeavored to recover the dowry paid on his daughter's marriage, claiming that she had died without issue to inherit from her. His daughter died in giving birth to a child 6½ months old, who lived in an incubator 25 days. The question to be decided was whether the child was viable. According to the French law if a child was viable he could inherit from his mother, one-half going to the child's father, the other half returning to the mother's father; or if the child was not viable, the maternal grandfather could claim the return of the dowry. The court appointed a jury of experts to consider the evidence as to the following points: (1) That the child was born after a gestation of 6½ months; (2) that it weighed at the time of birth 1 kilo. 200 grams (2.4 pounds), and continued to gain in weight afterward; (3) that the nails were not fully formed. If these asserted facts can be proved by the plaintiff he will probably win the case.

Osteopath Fined.—An osteopath was fined \$100 for practicing medicine illegally by Judge Heisley,³ of the Monmouth County Court, New Jersey, who maintained that healing by the application of the hands was a remedy just as the administration of drugs.

Legal Privileges of Board of Health.—The Supreme Court of Massachusetts,⁴ in the case of *Stone vs. Heath*, holds that a board of health can not be restrained from entering on premises for the purpose of abating a nuisance if the owner has neglected to abate the same after being so ordered; nor can it be restrained from instituting proceedings against the owner on account of negligence in obeying the order. But if subsequently it is discovered that there was no nuisance, then the board of health acts at its peril. In proceedings against the

parties to recover the expenses for abating a nuisance, the question whether there was a nuisance, or if such existed whether it was maintained by the said parties, may be litigated by such parties. This question may be also litigated in proceedings to recover the loss or damage to property caused by the abating of the nuisance, and may also be litigated by parties against whom proceedings are instituted for the neglect or failure on their part to obey the orders of the board of health directing them to abate the nuisance.

A Verdict of \$100,000 Damages.—A suit was brought against the New York Central and Hudson Railway Co. for \$250,000 damages by the widow of a man who had lost his life in the Park Avenue tunnel accident in New York City.¹ The widow claimed that her husband was making \$35,000 per year. She was awarded a verdict of \$100,000 with interest, together with an allowance of \$2,000 for counsel's fees.

Microscopic Appearance of Human Hair.—Lunson² claims that human and animal hair may be readily distinguished by the microscope from all other substances. Human hair may be distinguished from animal hair, and even the species of animal discovered. It is also possible to determine the locality from which the hair comes. The root of hair that is plucked out is irregular, has an undulating surface and excrescences of different form and thickness; the root of hair that has fallen out has a rounded extremity and a smooth surface. He uses a polarization apparatus to determine between gray or blond hair. He found that a chlorin solution completely decolorized black hair, and states that arsenic can be discovered in the hair of those suffering from arsenic poisoning.

On the Resistance of the Colloidal Substance of the Thyroid to Putrefactive Processes.—M. U. Masini³ presents a contribution to the knowledge of the course of putrefaction in the various tissues, first investigated by Tamassia from a medicolegal standpoint, with a view to the decisive establishment of the date of death. He finds that the thyroid is an organ which putrefies very quickly, dissolving completely in the course of from 12 to 14 days in a moist atmosphere and at a temperature of 10° C. The colloidal substance of the thyroid, however, resists the putrefactive processes which destroy the fibrous tissues and enables the organ to be identified after all the other elements have disappeared. Certain alterations which have been described by authors as the results of morbid processes are found to be the result of cadaveric changes, and thus exclude all pathogenic influence. This paper is accompanied by a bibliography of papers on cadaveric alterations. [C.S.D.]

The Detection of Simulation in Hysteria and After Accidental Injuries.—Malingers suing for damages after accidents and hysteric individuals simulating symptoms and diseases are easily exposed, according to Hoesslin.⁴ If along with other probable symptoms of hysteria the diameter of the visual field does not increase when the point of fixation is removed to a greater distance the diagnosis of hysteria is assured. If no symptoms of hysteria exist with it the individual is probably a malingerer. He speaks of this field as a "tubular visual field." The diagnosis of malingery is made certain if paradoxical contraction of antagonistic muscles exist. The patient is asked to perform a certain motion and this movement is slightly resisted. The resistance is suddenly released. In individuals either perfectly well or suffering with an organic paresis, the released member will jump in the direction of attempted exertion. Malingerers to prove injury will, instead of attempting to perform motion asked of them, contract the muscles opposing this movement, and the limb will stay in the same position. Hoesslin has found this phenomenon in 37 individuals during the course of one year and further investigations have proved them simulators. In all cases where the absence of paradoxical contractions was noted, even though the patient was known to be hysteric, the injuries proved to be founded on an organic basis. [E.L.]

¹ New York Evening Post, November 20, 1902.

² British Medical Journal, May, 1902.

³ Medicolegal Bulletin, January, 1902.

⁴ Journal of the American Medical Association, September 14, 1901.

¹ Medicolegal Bulletin, January, 1903.

² British Medical Journal, September 14, 1901.

³ Il Policlinico, June, 1902.

⁴ Münchener medicinische Wochenschrift, September 16, 1902.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 28, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
Alabama:	Moble..... Mar. 14-21.....	2	
California:	Berkeley..... Mar. 4-11.....	1	
	Los Angeles..... Mar. 7-14.....	4	
	San Francisco..... Mar. 8-15.....	4	
Colorado:	Denver..... Mar. 7-14.....	22	
Delaware:	Wilmington..... Mar. 14-21.....	7	1
Florida:	Jacksonville..... Mar. 14-21.....	3	
Illinois:	Chicago..... Mar. 14-21.....	12	
Indiana:	Elwood..... Mar. 15-22.....	7	
	Indianapolis..... Mar. 7-21.....	29	7
Iowa:	Davenport..... Mar. 14-21.....	3	
	Dubuque..... Mar. 14-21.....	1	
Kansas:	Wichita..... Mar. 14-21.....	3	
Kentucky:	Newport..... Mar. 14-21.....	1	
Louisiana:	New Orleans..... Mar. 14-21.....	4	1 imp't'd
Maryland:	Baltimore..... Mar. 14-21.....	2	
New Jersey:	Camden..... Mar. 14-21.....	2	
New York:	New York..... Mar. 14-21.....	1	
Ohio:	Cincinnati..... Mar. 13-20.....	17	
	Cleveland..... Mar. 14-21.....	1	
	Hamilton..... Mar. 14-21.....	1	
Pennsylvania:	Altoona..... Mar. 14-21.....	2	
	Erie..... Mar. 14-21.....	2	
	Johnstown..... Mar. 14-21.....	1	1
	McKeesport..... Mar. 14-21.....	1	Imported.
	Philadelphia..... Mar. 14-21.....	26	1
	Pittsburg..... Mar. 14-21.....	29	4
			Imported, 3 cases.
South Carolina:	Charleston..... Mar. 14-21.....	5	1
Tennessee:	Memphis..... Mar. 14-21.....	1	
	Nashville..... Mar. 14-21.....	1	
Texas:	San Antonio..... Jan. 1-Feb. 28.....	5	
Utah:	Salt Lake City..... Mar. 7-21.....	53	
Washington:	Tacoma..... Mar. 1-16.....	4	
Wisconsin:	Green Bay..... Mar. 15-22.....	6	
	Milwaukee..... Mar. 14-21.....	2	

SMALLPOX—FOREIGN.

Belgium:	Antwerp..... Feb. 14-21.....	2	1
Brazil:	Rio de Janeiro..... Feb. 20-27.....	5	
France:	Lyons..... Feb. 21-28.....	1	1
	Paris..... Feb. 28-Mar. 7.....	1	
Great Britain:	Dublin..... Feb. 28-Mar. 7.....	5	1
	London..... Feb. 28-Mar. 7.....	2	
	Manchester..... Feb. 28-Mar. 7.....	19	
	Sunderland..... Feb. 28-Mar. 7.....	1	
India:	Bombay..... Feb. 17-24.....		74
	Calcutta..... Feb. 14-21.....		6
Mexico:	City of Mexico..... Mar. 1-8.....	9	5
Straits Settlements:	Singapore..... Jan. 31-Feb. 7.....		1
Turkey:	Alexandretta..... Feb. 21-28.....	3	

YELLOW FEVER.

Brazil:	Rio de Janeiro..... Feb. 20-27.....	40	
Colombia:	Panama..... Mar. 10-17.....	3	1
Ecuador:	Guayaquil..... Feb. 14-21.....		8

CHOLERA—FOREIGN.

India:	Calcutta..... Feb. 14-21.....	68	
Straits Settlements:	Singapore..... Jan. 31-Feb. 7.....	1	

PLAGUE—INSULAR.

Hawaii:	Hilo..... Mar. 7.....	2	
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PLAGUE—FOREIGN.

Africa:	Durban..... To Feb. 23.....	83	50
	Pietermaritzburg..... Feb. 26.....	1	
Brazil:	Rio de Janeiro..... Feb. 20-27.....		1
India:	Bombay..... Feb. 17-24.....	1,054	
	Calcutta..... Feb. 14-21.....		277
	Mauritius..... Feb. 12-19.....	4	1
Mexico:	Mazatlan..... To Mar. 20.....	313	254

Changes in the Medical Corps of the U. S. Army for the week ended March 28, 1903:

MAUS, Lieutenant-Colonel LOUIS M., deputy surgeon-general, is granted leave for one month from about April 1, with permission to apply for an extension of one month.

KILBOURNE, Lieutenant-Colonel HENRY S., deputy surgeon-general, in addition to his other duties will assume charge of the medical supply depot, San Francisco, Cal., during the absence of Lieutenant-Colonel Louis M. Maus, deputy surgeon-general.

LOCKHILL, First Lieutenant EDWARD P., assistant surgeon, is relieved from further duty at the United States General Hospital, Presidio, and will report to the commanding officer of the Presidio for duty at that post.

HOLMES, THOMAS G., contract surgeon, is assigned to duty as examiner of recruits at Detroit, Mich., in addition to his duties at Fort Wayne.

MILLS, FREDERICK H., contract surgeon, will proceed to his home, Buffalo, N. Y., for annulment of contract.

ASHFORD, Captain BAILEY K., assistant surgeon, is relieved from duty at Ponce, P. R., and will report at San Juan, P. R., for temporary duty at that post.

WILLIAMS, First Lieutenant ALLIE W., assistant surgeon, is relieved from duty at Mayaguez, P. R., and will report at Cayey, P. R., for duty, to relieve First Lieutenant Willard F. Truby, assistant surgeon. Lieutenant Truby will proceed to New York City and report by letter to the adjutant-general of the army for further orders.

SORBER, ORD M., contract dental surgeon, is relieved from temporary duty at Fort Clark and will proceed to Camp Eagle Pass, Tex., for temporary duty, upon completion of which he will return to his station, Fort Sam Houston.

BUFORD, OLIVER H., contract surgeon, is granted leave for two months.

KIERSTED, First Lieutenant HENRY S., assistant surgeon, is granted leave for ten days, beginning March 27.

YOST, First Lieutenant JOHN D., assistant surgeon, is assigned to duty in the office of the attending surgeon and medical superintendent, army transport service, with station in San Francisco, Cal.

BUSHNEIL, Major GEORGE E., surgeon, is granted leave for ten days.

STEPHENSON, Major WILLIAM, surgeon, is relieved from duty at Monterey, Cal., and will proceed to the Presidio, to relieve Lieutenant-Colonel Henry S. Kilbourne, deputy surgeon-general. Lieutenant-Colonel Kilbourne will report to the commanding general, department of California, for duty as chief surgeon of that department.

A board of officers to consist of Majors Louis A. La Garde, Henry P. Birmingham, James D. Glennan, surgeons, is appointed to meet at the Army Medical Museum Building, Washington, D. C., April 1, 1904, for the examination of officers of the medical department for promotion.

The following named officers will report to Major Louis A. La Garde, surgeon, president of the examining board, at the Army Medical Museum Building, Washington, D. C., for examination for promotion: Captains Geo. M. Wells, Henry C. Fisher, Henry A. Shaw, Charles F. Kleifer, assistant surgeons.

SMITH, HARRY T., hospital steward, medical supply depot, Washington, D. C., upon expiration of furlough authorized March 21, will proceed to Manila, P. I.

GORGAS, Colonel WM. C., assistant surgeon-general, is granted leave for three months from about April 1.

The board of medical officers appointed to meet in Washington, D. C., for the examination of candidates for admission to the medical corps of the army is dissolved.

A board of medical officers to consist of Colonel Calvin DeWitt, assistant surgeon-general, Major Louis A. La Garde, surgeon, Major Henry P. Birmingham, surgeon, Major Jas. D. Glennan, surgeon, Captain Carl R. Darnall, assistant surgeon, is appointed to meet at the Army Medical Museum Building, in Washington, D. C., April 15, for the examination of candidates for admission to the medical corps of the army.

WHEELER, LEWIS H., contract surgeon, is granted leave for one month from about April 13.

OVERTON, Captain WINFIELD S., is granted leave for one month from about April 5.

CROSS, WILLIAM A., hospital steward, is relieved from further duty with the company of instruction No. 2, hospital corps, Fort McDowell, and will report at Fort McDowell for duty at the post hospital.

GRISWOLD, W. CHURCH, contract surgeon, is authorized to proceed to Manila and report to the president of board of medical officers for examination for appointment as assistant surgeon.

Changes in the Medical Corps of the U. S. Navy for the week ended March 28, 1903:

GROVE, W. B., passed assistant surgeon, detached from treatment at Naval Hospital, New York, and ordered to duty at Naval Dispensary, Washington, D. C.—March 23.

PLUMMER, R. W., passed assistant surgeon, detached from Navy Yard, New York, and granted sick leave for three months—March 25.

MURPHY, J. F., assistant surgeon, detached from the Glacier and ordered to the Monocacy—March 25.

Changes in the Public Health and Marine-Hospital Service for the week ended March 26, 1903:

STONER, G. W., surgeon, to proceed to Washington, D. C., for special temporary duty—March 20, 1903.

GODFREY, JOHN, surgeon, department letter of November 22, 1902, granting Surgeon Godfrey extension of leave for three months, amended so that said extension shall be for two months and twenty-five days from December 13—March 18, 1903.

MEAD, F. W., surgeon, granted leave of absence for five days from April 13—March 25, 1903.

SMITH, A. C., passed assistant surgeon, granted leave of absence for fifteen days from April 8—March 25, 1903.

ROBINSON, D. E., assistant surgeon, granted leave of absence for two months and fifteen days from April 1—March 17, 1903.

SCHERESCHESKY, J. W., assistant surgeon, granted leave of absence for one day—March 23, 1903.

GIBSON, R. H., pharmacist, department letter of March 18, 1903, granting leave of absence to Pharmacist R. H. Gibson, amended so that leave shall be for eight days from March 9—March 20, 1903.

STIER, CARL, pharmacist, granted leave of absence for one day, March 24, 1903, under paragraph 210 of the regulations.

Promotion.

FOSTER, M. H., assistant surgeon, commissioned as passed assistant surgeon, to rank as such from March 11, 1903.

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Public Health and Cleanliness.—Her child was ill and the mother had sought the aid of a nearby hospital. A physical examination was necessary, but the mysteries of the child's garments were incomprehensible to the physician. To his request that the mother undress the child came the answer, "Aber, mein Gott, I have sewed it in for de winter." Thrift, not cleanliness, was uppermost in that mother's mind. We little guess what a large influence the so-called "filth-diseases" have on the public health, nor the amount of illness directly or indirectly caused by lack of personal cleanliness. Could the community be kept clean, the physician would be saved many a bad half hour and the deathrate would be lowered. Could the necessity for such notices as "Patients must be clean or they cannot be treated" be eliminated from the dispensary there would result a material saving to our hospitals.

Were it possible to enforce personal cleanliness in the community the bath would in very many cases supersede the need for the medicine bottle. It is at all events the duty of every city to provide the opportunity for cleanliness to its people. From an economic standpoint it pays to keep the citizen well. One of the best illustrations of this truth known to us is the revolution being made in the health, personal appearance, and cleanliness of children by means of the employment of thirty-one trained nurses employed by the New York Board of Health to visit the public schools of the city. Trachoma, pediculosis, filthiness, etc., are disappearing among the school children, and secondary education of the parents in these matters is not a small part of this noble reform.

Quack Consumption-Cure Companies.—With the professional crusade against pulmonary tuberculosis there have arisen a number of fraudulent "cures" which should receive the attention of city and State governments. Medical societies should institute suits and "clean the rascals out" wherever it is legally possible to prosecute them, for hardly any crime is more heinous than to defraud the ignorant poor as these scoundrels are doing. There is said to be at least a dozen of these large "absolute consumption-cure" concerns in New York City. Every trick of the quack scamp is skillfully carried out to deceive the unwary, and as money is easily got by him it is freely spent to fleece the unfortunates. The worst feature of many of

these companies is a skilful use of the names of eminent physicians and scientists in such a way that it becomes difficult to trap the rogues and the cheap newspapers become *particeps criminis* by publishing their shameless advertisements. We have previously published an account of the exposure of one advertiser who deliberately adopts and trades upon the name of a great authority upon tuberculosis. The New York Charity Organization Society through a committee is seeking to restrict the operations of these nefarious firms and should receive the help of the profession and of all good citizens. So far this committee is able only to advise. It has printed for general circulation resolutions it recently adopted, declaring that there is no special medicine for pulmonary tuberculosis known; that the so-called cures and specifics, and special methods of treatment widely advertised in the daily papers, are in the opinion of the committee without special value. These "cures," the committee proceeds, "do not at all justify the extravagant claim made for them, and serve chiefly to enrich the promoters at the expense of the poor and frequently ignorant or credulous consumptives." No cure, it is the committee's opinion, can be expected from any kind of medicine or method except the regularly accepted treatment, which relies mainly upon pure air and nourishing food. Physicians may aid by disseminating the circular and by asking the newspapers they take to warn their readers against the wretches.

Compulsory Education of Defectives.—In the *Bulletin of Iowa Institutions* Mr. Henry W. Rothert, Superintendent of the Iowa School for the Deaf, makes a wise plea that the law as to compulsory education of the normal child should be extended so as include the defective. It is just as incumbent upon the State to educate the deaf and dumb child, even more so we should say, as the hearing and speaking child. At present the Iowa law makes the education of defective children permissive. Mr. Rothert would change the "is entitled to receive the physical and mental training and care of this institution at the expense of the State" so that it shall read "must receive, etc." The Oregon law, which should serve as a model, reads as follows:

Whereas, the State has provided an institution for the free instruction of all resident deaf-mute children of lawful school age, every parent, guardian or person having control of any

child or children afflicted with deafness shall be required, under the penalties hereinafter specified, to send such child or children to said institution for a period of not less than six (6) months of each year between the ages of 8 and 16 years, unless children be taught in a private school, etc., etc.

The same logic would also extend the provision to the blind, the weak-minded, young criminals, etc. As a measure of prevention of dependency if not for humanitarian reasons the suggestion is excellent.

The Prison Physician.—The *Bulletin of Iowa Institutions* always contains something to interest and instruct. The article in the latest issue by Dr. Druet, the physician to the Anamosa Penitentiary, is illustrative. One would suppose that practice among convicts would be very different from that among patients of the outside world, but Dr. Druet finds it much the same, "or even more so," one might add. An instance of difference shows that honor is not absent, even in prisons. The doctor may have to hunt up his patients and "force them to come in," for some men will not report at sick call, although really ill, because they are ashamed of the make-believes. The man that never pays his bill is the most difficult man for the physician to please, and it is so in prison practice says Dr. Druet, meaning that these patients shirk work and their duties to the State while demanding much of the physician and other officers. Owing to the perfect control of the patients, the treatment of inebriates and narcomaniacs is very successful—a hint to the Keeleyites! There is a pathetic side to the fact that there are convicts who, unable to pay for the services of a physician outside, have committed crimes in order to be sentenced to the penitentiary where they could secure good medical treatment gratis. This sounds strange to the physician of our crowded city dispensaries. Dr. Druet says:

One will feign sickness to avoid work; another will say that he only wants a little treatment for some slight ailment when he is a very sick man. The one is passed without treatment or excuse from work; the other, against his protest, is passed to the hospital for treatment. We have here the chronic medicine taker the same as in our private practice. They are hypochondriacal, and imagine that they have all kinds of ailments, and are not content unless they are constantly taking some kind of medicine. This class must be treated according to the peculiarities of each case. Others are refused treatment and the reason for nontreatment explained to them. Their pleadings for medicine are limited only by their terms of sentence.

We had not supposed that the patent medicine syndicates would follow their victims beyond prison walls, but—

Again we have the chronic patent medicine taker. He has dosed himself all of his life, and cannot, or will not understand why the State will not furnish him with everything that he imagines he wants.

We hesitate to offend our surgical confreres, but we are compelled to quote again:

We are frequently asked by the inmates to perform surgical operations that are not required. Some patients have a morbid desire for a surgical operation, and especially when it can be had without expense. When this class comes in contact with a prison physician who rushes into surgery at every opportunity, we have our surgical ward unnecessarily full, and we also have results that are an injury to the patient and a discredit to the surgeon.

And lastly, the prison physician must as well as we feel "the marble-hearted fiend, ingratitude."

We have cases where a man comes to us with a diseased body, the result of a life of dissipation and crime. If he becomes an inmate of the prison hospital, and after months of careful treatment by the prison physician and unremitting care by the hospital steward, with his every want supplied in the liberal manner made possible by the generous supplies furnished by the Board of Control of State Institutions, should this man answer the last summons we find that some discharged convict or some friend of the deceased, after being refused space by a score of respectable editors, finds some irresponsible member of the press, ever eager for a sensational article, who comes out in large head lines and heralds to the world "Another Scandal in Connection with Our State Institutions," in which "ignorance," "cruelty," and "neglect" are charged.

The Proposed Leper Colony in the Philippines.—From the report of the Secretary of the Interior to the Philippine Commission we learn that there are three leper hospitals in the Philippines, situated at Manila, Palestina, and Cebu, respectively. During the past year a beginning has been made toward taking a leper census of the islands. This census is already quite complete for many of the provinces, and its results lead to the conclusion that the estimate of those persons who have heretofore expressed the belief that there were 30,000 lepers in these islands is wide of the mark. It is believed that the total number will not exceed 10,000, and it may fall considerably below this figure.

The desirability of establishing a colony where persons in the early stages of leprosy can have their homes, cultivate the soil, and in general lead a free, out-of-door life, instead of being practically imprisoned and compelled to pass their days in company with fellow-unfortunates in the last stages of this horrible disease, has long been appreciated by both military and civil authorities. Efforts were made by the military government to find an island suitable for the establishment of a leper colony, and a military board reported favorably on the island of Cagayan de Joló after somewhat cursorily examining it. As satisfactory information was not given concerning the supply of drinking water on this island, and as the accuracy of the board's report that there were but two or three hundred inhabitants had been seriously questioned, a committee, consisting of the Commissioner of Public Health, the Sanitary Engineer, and the Secretary of the Interior, was appointed to reexamine the island, and if it did not prove satisfactory to search for a more suitable one. This committee reported adversely on the island of Cagayan de Joló, on account of the entire lack of a favorably situated supply of drinking water, the absence of any port, and the presence in the island of some 3,000 Moros, whose removal would have been both difficult and expensive, and recommended the island of Culion, in the Calamianes group, on account of its healthful climate, rich soil, extensive cattle ranges, abundant water supply, good harbors, and small population. The present inhabitants are so few and have so little property that their removal, if deemed necessary, can be effected with little difficulty and at small expense.

An appropriation of \$50,000 was included in Act No. 389 for the purpose of erecting a warehouse on Halsey

Bay, building a road to the proposed site of the colony, and erecting superintendent's house, hospital, and 100 separate dwellings for lepers, the hospital and dwellings to be of bamboo and nipa palm, which the island of Culion produces in abundance. Unfortunately the cholera epidemic prevented the prosecution of this work, and the appropriation lapsed at the end of the fiscal year. A new appropriation was made in October, and it is hoped that the colony may be established and the inmates of the San Lazaro, Palestina, and Cebu lazarettos transferred to it during the coming dry season.

The Nurse Corps of the Army.—A brief account by Dr. McGee of the nurse corps of the army as it exists now has recently been published in the *Journal of the Association of Military Surgeons of the United States*. A previous article described the conditions attending the appointment of trained women nurses for army duty, which began in May, 1898, and culminated in September, when about 1,200 were employed. Between then and the present time they have served in the United States, Cuba, Porto Rico, Hawaii, Japan, the Philippines, and even in the Chinese campaign. The number is now fixed at 100 on active duty, with a small body of "reserves" who have seen active service and are ready to answer future calls. Trained nurses are permanently stationed at the army hospital at San Francisco, at the one for tuberculosis at Ft. Bayard, New Mexico, and at the largest hospitals in the Philippines. They are temporarily sent to any post where they may be needed. They serve under a section of the army reorganization law, framed in 1900, which provided that the medical department should consist of specified medical officers, of the enlisted men of the hospital corps, and of "the nurse corps (female)." A superintendent is stationed in the surgeon-general's office, and a chief nurse is at each of the hospitals where nurses are serving. Recent regulations provide for an examination in nursing, cooking, and allied subjects before promotion from the grade of nurse to that of chief nurse. Women are employed with marked success as teachers of nursing and cooking, in the two schools maintained to give brief preliminary instruction to the hospital corps recruits. Dr. McGee urges that in future the nurse corps be more largely utilized in giving systematic ward training to fit the hospital corps men for their duties in the smaller hospitals, where they have no trained supervision. She also recommends the gradual formation of a large corps of reserves who have received some postgraduate military training.

The Physician and the Murdered Baby.—An interesting discussion is going on in the columns of our contemporary, the *Medical World*, as to the duty of the medical attendant who is sure that the parents have murdered the child he has helped to bring into the world. The conditions of the problem are that the physician could not legally prove the fact of murder, but he has no doubt of the fact in his own mind. The letters of physicians published show that the occurrence is far more common than one would at first be inclined to believe. One of these asks as to the birth-certificate and

the death-certificate. But the editor rightly answers that in many States such returns are not required by law, and this fact operates to make the physician postpone any inquiry. But where there is a law to encourage the indignant obstetrician, the correspondents are unanimous that compliance with the law should be demanded, whatever be the shame of the parents and the cost to the doctor. If he violates the law he also becomes a criminal. Where no law exists he should strive to secure one by all the means in his power. In our issue of the twenty-eighth we published an account of the methods in vogue in Chicago of caring for mothers and their illegitimate children, and in our own news columns today we notice the existence of institutions in Philadelphia and Washington with a similar purpose in view. The physician in such cases, by tact and good-will, can usually succeed in preventing murder and suffering through an appeal to the better nature, and by pointing out the means of avoiding crime.

The American Red Cross in Need of Reorganization.—The newspapers have contained a good deal of late concerning the difficulties and mismanagement of the Red Cross Society. There have long been more than whispers of scandals in connection with the direction of the Society's business affairs. The Spanish-American war is still fresh in memory. Only angels, said a cynic, can be trusted with the spending of much money furnished by other people and no accounting demanded. The contest in the Society seems to be caused by a desire to retire Miss Barton, and to "thoroughly reorganize the Society and provide for a careful and business administration of its finances." Several private individuals offered to provide the means to pension the permanent president, but she would not be so disposed of. Then Bishop Potter, Mr. Ogden, and other prominent men appealed to the minority in the cause of reorganization. The decision reached is that the appeal must be taken for settlement to the annual international meeting of the general organization at Geneva. The appellants are certainly correct in saying that without reorganization, etc., the confidence of the American public will fail.

"Optometry" in Pennsylvania.—A bill "to define and regulate the practice of optometry in Pennsylvania" is before the Legislature. It should have been entitled "An act to enable opticians to practise medicine and to humbug the public as to diseases of the eye." Good opticians will have nothing to do with it and do not want their business "defined or regulated" in any such ways; they do not wish to "examine eyes free." Physicians, of course, are wholly opposed to permitting men ignorant of medicine to treat ocular diseases or to encouraging the dangerous delusion that measuring the eye optometrically or "ophthalmotricianly" has much to do with the treatment of ametropia, heterophoria, or other pathologic conditions of the organ of vision. These facts will of course encourage a certain class of legislators to help the opticians and ophthalmotricians, but they will also encourage sensible men to oppose all such debasement of the practice of medicine.

Of "Chiro" and "Chiropractics."—A kind correspondent sends us the circulars of a new sect of healers which has arisen, or is said to have arisen, in California, although the faculty, consisting of one man, says he was born near Toronto, and there "listened to his mother's sweet lull-a-by." The discoverer has found out even the nerve of smallpox and of pneumonia and can cure cataract "without surgery." The funniest part of the circular is a list of all the outrageous words that could be gleaned from the oldest medical dictionaries concerning bone-diseases, all misspelled or so used as to show that the bone-collector has no idea even of their meaning. We gather that the osteopaths must look to their laurels and incomes, and we suppose our legislative halls may soon be invaded by committees of Chiropractics demanding that the outrage of medical legislation against this greatest of all discoveries shall cease. We cannot say in what way Chiro differs from Osteopathy, because to learn Chiro (or *chico*, as it is sometimes spelled) "takes four months of close application" and we have given the subject but five minutes. It seems to be a more morbid teratologic product of that sect if it is capable of inbreeding. *Chropractic* (another spelling!) is defined as "common sense," and is said to "simplify the treatment of the most painful and prostrating forms of disease by adjusting the displaced bones which are the cause." The relation of Chiropractic to Osteopathy and of this to the bone-setters, and of these to something else, and of this to medicine, reminds one of the old saw:

Great fleas have little fleas upon their backs to bite 'em,
And little fleas have lesser fleas, and so *ad infinitum*.
And the great fleas themselves, in turn, have greater fleas to
go on,

While these again have greater still, and greater still, and so on.

Of course De Morgan meant no pun or disrespect by using the word *still*. The father of Chiropractic is himself a poet also and asks his audience (60 patients a day):

Why take drugs strange
To cure disease?
Why not adjust the frame
And put at ease
The feeling nerves
Which run the human mills,
When Chiropractic serves
To cure all ills?

The invariable fee for teaching Chiro in four months (entitling the student to all future discoveries) is \$500. Even medics, as we are called, may learn the science and art in four months.

Consumption of Alcoholic Beverages 50 Years Ago as Compared With the Present Time.—Figures given in the Statistical Abstract of the United States for 1902 enable us to make interesting comparisons of the consumption of liquors at the present time as compared with 1850, when the first report was compiled. At that time the average per capita consumption of wines and liquors was 4.08 gallons as compared with 19.48 gallons at the present. Distilled spirits—whisky and brandy—were then consumed to the extent of 2.23 gallons as against 1.36 gallons in 1902, and the malt liquors were then consumed to the extent of 1.58 gallons as against 17.49 at the present time. In 1850 the per capita consumption of wines was .27 of a gallon, while in 1902 it was .63. The importation of wines in the United States has materially decreased in the past 10 years, there being a falling off in value from \$10,205,353 in 1893 to \$8,921,138. The importation of champagnes shows a corresponding decrease. Illinois takes the lead as the whisky-making State of the Union, surpassing Kentucky, the figures being for the last year, Illinois, 39,142,876 gallons of distilled spirits; and for Kentucky, which ranks second, 26,018,166 gallons. New York State leads in the manufacture of beer.

AMERICAN NEWS AND NOTES.

GENERAL.

Navy Needs Young Surgeons.—Vacancies for young surgeons in the United States Navy still remain unfilled at the present time, there still being 27 such vacancies unoccupied. It is stated that Surgeon-General Rixey in various addresses and visits throughout the country is calling the attention of young medical men to the opportunities for valuable service in the United States Navy. Applicants must be between 21 and 30 years of age, physically sound, have a good high school education, and be master of their profession to a degree that will insure a successful career in civil life.

Doctors Should be Cheerful and Optimistic.—The *Cosmopolitan* says the longevity of the medical man is materially less than that of workers of other professions. Only those with a sound physique, other things being equal, can win in a struggle for success. The sick look with confidence to the well. They demand the hearty dogmatism that comes from the overflowing of animal spirits. They enjoy the cheerful optimism that comes from a good digestion. They lean upon the doctor in their weakness, and yield willing obedience to his kindly influence. Much of the power possessed for good may be outside of pills or potions, correct theories or sound deductions.

To Fumigate at Sea.—Plans have been presented by the general manager of the Mexican-American Steamship Company to the Surgeon-General of the Public Health and Marine-Hospital Service which provide for the establishment of a floating fumigating plant, the time required for fumigating vessels while in transit being deducted from the five days they are required to remain in quarantine before being allowed to come up to the city of New Orleans. The adoption of the scheme would, it is asserted, greatly facilitate the intercourse between New Orleans and Central and South American ports. This is of particular consequence just now since the Chinese Commercial Company has adopted a short route to New Orleans by steamers sailing to Manzanillo instead of to San Francisco as heretofore.—[*New York Medical Journal*.]

Habitual Criminals.—It is asserted that the Iowa Legislature has passed a law under which a person twice convicted for crime in any city or borough of the United States shall be deemed a habitual criminal and sentenced to 25 years. A bill was also recently introduced into the Mississippi Legislature providing for life sentences for habitual criminals on a third conviction for felony. The two previous convictions may have taken place anywhere within the limits of the United States. This law provides that such life prisoners may have the benefit of parole under such rules and regulations as the board of parole may impose. Superintendent Collins, of New York State, has made a recommendation in the same direction, claiming that the great majority of the professional criminals in the State criminal institutions have served three previous terms for felony, and that for these there is no hope for reform. On the other hand, the Ohio Legislature last year repealed its habitual criminal law.

An Engineer's Idea of Typhoid Fever Prophylaxis.—Can a plant lay eggs? "The typhoid bug," according to an editorial in the *Engineering News*, does, and a water meter's mechanism would squash it, and thus prevent propagation of the dread disease. According to the editorial in question, fault is found with the assumption on the part of some that the water meter affords a breeding place for typhoid germs. A reporter of the *Union Advertiser* is said to have visited the office of the Commissioner of Public Works and examined a couple of meters that the point might be settled. He is reported as having said: "It was possible to see at once that there was no chance for fever to generate in the meters." This accords with the editorial previously alluded to, which further says: "Those whose knowledge of the habits of the 'typhoid bug' make them fear that it will pause to lay its eggs while passing through the water meters should remember the like probabilities that the 'bug' would be crushed in the water meter's mechanism and squashed into innocuous desuetude."

A Department of Health?—The following appeared in a recent issue of the *Louisville Courier-Journal*:

The appointment of Dr. J. N. McCormack, secretary of the State Board of Health, as national organizer of the American Medical Association is considered an evidence of the strength of that organization, which has grown with wonderful rapidity since the inauguration of the movement for a better and a more solid association of the physicians of the United States, begun two years ago under the presidency of Dr. Charles A. L. Reed, of Cincinnati. Dr. McCormack will go to Texas next month to organize a State association and county associations in that State, and will follow up this work in other western States. It is the purpose of the association to form a strong organization of all the legalized practising physicians of the country, which will have influence enough to secure needed sanitary legislation in the States and in Congress. An ultimate purpose is to have Congress establish a department of health, the secretary of which will be a Cabinet officer, instead of having the national health department under the charge of a bureau of the Treasury Department, the Marine Hospital Service.

It may be a little early after the creation of the Department of Commerce and Labor to enter upon a movement for the

creation of still another department of the government, but as health is a great proposition we may expect this movement to attract attention and find some friends.—[*Washington Star.*]

EASTERN STATES.

New Hospital for Greenwich, Connecticut.—At a mass meeting held at the instance of the Greenwich Medical Society March 27, it was announced that the sum of \$30,000 had already been subscribed of the \$100,000 necessary to construct a new hospital. It is confidently believed by those having the project in charge that the \$100,000 will be raised without difficulty.

Hospital for Infectious Diseases in Baltimore.—The tract of land of 143 acres adjoining Bay View which has been acquired by the municipality of Baltimore is to be utilized for the erection of detached buildings for the care of tuberculous patients and a detention home for neglected colored children, and later it has been decided to erect a hospital for the treatment of infectious diseases, of which Baltimore is said to be sadly in need.

Manhattan Eye and Ear Hospital to be Built Anew.—It has been announced that the Manhattan Eye and Ear Hospital has chosen a new site, and will erect new and commodious buildings to cost not less than \$200,000. The present site on Park avenue and Forty-first street will be abandoned, and a less valuable location will be chosen for the new structure. The hospital now has an endowment of \$171,000, and an additional sum of \$200,000 is needed. One of the directors has offered \$50,000 of this sum provided the other \$150,000 shall be raised by January 1, 1904. The great increase in eye and ear diseases, particularly the latter, in New York within the past year has caused such an overcrowding of the Manhattan Eye and Ear Hospital as practically to force the abandonment of the old institution and erection of more commodious quarters.

Sargent's Strength Test.—Dr. Dudley Allen Sargent, director of the Hemenway Gymnasium at Harvard, has devised a system of a universal test of strength and endurance of the human body which is likely to cause a revolution in the present plans of physical exercises. It is said that the author will issue an illustrated pamphlet bearing upon his new method. That the method probably possesses merit is evidenced by the fact that it was considered authoritative in the appointment of men in the various fields of athletics at Harvard during the past season. Generally speaking, the unit of measurement is obtained by multiplying a man's weight by his height in inches, thus showing the distance which his muscles lift a given number of pounds, and dividing the result by 12, so as to reduce it to foot-pounds. It is specified that the series of exercises, of which there are six, so devised that every muscle in the body shall be brought into play, shall occupy 30 minutes in every case. It is evident, then, that the number of times a person can perform the exercises in the half-hour indicates at once his speed, endurance and strength. Each exercise is allotted a certain percent in a fixed scale to equalize the natural differences between the various muscles of the body, and by means of a simple chart it is possible to keep a record of the improvement and development from week to week or month to month.

NEW YORK.

New Nurses' Home for Presbyterian Hospital.—Plans have been filed for a six-story building for nurses of the New York City Presbyterian Hospital. It is estimated that the cost will be about \$300,000.

Registration of Nurses.—A second bill which provides for the registration of nurses in New York has been introduced into the New York Legislature. This provides that nurses may register and practise in the State merely by making affidavit to be filed by the Secretary giving the history of their training and experience. As this bill raises no standard of experience and efficiency it is strongly opposed by the representatives of the Nurses' Association and by the leading training schools.

Camp for the Treatment of Tuberculosis.—Dr. Lederle, of the New York Health Department, has sent a letter to Mayor Low, urging the appropriation of \$35,000 for the establishment of a sanatorium for the treatment of tuberculosis on the tent and ducker plan. It is proposed to erect this camp on a tract of 20 acres in Orange county, which has been offered to the city for two years, rent free. Dr. Lederle states that with the \$35,000 he could provide a camp for 60 patients from May 1 to December 31 next. During the year 1902, 8,883 persons died in New York City from lung diseases, and in 1901, 8,135.

Baby Convalescents.—The fact that many babies after being discharged from the New York Babies' Hospital as cured or improved have been returned again at a later date for treatment through not receiving the proper care in their homes has led to the appointment of a visiting physician whose duty it is to follow up the serious cases. This physician goes to the home

and instructs the mother in the proper care to be given the infant, giving directions as to the preparation of food, bathing the child, ventilation and sanitation of the home, especially of sleeping-rooms, and if it is necessary he prescribes for the child.

Gift to Long Island College Hospital.—Through the generosity of J. Rogers Maxwell Long Island College Hospital is to have a new building. The donor has offered to build at his own expense the two central sections of the proposed structures as a memorial to his brother, Henry W. Maxwell, who before his death was a member of the board of the Long Island College Hospital and engaged in a plan for its reconstruction. A new wing will probably be constructed by the friends of Dr. Alexander J. C. Skene, and an appeal to the public will be made for the construction of an additional wing. George, Royal, and Charles Peabody have offered to equip an operating amphitheater which will seat 250 students. The whole structure will cost in the neighborhood of \$1,000,000 and when erected will be one of the best equipped hospitals in the country.

PHILADELPHIA, PENNSYLVANIA, ETC.

University of Pennsylvania to Have Hospital Improvements.—An appropriation of \$175,000 has been made by the Pennsylvania Legislature for the purpose of making various additions to the hospital of the University of Pennsylvania. An x-ray plant and a sterilization building will be constructed.

Allegheny General Hospital.—The Board of Directors of the Allegheny General Hospital has awarded the contract for the new building of that institution. It is to occupy the site of the old building on Stockton avenue. It will be six stories high in front, a three-story building in the rear. It is asserted that the foundations are now in place, and that the award of the contract assure the completion of the new structure by June 1, 1904.

Pure Food Legislation.—A bill which has recently become operative in New Jersey provides that no person shall distribute or sell, or offer to distribute or sell, or have in his possession with intent to distribute or sell, any milk which has been produced by cows that have not been daily supplied with pure and wholesome water; and no person shall wash or attempt to cleanse any can or utensil used for handling or transporting milk in water which he shall have reason to believe is polluted, contaminated or impure. A penalty of \$50 is imposed for each violation.

State Board of Barbers.—A bill creating a State Board of Barbers in Pennsylvania has passed the Pennsylvania Legislature and is now ready for the signature of the Governor. It creates a State board of two master and three journeymen barbers who shall formulate sanitary rules and regulations for the government of barbers. Every barber at present engaged in his occupation in first, second, and third class cities, and in boroughs of 10,000 population must pay a license fee of \$1 to the secretary of the board. Barbers throughout the State are almost unanimous in the opinion that the bill is commendable. It is believed that it will tend to drive out of business the cheap barber and his usually inexperienced workmen. Every shop must have up-to-date sanitary appliances.

SOUTHERN STATES.

North Carolina Nurses' Bill.—A bill which has passed the North Carolina Legislature requires that before a nurse can practise her vocation she must have had special training for at least two years, or must have a statement signed by three reputable physicians that she has actually engaged in nursing for a period of two years and in their opinion is qualified for such work. After January, 1904, a State board of examiners of nurses is provided for, said board to consist of five members composed of two physicians and three registered nurses to be elected by the Medical Society of the State of North Carolina and the North Carolina State Nurses' Association. The duty of the board shall consist in holding examinations at least once a year of all applicants who have pursued the necessary course and have the proper credentials as to moral character, etc. The board is provided with power to revoke any license which has been granted to a nurse in the State upon sufficient cause. An anomalous section of the bill reads as follows: "Nothing in this act shall in any manner whatever curtail or abridge the right and privilege of any person to pursue the vocation of a nurse whether trained or untrained, registered or unregistered."

WESTERN STATES.

Plea for the Establishment of an Institution for Epileptics.—The Indiana State Board of Charities in its annual report makes a plea for the establishment of a separate institution for epileptics. The statement is made that there are now in the State hospitals for the insane 402 epileptics; in the school for feeble-minded youth, 265; and in the county poor

asylums 293, making a grand total of 960. Of these 485 are insane, 410 feeble-minded, and 65 who have no marked mental deficiency.

Street Car Colds.—At a recent meeting of the St. Louis Medical Society resolutions were adopted declaring that as many colds and diseases of the respiratory tract are caused by prolonged riding in badly ventilated, draughty, and crowded cars, street car officials should be requested to take measures for obtaining a more uniform and equable temperature in their cars, and better protection against draughts. Cars making long runs with a temperature under 60° are condemned as dangerous and a menace to health.

Mentally Weak Pupils to be Segregated.—The Board of Education in Chicago is contemplating segregating mentally deficient pupils from those of the normal standard. A striking illustration of the deficiency of the present system emanated from the fact that a citizen was compelled to remove his deaf and dumb child from a school for the deaf because of her mental deficiency. Since there is no provision in the city for the instruction of such deficient children the board is seriously considering the above proposition.

Charities in Cincinnati.—A recent investigation of the contributions and public charities in Cincinnati showed that 24 institutions today receive about \$13,000 less from private subscriptions than 10 institutions received in 1870 that were doing the same kind of work. During this period the population in Cincinnati has increased about 50%. An examination of the church expenditure shows that the giving has not been diverted in that direction, for the total amount spent by churches had increased but 39%, while the increase in population had exceeded it by 11%.

Contagious Disease Hospital for Children.—It has been announced to the League of Cook county, says the Bulletin of the Health Department of Chicago, that two subscriptions, amounting to \$175,000, have been pledged for the support of the Children's Hospital Society of Chicago. It is believed that the sentiment raised by the "Thanksgiving story of the friendless cats and dogs" feasting while a grief-stricken father was vainly seeking a hospital for his 2-year-old daughter, who died in his arms from diphtheria, as told in the Bulletin of Health for November 29, is responsible in a large measure for the generous contributions which have been received to provide a children's hospital for contagious diseases in Chicago.

Placing-out of Dependent Children.—A bill which has been passed by the South Dakota Legislature prohibits the placing-out of dependent children from other States unless adequate supervision of the child's welfare is provided for. The society desiring to place a child must file a bond for \$2,000 with the county treasurer, "conditioned that such child has no contagious or incurable disease, has no deformity, is not of feeble mind or vicious character, and that such association or society will promptly receive and remove from the State such child if it becomes a public charge within a period of five years. Violation of this act on the part of the society or the persons receiving the child will be deemed a misdemeanor."

Peculiar Method of Interment.—The Michigan Bulletin of Vital Statistics for February, 1903, is authority for the following: One of the latest difficulties in the way of registration brought to the attention of this department is found in the complaint filed by the registrar of an upper peninsular township. He writes: "Quite a colony of Finlanders have immigrated to our land, and they seldom have a physician. When there is a death the corpse is put into a grave and left uncovered (save a few loose boards thrown over the top of the grave) for as long as two or three weeks, until some minister immigrates from the copper country." The registrar was uncertain as to whether the original deposition of the body in the ground or its final covering with earth attended with religious ceremonies was to be considered as the "interment." The department instructed him that the placing of the body in the ground, although the covering was not complete, was to be considered "interment" under the law and that a permit must be obtained in advance. The department also called the attention of the State Board of Health to the possible sanitary consequences resulting from such imperfect burial.

Legal Restrictions of the Marriage of Defectives.—The House of Representatives of the Kansas Legislature has passed the following bill:

Section 1. No woman under the age of 45 years, or man of any age, except he marry a woman over the age of 45 years, either of whom is epileptic, imbecile, feeble-minded, or afflicted with insanity, shall hereafter intermarry or marry any other person within this State. It is also hereby made unlawful for any person to marry any such feeble-minded, imbecile, or epileptic person or any one afflicted with insanity, or any person who has ever been so afflicted. Children born after a parent was insane shall not marry except under the above named conditions.

Sec. 2. No officer authorized by law to issue marriage licenses in this State shall hereafter issue such a license to any persons either of whom is afflicted with any of the diseases mentioned in Section 1 of

this act, knowing them to be so afflicted, unless the female party to such marriage is over the age of 45 years.

Sec. 3. No clergyman or officer authorized by law to solemnize marriages within this State shall hereafter perform a marriage ceremony, uniting persons in matrimony, either of whom is afflicted with epilepsy, imbecility, feeble-mindedness, or insanity, knowing them to be so afflicted, unless the female party to such marriage is over the age of 45 years.

Sec. 4. Any person violating any of the provisions of this act shall on conviction thereof be punished by a fine of not more than \$1,000 or by imprisonment in the State's prison for not more than three years, or by both such fine and imprisonment.

Notifiable and Nonnotifiable Diseases.—The Bulletin of the Health Department of Chicago for March 28 contains an interesting comparison of the deaths in London and Chicago from notifiable and nonnotifiable diseases. Seven specified causes of death from the contagious or infective diseases are included in the London table: Smallpox, scarlet fever, diphtheria, typhoid fever, the diarrheal diseases, measles and whoopingcough. Under the law all cases of the first four diseases must be notified or reported forthwith to the medical officer of health, and ample hospital provision is made for their isolation and treatment. The diarrheal diseases, measles and whoopingcough are not required to be reported or removed to hospital. Excluding smallpox from the comparison, the tables show the following remarkable results in the deaths from the notifiable and from the nonnotifiable diseases:

NOTIFIABLE DISEASES.

	London		Chicago	
	Total deaths.	Rate per 100,000.	Total deaths.	Rate per 100,000.
Scarlet fever.....	563	12.3	445	24.4
Diphtheria.....	1,181	25.7	596	32.7
Typhoid fever.....	590	12.9	801	41.0

The average mortality, in proportion to population, of these three diseases in Chicago—where there is no special hospital provision for their reception and treatment—is almost exactly double their average mortality in London, where every case must be reported, and where adequate hospital facilities are provided—the figures being 16.9 in London and 33.3 in Chicago in each 100,000 of population. On the other hand the mortality from the three nonnotifiable or optionally notifiable diseases is lower in Chicago than in London.

NONNOTIFIABLE DISEASES.

	London		Chicago	
	Total deaths.	Rate per 100,000.	Total deaths.	Rate per 100,000.
Measles.....	2,361	51.5	123	6.7
Whoopingcough.....	1,880	41.0	266	14.6
Diarrheal.....	2,504	54.7	713	39.1

The average mortality of this group is 49 per 100,000 in London and only 20 in Chicago, or nearly 2½ times greater in the former city. There is no adequate provision in Chicago for any of the contagious and infectious diseases save smallpox and the smallpox record since the isolation hospital was opened is more than satisfactory. There were but 5 deaths from the disease in Chicago last year, while there were 1,314 in London. In proportion to population these figures give 23.7 for London and 0.27 for Chicago in every 100,000.

CANADA.

Hygienic Institute for Western University, London, Ont.—The *Canadian Journal of Medicine and Surgery* for April asserts that a deputation recently waited on the Ontario Cabinet at Toronto, presenting a request that an institute of hygiene be established in London in connection with the Western University. The government has replied that they cannot at present accede to their application. The object of the university is to have the government build and maintain an institute equipped with laboratories for the purpose of providing scientific facilities for the prevention and treatment of infectious and epidemic diseases. The petitioners assert that something is due the western section of the province in view of the assistance granted Toronto and Queen's Universities; they will prosecute their application at a future date.

Growth of Hospitals in Ontario.—In 1881 there were 11 hospitals in Ontario; in 1890 there were 21, and in 1901 there were 53. During the last year several new hospitals have been built. The cost per patient daily in 1881 was 55 cents. In 1890 it had risen to 71 cents, while in 1902 it had risen to 90 cents. Nearly every good-sized town has now a hospital, and several small cities have more than one hospital. In 1881 there was one general hospital in Toronto, whereas at present there are 4, and a number of special and private hospitals. The cost has increased from 55 cents a day in 1881 to 90 cents in 1902, or an increase of 64%. Thus while the cost has greatly increased, the grant made by the government for the aid of charity cases has steadily declined. It is now only one-half of what it was some years ago. The total amount paid out last year by the hospitals in Ontario for the maintenance of these hospitals was about \$700,000. Of this sum the Ontario Government contributed \$110,000. The remainder came from municipal grants, the payment of pay-patients and donations.—[*Canada Lancet*.]

FOREIGN NEWS AND NOTES

GENERAL.

Increase in Cancer.—A paper by Dr. C. Templeton, of Dundee, Scotland, gives a review of the history of cancer as represented in that city in the last 25 years. The author states that the deathrate from cancer has doubled in that locality. The increase is found to be greatest after 45. Though both sexes have suffered from the increase, it is more marked in the male, the actual mortality, however, is higher among women. Males die most frequently from cancer of the internal organs, while in them cancer of the mouth and upper digestive system is also much more frequent. Smoking and worry, often given as theoretic causes of cancer, are eliminated by the author.

Ophthalmia in Egypt.—According to the *Lancet*, a meeting was held recently in Cairo, Egypt, to discuss the disposal of Sir Edward Cassell's gift of \$200,000 for the relief of ophthalmia in that country. It was proposed to create an "Ambulatory Dispensary," which would consist of a tent in charge of an inspector and officer, appointed for a term of three years. By the adoption of such an "ambulatory dispensary," they would be enabled to travel around the provinces and give special attention to diseases of the eye without putting the patients to the inconvenience of traveling any distance to receive treatment. The idea is to have the inspector work for two months in the province and then one month in Cairo. This plan, however, is only tentative and will in all probability not be accepted, as it has many objectionable features, among which is the inability to perform properly in a tent operations upon the eye.

GREAT BRITAIN.

Medical Women in England.—It is asserted that medicine as a profession for women is constantly growing in extent and popularity in London, and that medical women now holding degrees in Great Britain number more than 500.

OBITUARIES.

James A. Stenart, of Baltimore, Md., March 27, aged 75. He was graduated from the University of Maryland School of Medicine in 1850. From 1850 until 1851 he was physician of the Baltimore Dispensary, and from 1851 to 1861 was assistant physician at the Maryland Hospital for the Insane. He was appointed president of the Board of Health in 1873, and his prompt action in stamping out yellow fever by deporting whole colonies of patients and those who had been exposed to infection from the city to Anne Arundel county, about twenty years ago, was commented upon by the American Public Health Association as a remarkable feat of sanitary protection. In 1889 he retired from the Health Department, and in 1894 became secretary of the Maryland State Board of Health. He was also physician to the Maryland School for the Blind, surgeon of the First Maryland Regiment, a member of the American Medical Association, the Medical and Chirurgical Faculty of Maryland, the American Public Health Association, and was local inspector of the National Board of Health.

John Wallace Collins, near Pueblo, Col., March 20, aged 67. He was graduated from the University of Louisiana, New Orleans, in 1860. He was professor of gynecology and abdominal surgery in the Denver Medical College from 1886 to 1895 and emeritus professor since 1895. He was at one time president of the Colorado State Medical Society and was also physician and chief surgeon at the Colorado State penitentiary at Canon City.

Russell P. Fay, of Yonkers, N. Y., March 31, aged 39. He was graduated from the New York Homeopathic Medical College and Hospital in 1887. He organized the Yonkers Homeopathic and Maternity Hospital and was a member of its governing staff. He was also a member of the American Institute of Homeopathy and of the New York Homeopathic Society.

Thomas Foster, of San Francisco, Cal., April 1, aged 85. He was one of the oldest newspaper men in the country, having been connected in an editorial capacity with the Philadelphia *Public Ledger* and the *Daily Minnesotan*. He was government physician and surgeon for the Indians in Minnesota up to 1873.

William Henry Crosse, principal medical officer of the Royal Niger Company, died in London, Eng., February 24, aged 45. He was a recognized authority on blackwater or hemoglobinuric fever, and gave several valuable contributions on this disease to the pathological and epidemiological societies.

Frederick L. Marcotte, of Concordia, Kan., died at Leavenworth, Kan., March 18. He was graduated from the Chicago Medical College in 1877. He was formerly surgeon of the Missouri Pacific and Burlington and Missouri River Railways.

Goronwy Owen, of Mobile, Ala., March 30, aged 69. He was graduated from the University of Pennsylvania, Philadelphia, in 1857, and was professor of obstetrics and diseases of women and children in the Alabama Medical College.

Charles B. Ferrell, in Columbus, Ohio, March 23, aged 63. He was graduated from the Bellevue Hospital Medical College, New York, in 1873 and was a member of the Franklin County Medical Society.

John H. Woods, at Thomas, Okla., March 23, aged 101. He was the first probate Judge of Douglas county, Kansas, and had been actively engaged in the practice of his profession for seventy-five years.

William Eastman, in Mineral Point, Wis., March 15, aged 70. He was graduated from the Rush Medical College, Chicago, in 1871 and was a member of the American Medical Association.

T. G. Godshall, at Edge Hill, Pa., April 4, aged 43. He was graduated from the Hahnemann Medical College, Philadelphia, in 1888 and was a member of the Tri-County Medical Society.

James Shackelford, in Maysville, Ky., March 25. He was graduated from the Jefferson Medical College, Philadelphia, in 1861 and at one time served as State Senator.

Andrew Halliday, in Halifax, N. S., March 10, aged 37. He was associate professor of pathology in the Halifax Medical College and bacteriologist for Nova Scotia.

Nathaniel Oliver Cornwall, of Portland, Conn., March 31, aged 87. He was graduated from the New York College of Physicians and Surgeons in 1846.

Harry A. Noyes, of Pittsfield, Mass., died at Asheville, N. C., March 24. He was graduated from the Hahnemann Medical College, Chicago, in 1891.

William A. Howell, in Jarvis, Ont., March 23, aged 66. He was graduated from the University of the Victoria College, Cobourg, Ont., in 1860.

Hans M. Martin, of Newark, Ill., died in Aurora, Ill., March 17, aged 34. He was graduated from the Rush Medical College, Chicago, in 1897.

Cyrus E. Baker, in Claremont, N. H., March 23, aged 67. He was graduated from the College of Physicians and Surgeons, New York, in 1862.

James C. Burlington, in Attica, Ind., March 15, aged 65. He was graduated from the Indiana Eclectic Medical College, Indianapolis, in 1886.

Charles W. Dulin, in Nevada, Mo., March 23, aged 30. He was graduated from the College of Physicians and Surgeons, Chicago, in 1895.

August Negendank, of Wilmington, Del., April 2, aged 80. He was graduated from the Philadelphia College of Medicine and Surgery in 1854.

John Steifel, in Bucyrus, Ohio, March 14, aged 78. He was graduated from the Homeopathic Medical College of Missouri, St. Louis, in 1887.

John M. Douds, in Beaver Falls, Pa., March 17, aged 60. He was graduated from the Homeopathic Hospital College, Cleveland, in 1881.

Charles W. Roberts, in Scranton, Pa., March 20, aged 55. He was graduated from the Hahnemann Medical College, Philadelphia, in 1889.

Ross C. Kirkpatrick, in Los Angeles, Cal., March 13, aged 60. He was graduated from the Starling Medical College, Columbus, in 1870.

Reinhard H. Weber, of Philadelphia, March 29, aged 59. He was graduated from the Jefferson Medical College, Philadelphia, in 1865.

Augustus C. E. Hertel, in San Jose, Cal., March 14. He was graduated from the Cooper Medical College, San Francisco, in 1859.

John H. Fisher, in Augusta, Mich., March 23, aged 69. He was graduated from the Eclectic Medical Institute, Cincinnati, in 1852.

T. T. Oliver, of Chicago, Ill., April 1, aged 73. He was graduated from the medical department of Victoria College, Toronto, in 1853.

Charles Howell, in Ann Arbor, Mich., March 20, aged 73. He was graduated from the University of Michigan, Ann Arbor, in 1861.

Albert R. Erksine, in Huntsville, Ala., March 24. He was graduated from the University of Pennsylvania, Philadelphia, in 1851.

Clayton T. Hall, of Mason, Ohio, March 11, aged 36. He was graduated from the Medical College of Ohio, Cincinnati, in 1889.

Charles F. Parker, in Boston, Mass., March 24. He was graduated from the University of Vermont, Burlington, in 1883.

Rosecoe M. Parsons, in Traer, Iowa, March 21, aged 55. He was graduated from the Chicago Homeopathic College in 1882.

Harvey L. James, in Shelby, N. Y., March 14, aged 46. He was graduated from the University of Buffalo, N. Y., in 1881.

Oscar Steur, at Washington, D. C., April 4. He was medical examiner of the American Museum of Natural History.

J. P. Shacklett, in Ekron, Ky., March 22. He was graduated from the Louisville Medical College in 1880.

Walter H. Vincent, in Orwell, Vt., March 6. He was graduated from the New York University in 1884.

John Miller, in Buffalo, N. Y., March 18, aged 79.

Joseph S. Ames, of Hoiden, Mass., April 1.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

THE POSSIBILITIES OF CLEAN OBSTETRIC WORK IN THE SLUMS.¹

BY

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The maternal mortality in childbirth in the General Hospital of Vienna in 1846 was 11¼%. In 1889, less than fifty years later, Dr. Price, in his annual report to the managers of the Preston Retreat, Philadelphia, mentioned a series of 540 deliveries without a death. Such results have been made possible, it is now well known, by antiseptics or asepsis.

The antiseptics of obstetric work as usually described in the textbooks is so complex and elaborate that it is rarely fully carried out by the ordinary practitioner in all his cases, and as a result there is still room for improvement in his records. This elaborate procedure can be greatly simplified and rendered easily attainable for all without destroying its efficiency if the motto "he doeth all things well" is remembered and practised. For antiseptics substitute cleanliness, and for chemical solutions, soap, water and a scrubbing-brush, and obstetric technic becomes very simple and easy enough for every one to practise, and to practise always. It is not enough to rinse the hands with a little soap and water, but a good-sized hand-brush is necessary, and with it the accoucheur must go over every part of his hands systematically. Don't miss cracks and crevices, but scrub them all, 15 minutes at a time; scrub well, scrub constantly. Use plenty of soap and hot water and change the water frequently. Germs are apt to collect beneath the nails, and unless the latter are kept very short and scrubbed often, they will always be found there. In this way by the use of soap, water, and a scrubbing-brush the doctor's hands can be rendered quite sterile without the use of any irritating chemicals or rubber gloves. If any one doubts this, and happens to be about a hospital, let him get the bacteriologist to take a culture from his hands after they have been so scrubbed and see what growth he will get.

After the hands are once clean, keep them so. You may scrub for an hour, but then, if you wipe your hands on a dirty towel that some helping friend hands you, your asepsis will be destroyed. Dirt must be avoided at all times. The day has passed when the doctor after tying and blanketing his horse could enter the house and make a vaginal examination of a woman in labor without even asking for water. If puerperal sepsis follows, such a doctor has only himself to blame, and, though he may appease his conscience and save the woman by an early cleaning out of the uterus, still he might far better have avoided the trouble entirely, for by far the most common cause of sepsis is a dirty physician's finger.

It is unquestionably an advantage to have the lying-in room as clean as possible, but, if you are called to a little back alley, and after groping your way up a pair of stairs that daylight never reaches, find a negroess who indulges in a bath only once a month or semiannually, even there good results are possible if the doctor himself does his work well. But here, as in all his work, he needs the greatest patience and care, and above all a conscience. Though the case is one for which he will not get a cent, he cannot say to himself, "I am in a great hurry; I must get on to that next patient of mine; I haven't time to wait for nature to take its course; I will just put on the forceps and save the woman much suffering," but he must remember that the chances of sepsis are greatly increased by the use of forceps, especially in surroundings such as I have drawn. Unless there is a distinct indication for their use, they

should be avoided, and in the end the patient will have much more comfort and much less danger and suffering.

To repeat, the most important rule in obstetric work is cleanliness—in the first place of the physician's hands, in the second place of the woman. Ordinarily, even in "slum" work, a vaginal douche before and after labor is not necessary, but, if the patient has a recent vaginal discharge, particularly if yellow in color and profuse in quantity, not only should a bichlorid douche be given, but the vagina should be thoroughly scrubbed, for the discharge is probably gonorrhoeal in nature and there is great risk of sepsis to the mother and of an ophthalmia for the child.

A woman in the "slums" seldom has a place where she can get into a tub and take a full bath, but she can take a sponge-bath in a basin, and she can scrub the pubes and perineum thoroughly with soap and water, and this should be insisted upon. Another small detail that should never be forgotten is the enema just as labor is commencing. If, when the doctor reaches his patient, he finds that an enema has not been given, he should make it an invariable rule to see that it is given without delay, and if there is no one at hand to give it, or if the woman has no syringe, the physician should give it himself with his own syringe. This is of great importance in order to keep the woman clean, for with few exceptions, if the enema is omitted, the bowels will move as the head comes down onto the perineum, and the birth-tract will be infected with feces.

The use of a Kelly pad in labor is rather unusual, but it will be found very convenient, and helps materially to keep both the patient and the bed clean. If the left lateral position is used, the pad is placed under the left buttock, the woman lying very near to the edge of the bed, or, if the dorsal position is preferred, the procedure recommended by one of our western doctors is very useful. It consists simply in placing the patient across the bed as for a forceps application with the buttocks projecting beyond the edge and the legs of the patient resting one on each of the physician's knees. The Kelly pad is then placed under the buttocks, and it will be found that both the patient and physician are quite comfortable, and can remain in this position two or three hours if necessary, and the woman's perineum is kept clean.

After cleanliness has been procured for both doctor and patient, the next essential to good obstetrics is an accurate diagnosis of the position and presentation of the fetus. In the vast majority of cases, labor would proceed to a normal and successful termination if left entirely to itself, but occasionally there is an abnormality in the position or in the course of labor which demands the physician's interference, and sometimes this must be immediate. If an arm comes down by the head and the doctor mistakes it for a leg—a mistake not so hard to make—and makes traction upon it, he not only fails to help the woman, but he greatly increases her difficulties, for he brings the shoulder down into the pelvis and produces an impossible position, and the harder he pulls the more firm he makes the impaction, which later must be relieved and version performed before the woman can be delivered. Such a case illustrates the need of an accurate diagnosis, for then the doctor is master of the situation, he knows just what is going on, and if anything unusual happens he knows immediately what it is and how to handle it.

To discuss the different means of diagnosis is beyond the scope of this paper, but in all of them experience is a very important, if not the most important factor. When a medical student reads the description of the fetal heart sounds, he imagines he has only to put his stethoscope or his ear to the abdomen of a pregnant woman in order to hear something as distinct as the ticking of a watch. In a few cases this is a true picture and the heart sounds can be heard without difficulty, but in most cases it is not true, and the first time one listens for them probably nothing is heard. I have heard a young physician, in charge of one of the largest obstetric and gynecologic clinics in Philadelphia for over a year, say that he heard the fetal heart sounds in what turned out to be a fibroid, and I can well remember a case in which, though I had already done considerable obstetric work, I said that I heard the fetal heart sounds, but when the baby was delivered a few minutes later, it was macerated and had evidently been dead for some days,

¹ Presented to the Rochester Pathological Society, November 20, 1902.

The opposite mistake is even easier to make, and many a living healthy baby is delivered when the doctor fails to find the heart sounds. As the ear must be trained, so must the finger, and the student who examines his first patient usually has trouble in finding the os; and I am sure that it is a considerable time before he can differentiate between the large and small fontanelles.

I mention these facts simply to illustrate my point that experience is very important in obstetrics, as in almost everything else. In most medical schools the student, at best, has an opportunity to take care of but two or three patients, and he needs further practical experience in this branch before he begins the practice of his profession. The wise student, either during or after his medical course, will take advantage of the opportunity to do further obstetric work in the different dispensary courses. If he works for one, two, or three weeks in this way, he will find the experience obtained of more value to him than most of his courses in the medical school.

Obstetric cases are so common that few are reported except from the large maternities where thousands are delivered within a single year; but in order to give some proof of the value of the preceding remarks, I should like to report 120 cases, over 100 of which were delivered in the "slums" of Philadelphia. Some of these patients were in the poorest possible surroundings; none of them had a regular trained nurse, and many of them had absolutely no attendant except some inquisitive friend who was glad "to see how things went," but was afraid even to wash the baby. I shall not go into details of these cases, of some of which I have not the full statistics. The earliest were delivered while I was an undergraduate, and most of them I had never seen until called to the labor, so they had practically no care during pregnancy.

Of the first 35 cases I have the record of only the names, addresses, dates of delivery and results. The mothers all recovered, and none suffered from sepsis. I lost two babies, both stillborn, and one was born 40 minutes before I reached the house. In both cases, after practising artificial respiration for from half an hour to an hour, I succeeded in getting the child to breathe, but both died within two or three days of pneumonia.

Of the remaining 85 cases my records are more complete. There were 43 cases of the L. O. A. position, 17 of the R. O. P., 12 of the R. O. A., 5 of breech presentation, 1 of arm presentation, and in 8 cases the position was unknown, as the children were born before I arrived. This makes a total of 86 cases instead of 85, but the discrepancy is due to the fact that one was a case of twins. The percentage of the R. O. A. cases is exceptionally high, and I believe that some of them were probably wrongly diagnosed, as I see that many of them were among the earlier cases.

In these 85 cases there was one maternal death, three fetal deaths, and two premature and macerated fetuses were delivered. One of the three children I lost was one of the twins; it was stillborn and I could not revive it. I think the cause was pressure from the prolonged labor, for the mother was a primipara, and finally forceps had to be used. In the second case the child was born two hours before I reached the house; it had never breathed, and efforts to revive it were unavailing. The third infant died from pneumonia on the fifth day. The premature and macerated fetuses were syphilitic.

One of the fetal deaths just mentioned, and the two in the first part of my series, could probably have been prevented by more prompt attendance on the patient. This is one of the most difficult problems in "slum" work—how to avoid these delays. Many women don't send for the doctor until the last moment, and unless he can go at once, he is too late. Moreover, cases of labor, like most medical cases, seem to run in groups, so that some day the calls come thick and fast. I have been obliged to look after five deliveries in a single day, and other days there were few or none. If there are enough men on the course to avoid a rush on busy days, they will sit around doing nothing most of the time. An occasional fetal death, then, due to delay, seems unavoidable.

I lost one mother, a primipara. The labor was normal, but immediately after the birth she complained of a severe pain in the left side at the junction of the sixth rib and anterior axil-

lary line. Upon listening to the heart, which was beating violently from the efforts of labor, I discovered a loud mitral murmur which I had not previously detected. No other signs were then present. On the next day the pain was as severe as ever and signs of beginning consolidation in the lung at the point mentioned were found. The third day the signs of consolidation were more definite and the patient was sent to the Pennsylvania Hospital, as the care she had at home was very poor. She died there three days later, her symptoms being like those of pneumonia in which the heart finally gives out. The temperature, however, was never above 102°, and from the way in which the trouble began and from the heart lesion I believe that it was not an ordinary pneumonia, but a large hemorrhagic infarct of the lung caused by an embolus from the diseased heart. No autopsy was permitted.

One other case was complicated by organic heart disease, but the trouble was detected beforehand, and, as soon as labor began, the patient was anesthetized and delivered rapidly by forceps after manual dilation of the cervix. She did nicely.

As other complications occurring in this series of cases I would mention four cases of sepsis, two of postpartum hemorrhage and one of eclampsia. In three of the four septic cases I found that the woman had a profuse yellow leukorrhoea for a week or ten days before delivery. It was probably gonorrhoeal in nature, and in one case surely so, for the baby developed a typical gonorrhoeal ophthalmia. In none of these cases was the leukorrhoea discovered before the birth of the child and no preparatory vaginal douches were given. This seems to me to furnish a very plausible cause for the sepsis which developed later. In the fourth case, a primipara, there was a bad laceration of the perineum, which was sewed up immediately, but which did not heal by first intention, and I believe that the sepsis was due to absorption from those raw surfaces, for the uterus never at any time seemed involved. None of these cases of sepsis was severe, all responded well when the source of infection was thoroughly cleared away.

I cleaned out the uteruses with my finger, the whole hand or half-hand being introduced into the vagina, and then gave an intrauterine bichlorid douche. After this in each case the symptoms promptly ameliorated and nothing more was needed. I should like to mention the fact, however, that in some of these cases the patient had one or more chills within two or three hours after the cleansing, the first chill sometimes severe, the others milder and milder until they stopped. They did not return the next day. I think that these chills were caused by the sudden and more rapid absorption of septic material from the uterus, for after scraping away the diseased tissue, many new lymph spaces are opened, so that the first effect is a further poisoning of the system heralded by a chill. This further poisoning is temporary, however, and permanent relief soon follows. Another possible explanation is that the chills were wholly nervous in origin, for I did not use an anesthetic in any of these cases, so there was more or less nervous shock.

I prefer the use of my finger to a curet because it is simpler, with it a more exact idea of the conditions of the inside of the uterus can be obtained, it does not frighten the patient with the thought of an operation, and an anesthetic can be dispensed with. However, if in any particular case the results were not satisfactory, I should not hesitate to use the curet, and use it early. The source of sepsis must be got rid of in one way or another.

In the whole 120 cases the forceps were applied only ten times, the most common indication being uterine inertia.

To summarize: The mortality for the mother was 1 death in 120 cases, about $\frac{1}{120}$ of 1%; the mortality for the child, 5 deaths out of 121 children, about 4%, but several of those, as has been explained, were due to the absence of the physician when the child was born. That there is nothing remarkable in this record I fully realize, and I publish it simply to show the results obtained in the "slums" by the use of the precepts of the earlier part of this paper. It does show, however, that by very simple methods even in very unfavorable surroundings a presentable record can be obtained.

NOTE.—The obstetric cases reported do not include all those occurring in the dispensary while I was in charge, but only those attended personally by me.

BLOOD SPREADS AS A ROUTINE MEASURE.

BY

RAYMOND WALLACE, M.D.,

of Chattanooga, Tenn.

A method of routine examination which I have used with considerable success may perhaps be condemned as somewhat superficial and more or less inaccurate, but to a trained observer and in private practice it has some marked advantages. The method in brief is as follows:

Make blood spreads in each case just as you would take the pulse or the temperature. To insure accuracy, several points must be borne in mind. The cover-glasses should be absolutely clean—preferably washed with soap and water, followed by a solution of acetic acid and alcohol. These may be wrapped and carried in filter paper, ready for use. Some experience should have been had in making good spreads, so that the observer becomes accustomed to a spread of an approximately equal concentration of corpuscles. These spreads may be taken to the office and at once stained in a solution of Wright's malarial stain, the fixation occurring synchronously with the staining, through the methyl alcohol contained in the stain. The spread may then be immediately mounted in balsam and examined.

With a little experience, various blood changes—a poikilocytosis, endoglobular degeneration, normoblasts, megaloblasts, an eosinophilia, the malarial parasite, a marked decrease in the number of red cells, a leukocytosis of any considerable degree, or a leukemia may at once be recognized, and thus point to the necessity of a more thorough blood examination with a numerical or differential count.

This method, combined with the use of the Tallquist hemoglobin chart at the bedside, makes a very satisfactory routine measure, and I am convinced that not only are obscure cases often cleared up, perhaps with considerable surprise, but that this method faithfully carried out will, in the long run, yield more valuable results than the occasional blood count and examination which is generally made only in extreme cases.

COMPRESSION OF THE AORTA IN POSTPARTUM HEMORRHAGE.

BY

L. D. SHEETS, M.D.,

of Bloomfield, N. J.

In *American Medicine* of March 7, Leo Jacobi, M.D., has recorded a case of postpartum hemorrhage, which reminds me of a case of my own which occurred in 1856, while practising in Indiana.

I was called to attend Mrs. G. in her second confinement. I was told that she had a very serious time in her first labor, the child was still-born after she had been in labor nearly four days.

This labor progressed well, but in from 15 to 20 minutes after delivery a very profuse hemorrhage occurred with the placenta undelivered. Remembering that Prof. G. S. Bedford advised large doses of tr. opii in such cases I immediately resorted to it in teaspoonful doses.

I now introduced my hand to remove the placenta, which I found after considerable difficulty, forcing my way through an hourglass contraction at the fundus of the uterus. Nearly the entire placenta was adherent and my efforts to detach it caused the patient so much pain that upon the urgent importunities of herself and husband I withdrew my hand.

Hemorrhage continued and patient seemed sinking. I therefore sent for a consultant to confirm the necessity of removal of the placenta. Patient was now almost pulseless, skin was cold and covered with a cold, clammy sweat, she declared she was dying. Having no other stimulant I gave her laudanum and camphor.

It then occurred to me to exert pressure over the abdominal aorta (although I did not remember ever hearing of its being done) with the hope of saving her until a consultant arrived. The hemorrhage ceased immediately, the perspiration soon dried up, and the patient seemed to rally somewhat, but she complained bitterly of cramps in the lower extremities.

Word having been received that the doctor for whom I sent was not at home I urged the patient to let me make another attempt to remove the placenta. Having received consent I again introduced my hand and persevered against all entreaties to desist, until the placenta was detached and removed. The hourglass contraction continued, almost paralyzing my hand.

Constant pressure was maintained on the aorta during the detaching and removal of the placenta.

I then pressed the uterus well down in the pelvis, that hemorrhage might not be renewed, and began to administer brandy, which was given every 15 minutes for 30 hours, when reaction commenced. All this time she had to remain on her back, the least effort to turn her to either side would induce syncope. The brandy was gradually withdrawn. After reaction was fully established, as the patient was very constipated, a laxative was ordered. In those days it was the regular routine to give a cathartic on the third day. Some little fever followed the reaction, but soon passed off. Quinin was then ordered for a few days. Attendance ceased in about a week and patient made a good recovery.

As you may have observed this case occurred many years ago; also in a country practice, which will account for the meagerness of the remedies at hand. And in regard to the short attendance I would say that in those days an obstetric case some distance in the country was not visited the second time unless something unusual occurred. In another bad case I checked the hemorrhage immediately by the introduction of tolerably large pieces of ice. This was a primipara to whom I had given chloroform; and I blamed the chloroform for preventing contraction of the uterus.

REPORT OF A CASE OF ECTOPIC PREGNANCY OF LONG DURATION.

BY

E. E. EVANS, M.D.,

of Lawrence, Kan.

L. B. R. was born in New York, September 6, 1828. Her family history is good. Measles in childhood left a cough, which persisted through life. Menstruation began at about 14 years. At 16 the contraction of a "cold" during a menstrual period brought on dysmenorrhea, from which she afterward suffered. Her periods were regular. She attained a stature slightly above the average. She was married at 23. She first became pregnant 13 years after marriage (in March, 1865). The



Lithopedion. On the left is seen the trunk and head, and on the right the uterus and appendages.

usual signs of pregnancy were present, and quickening occurred about the fifth month. Except for the continuation of the monthly periods, gestation was considered normal. Labor began about the expected time (December, 1865), and continued about 36 hours, when there was a complete abeyance. About a week later vigorous fetal movements were noted, which suddenly disappeared and never returned.

Abdominal enlargement persisted for 12 or 15 years, then began to diminish, but never entirely disappeared.

Upon her death (in October, 1898, almost 33 years after the futile labor noted) I removed the lithopedion here illustrated. It occupied the right tube, which was not ruptured, and lay in the right iliac fossa.

That portion next to the uterus (in illustration) represents the head. It is of bony hardness, but without structure or section. The other portion represents the trunk, a heterogeneous mass, no vestige of the limbs remaining. The whole fetus is 7 x 4 x 3 inches, and weighs four pounds.

ORIGINAL ARTICLES

CONGENITAL ABSENCE OF THE CLAVICLES, WITH PHOTOGRAMS AND RADIOGRAMS: CLEIDOCRANIAL DYSOSTOSIS.

BY

HARRY M. SHERMAN, A.M., M.D.,
of San Francisco, Cal.

The present paper is not in the shape it was when presented to the Association in Philadelphia in June; another case has been added, and some recent literature bearing directly on the subject has been quoted. But as the paper was never anything more than a description the changes are only in the direction of additions and amplifications. At the meeting of the Association I presented the following description of Case I:

The child was a boy of 3; he was normal mentally but had marked evidences of rachitis, without having, however, in his long bones curvatures which required surgical intervention. An obvious lesion was a delayed ossification of the bones of the skull, both fontanelles and the frontal suture being widely open. There was no hydrocephalus, but the frontal bones were very prominent, the right the more so. He had, on the left side, only a rudimentary clavicle on palpation, and only the sternal half of the bone on the right side. The radiogram fails to show either of these as visible bones (Fig. 1). He had deformed scapulas, the spinous processes seeming to be too high on the body, and not as prominent as they should be, but the acromion processes were present and properly located. The supraspinati and infraspinati muscles seemed to be atrophied or absent, and so did the posterior halves of the deltoid muscles, but there must have been some muscular tissue in all of these locations, for the function of the shoulders was practically perfect, and the boy could put either hand on his head or behind his back or hold his arms out sideways horizontally



Fig. 1.

from his body. It was possible to pull the shoulders forward with very little force and to touch them together under the chin (Fig. 2). The act caused no pain or discomfort, and the shoulders returned spontaneously to their usual position as soon as they were released. The lack of the clavicles seemed to be no detriment to the child, and in fact their absence had not been known, and was discovered by me during an examination for other conditions.

A second case is now added to the above. The child is a girl of 7, whom I first saw two years ago, suffering from well-marked rachitis. She readily recovered from this, but became somewhat heavy and slow and at times when she was tired she limped. I examined her several times to discover the cause of the limp and in the course of one examination found the scapulas higher than normal and very prominent, especially in their upper parts. There seemed to be much the same fault to be found with the bone as in the previous case and the supraspinati and infraspinati muscles seemed to be atrophied, even though all motions appeared normal. I sent the child to Dr. L. Newmark for a neurologic examination and he reported that no lesion of the nervous or muscular systems was present and noted the absence of the clavicles. Further examination failed to show even rudimentary clavicles and none appeared in a radiogram (Fig. 3). In addition to the absence of the clavicles the sternum is much depressed. The fontanelles and sutures in the skull have closed, but there are well-marked depressions along the suture lines, including the frontal suture, and the head is large with prominent frontal and parietal eminences. The bridge of the nose is not sunken in, but the line of the bridge is quite concave. Mentally the child is normal. In this case, as in the other, the shoulders can be made to touch each other under the chin easily and painlessly, but not by the voluntary effort of the child (Fig. 4). When they are released from this position they return spontaneously to their usual



Fig. 2.

one and their unusual mobility does not seem to interfere with the use of the arms (Fig. 5).

In *La Tribune Médicale*, July 23, 1902, is reported a lecture by M. Pierre Marie, on "La Dyostose Cleidocranienne," and it describes four cases which are similar to my two.

1. A woman with a large head, prominent frontal and parietal bones, grooves along the suture lines and open fontanelles. She had also a high arch to her palate and evidence that the palatal processes of the bones had not fully united, though there was no cleft-palate. Her teeth were irregular.

She had sternal fragments only of the clavicles.

2. A child, daughter of the woman just mentioned, who was

like her mother in all particulars except that she had no clavicles at all, and she had had a persistence of the first dentition, the teeth being at the same time good.

The amplitude of movement of the shoulders in these two cases was the same as in those I have described, and while in my children no disability had developed

because of the lack of the clavicle, in the woman reported disability had developed and she could not hold her

Marie points out the evident hereditary character of these odd malformations, but says it has never been



Fig. 3.

arms out straight before her, nor lift nor carry her babies easily.

3. A man with a very large head and the usual prominent bones and grooves and open fontanelles. He had a narrow and cleft-palate, and bad and irregular teeth. Of the clavicles he had fragments at each end of the bones.

known to run more than two generations, and that therefore there must be a tendency for a return to the normal type. He notes that all his patients showed signs of rachitis in addition to the malformation, and emphasizes the fact that they may develop syringomyelia and hydrocephalus.

I have asked the two family physicians of my two chance cases to look up the hereditary element, and Dr. J. T. Jones, at Grass Valley, Cal., reports that both father and mother of my boy case are properly and well formed and have clavicles. Dr. Geo. H. Aiken, of Fresno, Cal., reports of the father of the girl patient: "I find the chest full, broad and very well developed. There is no absence of the clavicles, but evidence of fractures of both with overlapping and imperfect union. The fracture of the left clavicle occurred when he was 2 years old. The head is large and square, with the top decidedly flattened. I find no special depression along the whole length of the sagittal suture, but quite a marked depression at and just posterior to the anterior fontanelle. I believe he was rachitic in early life." The mother of the child I have myself examined and she is normal.

Unless, then, there is some hereditary force possible in my girl case, the father having a large head with a depression at the anterior fontanelle site, my cases must be chance occurrences of this particular type of imperfect and aberrant development.

The Open Door.—A bill introduced in the Minnesota Legislature March 4 allows the State Board of Medical Examiners to grant licenses, without any examination, to physicians already licensed in some other State which has a standard equal to that of Minnesota. Each applicant for a license must pay a fee of \$10, which the board may retain, regardless of the results of examination. It is made the duty of every county attorney to prosecute cases of practice without license whenever requested so to do by the board of examiners or any five of its members.—[*Journal American Medical Association.*]



Fig. 4.



Fig. 5.

4. A boy, son of the man just mentioned, who was like his father in all essential particulars.

—The man, No. 3, had developed syringomyelia, and, although he formerly had been a skilled artisan, he was then wholly incapacitated for any work.

DEGENERATION OF THE ERYTHROCYTE.¹

BY

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of Philadelphia.

Demonstrator of Clinical Medicine, Jefferson Medical College; Hematologist to the German Hospital, etc.

Hematology is a topic which has been so thoroughly investigated that it has become familiar, not only to the laboratory student, but also to every alert clinician. From the latter's viewpoint, however, it may not be unprofitable to consider erythrocytic degeneration and with this aim in view I purpose to approach the topic, endeavoring in the following inquiry to submerge special technicalities and to minimize the discussion of mooted and theoretic points, in the hope of applying practically our present knowledge to medical diagnosis and prognosis. The various degenerative changes affecting the erythrocyte are not to be regarded as definitely characteristic of themselves, but rather as links in the chain of clinical evidence afforded by a complete blood report, which, to be of any real value, must in turn be correlated with the general semeiology of the patient in question. It may not be out of place to remark that the province of hematology is not primarily to furnish absolute criteria of disease, but on the contrary, to develop data which may prove essential either to corroborate or to complete the phenomena otherwise elicited. Interpreted thus, the blood report is of great utility in every day routine medical and surgical practice, but hematology divorced from familiar bedside signs of disease in many cases leads to erroneous conclusions and to false diagnostic inferences. To neglect well-established clinical evidence in our enthusiasm for apparently incontrovertible laboratory findings not only narrows one's diagnostic perception, but brings into disrepute such findings among those who, perchance, have failed to correlate them intelligently.

For the purpose of description, the various degenerative changes to which the erythrocyte is subject may be classified under the following headings:

- I. Alterations in viscosity.
- II. Simple decoloration.
- III. Total necrosis and disintegration.
- IV. Deformities of shape and size.
- V. Atypical staining reaction.
- VI. Megaloblastic forms.
- VII. Granular basophilia.

It is to be understood that no hard and fast line of demarcation can be drawn between these groups, since the several changes here included are more frequently encountered in combination than singly. These changes, it will be noted, are such as can be studied by simple microscopic examination of the fresh blood and of the stained film, and their recognition involves the application of familiar and simple technical methods, easily acquired and available for practical every day work. Of these methods it seems inadvisable to speak here in detail. I shall omit the discussion of the isotonicity and the agglutination of the erythrocytes, as well as their behavior under the influences of thermal, mechanic, and electric agents—all questions of experimental rather than of clinical interest.

I. *Alterations in Viscosity.*—When a drop of blood, collected upon the surface of a glass slide, is allowed to remain exposed to the air, the slippery, greasy feeling of the freshly-shed blood is soon replaced, as coagulation progresses, by a sensation of stickiness or viscosity, readily appreciable by the finger. In normal blood the erythrocytes, by virtue of their adhesiveness, tend to adhere face to face, and under the microscope are seen to cling together like a stack of coins. When this inherent property of adhesion is increased (*hyperviscosity*) they lose their normal tendency to form rouleaux, and accumu-

late in large, irregular masses in which the distinctive histologic attributes of the cells are masked or lost. The individual erythrocytes detached from such a mass may show every imaginable type of distortion, losing their typical biconcavity and disc-like form, and being converted into elongated, misshapen bodies which bear not the slightest resemblance to the original cells. When this property of adhesion is greatly enfeebled or lost (*hypoviscosity*), the erythrocytes form neither rouleaux nor irregular masses, but float free in the plasma as isolated cellular entities. The viscosity of the whole blood is apparently influenced to a large extent by the cellular elements, chiefly by the erythrocytes, although the viscosity of the serum must also be regarded as a determining factor of more or less importance.

Hirsch and Beck, who recently published a minute study of blood viscosity, have determined that the "viscosity value," as they term it, of human blood is about five times that of distilled water, *i. e.*, the viscosity of blood having a specific gravity ranging between 1,045 and 1,055 is expressed by the figure 5.1, in comparison with that of water, which equals 1, the temperature of both fluids being the same, 38° C. Although no close relationship can be distinguished between the degree of viscosity and the specific gravity of the blood, these experimenters have apparently proved that the lower the density of the blood the less marked its adhesiveness. The latter is exaggerated in individuals living upon a largely nitrogenous diet; and is greatly modified by starvation. Weir Mitchell has observed that hyperviscosity develops when blood is subjected to the direct action of snake venom, while Stengel has noted a similar condition resulting from contaminating fresh blood with the serum of patients suffering from chlorosis, pernicious anemia, and leukemia. Anyone who has done much blood work is familiar with the marked fluidity of the fresh specimen in the high-grade anemias, and with the diminished viscosity of the erythrocytes and their disinclination to form rouleaux under such circumstances.

II. *Simple Decoloration.*—Under the microscope the normal erythrocyte appears of uniform color and density, save for a somewhat paler area corresponding to its central biconcavity, whence the tint insensibly blends with a relatively darker zone paralleling the periphery of the corpuscle. This evenness of color depends upon the homogeneous distribution of the hemoglobin throughout the cell stroma, for, in the light of our present knowledge, we must accept Rollet's view, that the red corpuscle consists of a spongy network or stroma in which the hemoglobin is embedded, possibly in combination with a nucleoprotein of the cell. We must decline to adopt, for obvious reasons, Schäfer's theory, that the erythrocyte is a vesicular mass, the essential parts of which are an external enveloping membrane and an internal fluid content.

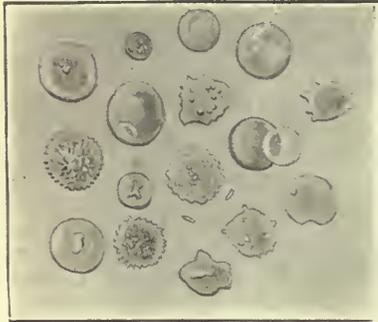
Simple loss of hemoglobin, and consequently decoloration of the erythrocytes, is a familiar change in blood deteriorations of a moderate grade, notably in those forms of secondary anemia and of chlorosis which involve neither conspicuous hemoglobin and cellular deficiencies, nor deformity and nucleation of the erythrocytes. The decoloration may be quite uniform throughout the cell, beginning as a symmetric enlargement of the normally lighter area, and spreading progressively toward the periphery. A cell thus affected sooner or later loses its normal biconcavity, and, in the extreme instance, is converted into a practically colorless shell or phantom, which would be invisible were it not for its faintly colored marginal zone, where a small amount of hemoglobin tends to persist, in spite of its dissociation from the rest of the stroma. "Hayem's achromocytes" and "Ponfick's shadow corpuscles" are suggestive terms by which these extreme examples of cellular pallor are designated. Or, instead of this uniform decoloration, the cell may exhibit patches of pallor of unequal intensity, in case the degeneration

¹ Read, by invitation, at the Ninety-seventh Annual Meeting of the Medical Society of the State of New York, Albany, January 27, 1903.

involves several portions of the stroma simultaneously, causing more rapid and greater hemoglobin loss in certain areas than in others. Still other corpuscles show an irregular enlargement of their hyaline centers, with the ultimate production of various irregular figures, as well as of streaky, pale areas overlying parts of the stroma from which the hemoglobin has been removed. In whatever form these hemoglobin-free areas develop, they always exhibit in the dried and fixed blood film a selective affinity for basic stains, such as methylene-blue and

thionin, by which they are colored with abnormal intensity.

This phenomenon of simple decoloration has been exhaustively studied by the Italian school, especially by Maragliano and Castellino, who interpret it as a form of endoglobular degeneration, and by Celi and Marchiafava, who



Decoloration and Necrosis of the Erythrocytes. Cells showing various phases of stroma degeneration, ranging from simple loss of hemoglobin to total necrosis and fragmentation. (Fresh blood film from a case of high-grade chlorosis.)

independently have investigated the process in connection with malarial infections. It has been described also by Hayem under the caption "état cribiform," and by Klebs as a "pseudonucleation." The so-called vacuolation of the erythrocytes in the fresh blood film which has been exposed to external influences, furnishes an excellent illustration of this type of cell degeneration excited artificially.

III. Total Necrosis and Disintegration.—A general structural change, with ultimate breaking up of the erythrocyte, represents, in pathologic blood, an extreme grade of degeneration, far more crippling in its effects than the process of simple decoloration. These two changes not infrequently coexist in the same corpuscle, or they may progress independently of each other. Cell necrosis of this type is first betrayed by the development of numerous small, elevated, teat-like processes in the stroma, and sometimes by a corrugation or ridging of the flat surface of the cell. The whole corpuscle then appears to become actively ameboid, and this motility, plus its structural weakening and loss of resiliency, tends sooner or later to convert it into a misshapen body, or poikilocyte. From the periphery of a corpuscle thus affected small bits of the stroma may be seen to extrude, break off, and float away in the plasma. These miniature vesicular masses may or may not be deeply colored, according to the amount of hemoglobin which they contain; as a rule, they show a decided affinity for basic stains, although the erythrocyte from which they are derived may not exhibit this tendency.

Decoloration and general necrosis of the erythrocytes may be studied in the fresh film of both normal and pathologic blood. In normal blood they result purely from prolonged exposure of the cells to the air, the hemoglobin dissociation beginning within from one-half to one hour, and the cell destruction within from three to four hours, after the preparation of the slide. In pathologic blood the changes are regarded as an evidence of an increased toxicity of the plasma, but to this principal factor should also be added another essential cause—the lowered resistance of the erythrocytes in consequence of which they become especially susceptible to injury even by a normal plasma, as well as by exposure to extraneous influences. In disease, therefore, these changes develop with much greater rapidity than in normal blood—in fact, they are often demonstrable

immediately after the blood has been withdrawn from the body. Simple decoloration is regarded as a more favorable sign than total necrosis and fragmentation, and is generally symptomatic of more moderate grades of anemia than those in which the latter changes prevail.

IV. Deformities of Size and Shape.—In all anemic states it is common to find, in association with normal erythrocytes, cells more or less increased or decreased in diameter, as well as others whose shape is variously distorted, often so strikingly that they bear but a slight resemblance to the typical discs of normal blood.

Well defined increase in the size of an erythrocyte, without notable alteration in its contour, stamps it as a megalocyte or macrocyte. The diameter of such a cell usually ranges between 12 and 15 micromillimeters, but in the extreme instance it may equal or exceed 20 micromillimeters. Its stroma generally, but not invariably, is pale, owing to a relative deficiency of hemoglobin, and it shows more or less tendency to react toward a basic dye, in the stained film. There are at least two tangible views regarding the origin of the megalocyte: the first interprets the change as an actual gigantism of the cell, which is bred in the bone marrow from a correspondingly large nucleated antecedent; the second regards it as a hydropic enlargement of the cell, which by imbibition of fluid from the surrounding plasma, swells, loses its distinctive double concavity, and becomes pale, as its hemoglobin is relatively diminished in proportion to the extent of this cellular dropsy.

The microcyte illustrates the decrease in the size of the erythrocyte under pathologic circumstances, the cell thus deformed consisting of a small vesicular body, from three to five micromillimeters in diameter, and, as a rule, having its stroma colored more deeply than normal. Extremely small cells, not more than three micromillimeters in diameter, of high refraction, regularly spheric shape, and very dark color, have been dubbed "Eichhorst's corpuscles." They were once regarded, in the dark ages of hematology, as characteristic of primary pernicious anemia, but are now known to carry no such clinical import. Microcytes may enter the blood stream as such, their dwarfism being directly related to a defect in hemogenesis. In other instances, and these are many, they may be simple products of corpuscular budding and fragmentation, doubtless stimulated by increased plasma toxicity plus a lowered resistance on the part of the cells; in consequence of these factors the erythrocyte extrudes portions of its stroma, which circulate for a time in the blood as miniature cells containing hemoglobin, and tend to assume their ancestors' biconcavity and disc-like contour. In this connection it does not seem unreasonable to presume that the bodies known as Müller's "hemoconien" or "blood dust" may represent this phase of microcytosis.

Any erythrocyte, regardless of its size, is known as a poikilocyte when its shape distinctly deviates from normal. Such cells present an infinite variety of deformities, ranging from those showing merely a slight ovoid tendency to those distorted into the most bizarre figures imaginable. These irregularities have been likened to various objects, such as a gourd, a canoe, an oval disc, a



Deformities of Size and Shape. Illustrating various grades of cell deformity associated with severe anemia. The large nucleated erythrocyte is a typical megaloblast. (Triple-stained specimen from a case of pernicious anemia.)

sausage, a beak, a spindle, and a horseshoe. Minute rod-shaped forms, the so-called "pseudobacilli" of Hayem, are interesting on account of their rapid oscillations in the plasma and their superficial resemblance to large, unstained bacilli. It is probable that poikilocytosis can generally be attributed to an increased toxicity of the plasma whereby the erythrocytes which, it is to be presumed, are abnormally sensitive, readily succumb to its destructive influences and alter structurally. It is also possible that poikilocytes may arise in consequence of a defect in hemogenesis, whereby ill-shaped, as well as normal, erythrocytes enter the circulation from the marrow.

Deformities of size and shape usually are marked in relation to the severity of the anemic process which they reflect. In some cases the changes are moderate, and tend to affect the great majority of the cells; in others, on the contrary, it is apparent that but relatively few corpuscles are affected, but in these the distortion is prone to become most striking. The three varieties of deformity above noted are practically always associated, but in certain cases it is possible to distinguish a prevalence of one or the other type. Thus, in anemias characterized by marked cellular loss, notably in pernicious anemia, a general tendency toward megalocytosis is practically a constant feature of the blood report, while in those in which the poverty in erythrocytes is relatively less decided, as in chlorosis, a general tendency toward microcytosis is the rule. This statement is, of course, very general and subject to exceptions in the individual case. It is a familiar clinical observation that an anemia characterized by oversized erythrocytes is more serious and less amenable to treatment than one in which undersized corpuscles prevail.

V. *Atypical Staining Reaction.*—In the stained specimen the normal erythrocyte invariably shows a strong elective affinity for a single, acid dye, by which it is colored in a characteristic manner. For example, if a solution is used which contains both an acid and a basic dye (*i. e.*, eosin and methylene-blue, or eosin and hematoxylin), the erythrocyte is stained the tint of the acid element, eosin; while with the triacid mixture, which is so formulated that an acid, basic, and neutral principle may be selected by the different histologic elements subjected to its action, the erythrocyte is always stained the color of the acid Orange G. component of the reagent. Thus, under conditions of health the red corpuscle remains consistently *monochromatophilic*, whether the technic of preparing the film involves simple, single, or double, or more elaborate panoptic, staining methods. Under certain pathologic conditions, however, some of the erythrocytes lose their affinity for a single, acid dye, and, with mixtures of both acid and basic dyes, exhibit a definite affinity for the latter, and are therefore said to be *polychromatophilic*. Thus, in eosin and methylene-blue preparations such corpuscles are tinged violet, or purple, or grayish-red, instead of the pure rose color of eosin; while with the triple stain various shades of purple, or reddish-brown, or yellow and pink flecked with deep crimson, replace the rich orange tint of the normally stained cell. Cells thus disfigured are likely to be unevenly stained, and to show contrasting light and dark areas, the latter usually being most conspicuous toward the periphery of the corpuscle, or, if the latter be nucleated, along the perinuclear zone of the stroma. As already pointed out, the areas of pallor in a cell undergoing simple loss of hemoglobin are especially prone to show this basic tendency, but it does not necessarily follow that polychromatophilia is striking in relation to the diminution in the individual cell's hemoglobin content.

It is in the megalocyte and in its marrow antecedent, the megaloblast, that polychromatophilia is most prone to develop and to become most striking; but the change is by no means confined to cells of this variety, since it may also affect, though with much less frequency and usually less conspicuously, the various other types of degenerate erythrocytes.

The exact manner by which polychromatophilia arises is still a mooted point in hematology. Ehrlich, who first described the condition, under the term "anemic degeneration," regards it as an evidence of corpuscular decay, involving a coagulation necrosis of the cell, whereby the discoplasm loses its property of combining with acid, protoplasmic dyes and displays an avidity for basic, nuclear stains. On the contrary, Gabritschewski, Askanazy, Schaumann, and others believe that the change betrays, not old age, but youth of the cells, whose development has been suddenly aborted at a point short of their full, normal maturity. Dissection of these opposing views and their attempted reconciliation is hardly germane to this discussion, interesting as these different opinions may be as pathologic problems. It is important, then, simply to bear in mind the facts that no normal erythrocyte ever shows polychromatophilia, and that cells which exhibit this alteration are functionally imperfect, owing either to a simple deficiency in their hemoglobin content, to morbid structural changes readily detected under the microscope, or, perhaps, to subtler inherent defects attributable to faults of development. Thus, the polychromatophilic cell may be quite normal save for its hemoglobin poverty; it may be old, deformed, and necrotic; and it may be so young that its nucleus still persists. In any event, the fact remains that every cell in a stained specimen prepared with perfect technic, which shows this deviation from the normal reaction to the anilin dyes, must be considered degenerate, in so far as this term implies crippled function.

Polychromatophilia may be encountered in any of the high-grade anemias, regardless of their type, but in pernicious anemia and in leukemia this change constitutes a feature of the blood report which is to be regarded as almost constant. In chlorosis, notwithstanding the unusual hemoglobin poverty which is rather characteristic of this disease, I have seldom noted atypical staining of the erythrocytes, unless the cellular decrease was also extreme. In general terms it may be stated that polychromatophilia is a sign of extreme blood impoverishment, but by its presence alone no prediction is warranted as to the ultimate outcome of the anemia of which it is symptomatic.

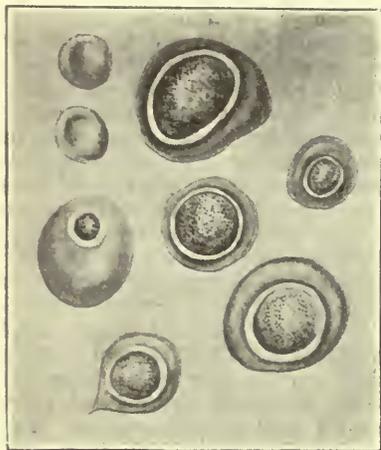
VI. *Megaloblastic Forms.*—The detection of nucleated erythrocytes conforming to the megaloblastic type constitutes one of the most valuable and distinctive clues afforded by hematology. In health cells of this class are absolutely foreign to the blood stream, as well as to the bone marrow, in postuterine life, and hence their presence in the stained film is conclusive proof of a severe, though not necessarily a fatal, anemia.

The megaloblast, it will be remembered, is the immediate antecedent of the megalocyte, into which it is evolved by the absorption of its nucleus (Pappenheim and Israel; Neumann and Kölliker). It is a natural inference, therefore, to presume that these two forms of cells are associated, and, clinically, this is generally found to be the case; at least, it is true that megaloblasts never exist without megalocytes, although the latter may be found alone, in case they owe their origin to simple dropsical swelling rather than to nuclear loss. Megaloblasts are found in the circulating blood only in conditions involving more or less reversion of the bone marrow to the fetal type, owing to which this tissue manufactures not only large numbers of defective giant megalocytes, but also throws into the blood stream some of their nucleated precursors of embryonal type. The presence of megaloblasts must be regarded as a sign of striking degeneration of the hematopoietic organs, involving imperfect hemogenesis of embryonal character, and hence the significance of this variety of erythroblasts is diametrically opposed to that of the normoblasts. The latter, though associated with severe anemic states, are the expression of an active and overstimulated, but normal, adult type of blood manufacture,

and reflect a regenerative, conservative process; they invade the blood stream when the marrow, in consequence of demands made upon it for new erythrocytes to replace those destroyed by an anemic state, furnishes not only a quota of normal cells, but also allows the escape of an occasional immature nucleated form, or normoblast. It cannot be too forcibly emphasized that

the megaloblast and the normoblast each represents a radically different type of corpuscle, the origin and clinical significance of which are entirely dissimilar.

The typical megaloblast is an unusually large round or ovoid cell, measuring from about 10 to 20 micromillimeters in diameter, and provided with a relatively large-sized nucleus, which is, as a rule, situated toward the



Megaloblastic Forms. Common types of megaloblasts, showing variations in size and shape, and peculiarities of the nuclear structure. (Triple-stained specimen from a case of pernicious anemia.)

periphery of the cell body. The stroma of the megaloblast frequently appears swollen, enlarged, and marked here and there by depressed and elevated areas and perhaps by distinct flaws and cracks which fail to take the stain; generally, it has a more or less regular contour, although it may be conspicuously deformed and distorted; and it is commonly polychromatophilic, exhibiting combinations of color in endless variety. With the triple stain the body of the cell is usually tinted a dull tan color, with deeper shadings of burnt-sienna about the nucleus and near the periphery; or a diffuse crimson tinge may predominate, as if the stain contained an excess of fuchsin. Other cells are likely to be streaked and blotched with yellow and deep brown patches, and still others stain a diffuse purple, often blending into a light pink tone in certain areas. The nucleus, which occupies the greater part of the cell body, is composed of such a delicate and scanty chromatin network that it shows but a slight affinity for basic dyes, in consequence of which it stains pale sea-green or greenish-blue with the triple mixture. This prevailing green tint is frequently stippled with delicate dots of vivid crimson or deep purple, which produce a pseudogranular effect by their contrast with the lighter undertone. In some cells the nuclear structure is coarsely mottled here and there by irregular areas of deep blue or purple. Many other equally striking tinctorial reactions to the anilin dyes are also to be found in other nuclei of this type. The nucleus of the megaloblast is generally differentiated sharply from the cell body by a distinct hyaline, unstained margin, which encircles it and is thrown into bold relief by the nuclear and stroma stain on either side.

Megaloblasts occur in the circulating blood only in the severer types of anemia which are characterized by hemogenesis approximating with greater or less fidelity that of the fetus. An occasional megaloblast may be encountered in various chronic anemias of striking intensity, but in such conditions they are invariably outnumbered by the normoblasts with which they are associated. But in only three conditions, namely, pernicious anemia, infection from *Bothriocephalus latus*, and nitrobenzol poisoning, have megaloblasts been found to be the predominating form of erythroblast. In 37 consecutive cases of pernicious anemia I have found, by

differential counts of the erythrocytes, that the megaloblasts outnumbered the normoblasts in all but five. The average proportion of the former to the latter was somewhat more than two to one, and in seven cases only megaloblasts occurred. In contrast to this I may cite the blood findings in 26 cases of leukemia (15 of the splenomedullary, and 11 of the lymphatic type, respectively). In this disease the megaloblasts invariably were outnumbered by the normoblasts, which in six of the cases were the only type of nucleated erythrocyte detected, and the proportion of normoblasts to megaloblasts in these 26 cases averaged about four to one. Comparing the numerical estimates of both types of erythroblasts in these two forms of primary anemia, it was determined that the average estimate in pernicious anemia was 220, the highest 924, and the lowest 3, cells per cubic millimeter of blood; while in leukemia the average was 5,800, the highest 12,913, and the lowest 748, to the cubic millimeter. These figures illustrate the striking abundance of erythroblasts in leukemia, and also show that in this disease the compensatory hemogenesis does not counterfeit the embryonal type so closely as it does in pernicious anemia. From a rather close study of the question, I am convinced that megaloblasts are the prevailing form of nucleated red cells in every genuine case of pernicious anemia during its active stages. In the exceptional case their absence may be explained by the examiner's carelessness, or perhaps by the fact that the marrow has become so wrecked by the specific toxins of the disease that it is no longer capable of turning out even these makeshifts of corpuscles. It is also true that during the periods of remission, the megaloblastic phase of the blood picture, as well as its other characteristics, temporarily disappears. The presence of megaloblasts in leukemia betrays the existence of fetal marrow changes, and their association here with such an amazing profusion of normoblasts indicates, furthermore, that active blood regeneration accompanies this degenerative lesion.

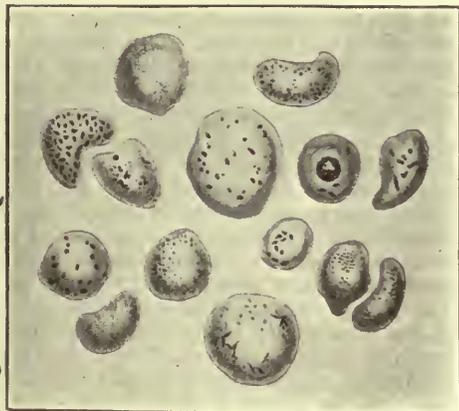
The megaloblastic blood picture of bothriocephalus anemia, described by Askanazy, may be explained by assuming that in this infection certain unknown poisons, elaborated by the parasite, are absorbed by the human host, in whom they provoke fetal marrow changes. After expulsion of the worm the megaloblasts rapidly disappear from the blood, and are replaced by normoblasts, which in turn disappear, as the patient's blood becomes normal and health is restored. In nitrobenzol poisoning Ehrlich and Lindenthal have observed a similar predominance of megaloblasts, and in this condition it is also to be assumed that a similar degeneration of the marrow must have been excited by the intoxication.

VII. *Granular Basophilia.*—In many of the anemias the film stained with methylene-blue, thionin, or hematoxylin, shows a peculiar basic granular condition of the stroma of some of the erythrocytes, to which the terms granular basophilia and granular, punctate, or basic degeneration are applicable. In the specimen stained, for example, with eosin and methylene-blue these granules appear as a fine or coarse blue stippling, or, rarely, as blue linear markings, or as a combination of these three phases. These basic areas are either distributed quite uniformly through the stroma or are grouped in a more or less compact mass toward the margin of the cell body, against the rose tint of which their intense blue color shows conspicuously. Normally shaped, distorted, nucleated, and nonnucleated corpuscles may be in this manner basically stippled, and it is not uncommon to find that such cells also bear evidences of polychromatophilia.

The exact nature of these granules has provoked a great diversity of opinion among different investigators, whose differences may be narrowed down to these two prevailing views: first, that they are the product of nuclear fragmentation; and, second, that they represent a true stroma degeneration. Among those who urge the

acceptance of the first view may be mentioned the names of Askanazy, Litten, Lazarus, and Engel; while Grawitz, Hamel, Moritz, and Stengel are among those who have advanced clear arguments that the process is essentially protoplasmic. In order to get at the truth of this debated topic, it is necessary to refer briefly to the chief phases of these opposed theories and to the facts by which they are substantiated.

First, to inquire if the granules are nuclear debris or products of fragmentation, occurring as the result of a nuclear absorption by which the erythroblast ultimately becomes a nonnucleated erythrocyte or normocyte. To



Granular Basophilia. Erythrocytes showing various degrees of basophilia, with fine, coarse, spherical, ovoid, and spiculate granules. Note the basophilic normoblast. (Eosinate of methylene-blue specimen from a case of lead poisoning.)

support this belief, it is reasonable to presume that some of the cells should exhibit changes which may be interpreted as transitional stages between the typical erythroblast and the nonnucleated granular erythrocyte. But, from the evidence thus far presented, it cannot be said that such forms have been conclusively demonstrated, although both Litten and Ewing appear convinced that they exist. The former has minutely described them, both in the circulating blood and in the bone marrow of a single case of pernicious anemia; while the latter states that in this same disease he has observed the transitional stages and fine subdivision of megaloblastic nuclei. These, however, are isolated annotations, and lack corroboration by the many other investigators who have studied the question. Personally, it has never been my good fortune to discover such intermediate forms of cells, although both in pernicious anemia and leukemia, in which erythroblasts and granular erythrocytes commonly coexist, I have tried to distinguish the progressive pallor and fragmentation of the nucleus with coincident multiplication of the granules, such as Litten describes, and thus to become convinced of the truth of this tempting hypothesis. Askanazy, Simon, Stengel, White, and Pepper have offered most positive evidence against the nuclear origin of the granules by demonstrating in granular erythroblasts signs of active karyomitosis—a finding that seems conclusive, since it is hard to believe that a nucleus can simultaneously divide, by mitosis, and fragment, by rhexis. The last three investigators also found precisely similar types of nucleated and granular cells in the bone marrow and blood, whereas, according to the theory of nuclear fragmentation, the marrow naturally should contain numerous examples of transitional forms, for in this tissue the transition of erythroblasts to erythrocytes occurs normally. In lead poisoning, pernicious anemia, and lymphatic leukemia Cabot has observed granule cells in association with other erythrocytes containing curious ring-shaped bodies, obviously relics of megaloblastic nuclei; but apparently these two types of cell defects were independent.

The fact that these granules are not stained by

methyl-green is also of some importance, for this nuclear dye is the very element of the triacid stain which picks out the nuclear structure of the erythroblasts, and should also color the granules, did they really represent nuclear remains.

Although not found in the blood of the human embryo, granular basophilia of the erythroblasts has been noted in the blood of embryonic mice (Engel, Pappenheim) and cats (Schmauch), as well as in the erythrocytes of fullgrown rabbits (Ehrlich), guinea pigs (Löwenthal), and squirrels (Simon). The occurrence of basophilia in the embryos of some of the lower animals has been exploited as a proof that the granules are of nuclear origin, but this deduction is by no means warranted from the evidence at hand.

To support the second view, that granular basophilia betrays a form of stroma degeneration, presumably specific, it is necessary only to refer to the clinical and experimental work of Grawitz and his assistant, Hamel, and to the careful investigations recently completed by Stengel and his associates. Four years ago Grawitz declared that basophilia of the erythrocytes was a specific degenerative change, and that the exciting cause was possibly some form of blood poison which acted deleteriously on the circulating cells. His chief conclusions may be briefly summarized as follow: (a) Granular basophilia may be demonstrated in peripheral blood which shows absolutely no other signs of degeneration. (b) Transitional stages between typical erythroblasts and granular erythrocytes exist neither in the circulating blood nor in the bone marrow. (c) Erythroblasts with typically intact nuclei may show striking basophilia of the cell body. (d) Experimentally, granular basophilia of the circulating erythrocytes can be promptly excited in animals by the administration of various toxic substances, as well as by subjecting them continuously to high degrees of heat. After the animal's recovery from either of these harmful influences, the granules disappear from the blood.

Stengel and his pupils have, step by step, confirmed on the whole these data, and, in addition, have recorded the very important observation already referred to, namely, that basophilic granules are not incompatible with nuclear mitosis in the very cells whose stroma they occupy. These workers also lay stress upon the absence of transitional forms of cells in leukemic blood, in which erythroblasts showing various signs of nuclear degeneration (such as atrophy, pyknosis, karyolysis, and karyorrhexis) are not uncommonly demonstrable. They were, however, unable to determine the exact seat of origin of the degeneration, whether it resided in the peripheral blood, in the portal circulation, or in the bone marrow.

Whatever be its mode of production, the fact remains that granular basophilia of the erythrocytes is a change never found in the blood of the normal individual. It is rational to regard it as a stigma of cellular degeneration, and its detection is sufficient grounds for directing the clinical inquiry toward a search for an adequate underlying factor of some anemic condition. For convenience's sake, granular basophilia may be discussed under two headings: experimental and clinical.

Experimental basophilia, as Hamel first proved, can be excited in animals by the administration of small doses of lead acetate, either by the mouth or by subcutaneous and intraperitoneal injection. The minimum amount of the metal requisite to cause this change has been found to be .03 gram, although most experimenters have employed larger amounts, ranging as high as 1 gram. Later experiments, notably those by Moritz, Behrendt, Bourret, and Stengel, have fully confirmed the truth of this observation. It appears that under the effect of lead the erythrocytes become faintly basic within so short a period as 24 hours after the initial dose, and that the granules become strikingly developed by the end of three days, if the dosage is continued

(White and Pepper). When this treatment is discontinued the granules disappear after the lapse of a variable length of time, which varies according to the amount of the lead salt administered, the gravity of the toxemia, and the susceptibility of the animal.

Grawitz succeeded in producing granular basophilia in white mice kept exposed continuously to a temperature ranging between 37° C. and 43° C., the change first becoming evident after eight days, and, as the animals later became accustomed to their new environment, quite disappearing in course of time. In these experiments it was observed that the development of the basophilia was associated with a distinct dilution of the blood, and with an obvious decline in the animal's health, and that as the granules disappeared, the blood again became normal and the animals apparently thrived, some of them remaining alive and well for months, in spite of their confinement and exposure to excessive heat. The results of these experiments have a certain clinical bearing, in that they tend to show that possibly some of the tropical anemias may be due, at least in part, simply to the effects of sustained high temperature, which in the newcomer to the tropics is prone first to excite an anemia, which later may disappear, as the individual becomes better adapted to the new surroundings and mode of life.

Grawitz has also succeeded in exciting at will distinct granular basophilia by the administration of various proprietary preparations of hemoglobin devised as substitutes for the different iron preparations in the treatment of anemia. The exhibition of such drugs in ordinary dosage was promptly followed by a basophilia, which was aggravated by increasing the dose, and which soon disappeared after the medicament was discontinued. These results were observed both in anemic and in healthy individuals, but the basophilia developed much more rapidly and more strikingly in the former. From these observations, it appears that the presence of blood in the gastrointestinal canal is attended by the elaboration of certain unknown toxic substances, possibly evolved by the action of the intestinal bacteria of decomposition upon the hemoglobin preparation ingested, and that the absorption of these noxious principles acts deleteriously on the blood cells of the individual. This action Grawitz terms "plasmotropic," or one whereby the poisons in some manner influence the bone marrow, the liver, and the spleen so that they provoke increased destruction of the erythrocytes. In direct contrast to this form of blood destruction stands the process known as a "plasmolytic" action, or one by which the cells are destroyed in the blood stream, with the consequent super-vention of hemoglobinemia.

Among the noxious substances by the administration of which it is possible to excite granular basophilia are tin chlorid (Löwenthal), copper (Sabrazes, Léger, Bourret), pyrocin, atropin (Strauss), methylene-blue and tolylendiamin (Bloch), and phenylhydrazin (Kaminer and Rohnstein).

Clinically, granular basophilia is encountered in a variety of anemic conditions, chief among which are lead poisoning, pernicious anemia, leukemia, malarial fever, intestinal helminthiasis, sepsis, and malignant disease. In addition to these conditions, many of the secondary anemias, resulting from other factors, also are associated with this change.

Lead poisoning, be it symptomless or frankly developed, is the one condition in which granular basophilia is constantly found. In fact, it is possible to demonstrate this sign in lead workers and painters who show absolutely no other manifestations, either subjective or objective, of saturnism. In such cases the erythrocytes are studded with these granules long before other blood changes supervene, and before the patient's gums become discolored, his wrists powerless, his bowels constipated, and his headache and abdominal colic annoying. Moritz first demonstrated this fact in a series of six cases, and

later Hamel obtained similar results in 25. White and Pepper examined 21 lead workers, none of whom had symptoms, and found the granules in every case, about one-half of which also showed moderate corpuscular anomalies, chiefly defects of size and shape, and a few, atypical staining and normoblastic nucleation of the cells. Simon found granules in 20 lead workers, but two of whom had active symptoms.

The fact that pallor, without decrease in the number of erythrocytes and loss of hemoglobin, is a familiar objective symptom in many lead workers, formerly was regarded as a proof that this class of artisans was only apparently anemic, the source of the deception being referred to a general vasomotor constriction thought to be due to the effect of the metal. The presence of basophilia in such instances, however, dissipates this error, for it shows that, although perhaps there is no notable deficiency in the number of erythrocytes and their hemoglobin content, the cells are, in reality, distinctly degenerate. As the systemic effects of the lead toxemia disappear under treatment, the granules also disappear, usually in from four to six weeks after proper elimination has been instituted. While the presence of granular basophilia can in no sense be interpreted as a conclusive sign of plumbism, it is of symptomatic value in doubtful cases. As a negative piece of evidence, too, it is of utility, for the absence of basophilia in an individual whose symptoms suggest saturnism is a fairly reliable indication that this intoxication is counterfeited by some other lesion, such, for example, as a gastric neurosis or an appendiceal colic.

In *pernicious anemia* basophilia of the erythrocytes is practically a constant blood change in every well defined case. It has been uniformly present in the last six consecutive cases of Biermer's disease which I have had occasion to examine with this purpose in view. But, although this disease illustrates primary anemia in its most intense form, it cannot be said that the abundance of the granules corresponds definitely to the degree of the blood impoverishment; it can, however, be positively asserted that they become less numerous, and may even disappear, during the periods of temporary improvement in the blood and in the patient's general health, only to reappear as the inevitable relapses occur. Under these circumstances the behavior of the granules corresponds to that of the nucleated, deformed, and atypically colored erythrocytes, and, with them, it constitutes a rational means of determining the progress of the disease.

In both forms of *leukemia* the granules are also found with great constancy, but they do not seem to be so numerous as one would be led to expect, judging from the other striking blood changes which accompany this type of anemia. From a limited number of cases at my disposal, I have been unable to determine whether or not any relation exists in leukemia between the abundance of the granules, the height of the leukocyte count, and the behavior, quantitatively and qualitatively, of the erythrocytes. In the late, anemic stage of *Hodgkin's disease* the granules appear in the majority of instances, but they are not to be detected early during its course, when the blood shows little or no deviation from normal.

The *malarial fevers* involve erythrocytic basophilia in the great majority of cases, especially in those in which the cachexia is marked and the anemia of high grade. In our service at the Jefferson Hospital, where many cases of tertian fever and an occasional estivoautumnal infection are treated, we have come to consider basic granulation almost as familiar a blood finding as the presence of the parasites themselves.

Corpuscles containing small parasites may also show the granules, and the latter may be found in the uninfected erythrocytes. Plehn, who was the first to call attention to the presence of these granules in malarial fever, assumed that they resulted from the disintegration

of the corpuscles by the parasites, but in addition to this direct action of the latter upon their cellular hosts, the change must also develop in consequence of the deleterious effects of the circulating malarial toxins.

Certain *intestinal parasites* are capable of causing not only profound diminution in the number and hemoglobin value of the erythrocytes, but also striking defects in their stroma. Both Schaumann and Jawein have described these combined changes in the severe anemia secondary to *Bothriocephalus latus* infection, while Grawitz's studies tend to show that basophilic granules are a prominent feature of the blood picture in the anemia of ankylostomiasis or uncinariasis. Their occurrence in this form of helminthiasis he attributes to an auto-intoxication due to the absorption of a toxic substance developing within the patient's intestine in the blood there collected by the constant capillary oozing provoked by the hookworm. In this instance another illustration of a so-called plasmotropic action of an absorbed toxin is also afforded. According to this theory (which as yet lacks substantiation) the toxic material presumably elaborated by the parasite appears to be of distinctly secondary importance as a factor of the blood changes in this infection.

In *septic conditions*, whatever their origin, the erythrocytes are prone to show basophilia, but with great inconstancy, according to the reports at present available. It is possible that this change develops in direct relation to the deleterious effect, in the individual case, of the septic poisons which are known to produce in grave infections the rapid onset of an anemia of the most intense degree, as well as a marked leukocytosis. Similarly, in *carcinoma* the presence of basophilia is thought to depend upon the toxic effect of the products absorbed from the growth. In this disease it appears that the change occurs only in those cases in which the neoplasm is situated so as to allow free absorption—for example, granular basophilia has been found in gastric and intestinal growths, but not in uterine cancer, even in advanced stages. But in cancer of the stomach and intestines, if they are associated with hemorrhage, another determining factor is naturally suggested, namely, the effect upon the circulating erythrocytes of the noxious substances absorbed at the seat of the bleeding. In this connection it may also be noted that the ingestion of blood, as in the case of tuberculosis with pulmonary hemorrhage, may account for the presence of basophilic erythrocytes; and that liver cirrhosis, peptic ulcer, and other lesions associated with hemorrhage into the gastrointestinal tract, must also be regarded as factors of this pathologic finding.

In *chlorosis*, granular basophilia is extremely inconstant, and the determining factor of the change in this disease remains obscure. Judging from my rather limited acquaintance with this phase of basophilia, I must agree with the general opinion that the erythrocytes in chlorosis but rarely show this degeneration, in spite of their striking hemoglobin deficiency, as well as of the structural alterations which they sometimes exhibit. Stengel, on the contrary, found that the granule cells were abundant in 11 of the 18 chlorotics whom he examined, although only in a single instance were the granules themselves numerous; in all of the 11, polychromatophilia was also demonstrable, but it stood in no definite parallelism to the degree of coexisting basophilia. May it not be that the latter, when it does develop in chlorosis, may be traced to the effects of intestinal auto-intoxication?

Tuberculosis does not appear to produce basophilia but if a septic infection be engrafted upon a tuberculous process, the change is prone to supervene. Among the many conditions in which basophilia does not tend to occur are diabetes mellitus, syphilis, influenza, and measles.

In conclusion, an analysis of the foregoing remarks, stripped for clinical application, appears to justify these deductions:

1. The viscosity of the erythrocytes is influenced by cellular and plasma alterations, the nature of which is obscure. The viscosity is exaggerated by the direct influence of various toxic agencies, and is diminished in many anemic states. This phase of cellular pathology is interesting from an experimental point of view, rather than as a finding of clinical application.

2. Simple decoloration illustrates the earliest retrograde change affecting the erythrocytes, and its intensity generally corresponds to the severity of the anemic process by which it is excited. The change may exist alone, as in the milder forms of anemia, or it may be combined with graver necrotic degeneration of the cells, in anemias of greater severity.

3. Deformities of shape and size are common to all pathologic blood, the degree to which such changes develop being related to the intensity of the blood impoverishment. Megalocytosis is a more serious sign than microcytosis.

4. Atypical staining of the erythrocytes betrays an impairment of function, and, as a rule, is found most commonly in corpuscles whose hemoglobin content is subnormal. It is most striking in anemias of the primary type.

5. The prevalence of megaloblasts indicate a fetal reversion of the bone marrow, and stamps the blood changes as pernicious, except in the anemias symptomatic of *Bothriocephalus latus* infection and of nitrobenzol poisoning. The presence of megaloblasts indicate a severe anemia, but not necessarily one of fatal outcome.

6. Granular basophilia, whatever may be its exact origin, should be interpreted as a sign of degeneration. It is a constant blood finding in but a single condition—lead poisoning—but is associated with many diseases involving a variable degree of blood deterioration. The experimental basophilia excited by the administration of preparations of hemoglobin warrants a doubt as to the wisdom of using such medicaments as substitutes for iron in the treatment of anemia.

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Condition of Adult Blind.—A bill has been introduced into the Pennsylvania Legislature which authorizes the appointment of a commission of three persons by the Governor to investigate into the condition of the adult blind, and to consider the question of establishing State industrial training schools or other institutions for them.

AN OPERATION FOR CICATRICIAL CONTRACTURES OF THE UPPER EXTREMITIES.

BY

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It would be a tiresome task for one to review all the numerous operations that have been performed for the purpose of curing cicatricial contractures, so I will proceed at once to the description of my case:

CASE.—L. W., a male, aged 7.

History.—As the patient is an orphan it is impossible to obtain a very complete history. A friend states that when the patient was 4 years old, while pouring oil on the fire he sustained a severe burn of the right arm. This was followed by

about beneath the skin. The arm was practically useless. There was slight motion at the elbow, but none in the wrist. The patient was unable to feed himself or even touch his face except with the back of his wrist. If he tried to raise any weight it caused severe pain in the wrist.

I began treatment of the patient feeling that the arm was of no use in its present condition and hoping that something might be done to place him in a condition to earn a livelihood.

Treatment.—First operation was performed February 8, 1902. A band of the cicatricial tissue 10 cm. wide surrounding the elbow was dissected away, leaving a small strip of fairly normal skin 2 cm. wide along the inner surface of the arm. This permitted the arm to be placed in nearly complete extension—complete extension, however, being prevented by the contracted biceps muscle. It was thought advisable not to interfere with this muscle, as the slight flexion would be of little hindrance to him in performing his work in after years. I then raised from the side of the chest a flap of skin 12 cm. broad by 20 cm. long, the ends of this flap being left intact to keep up the circulation. The skin on either side of the chest from which the flap had been raised was dissected up and by means of tension sutures brought together as much as possible, thus closing about one-half of the

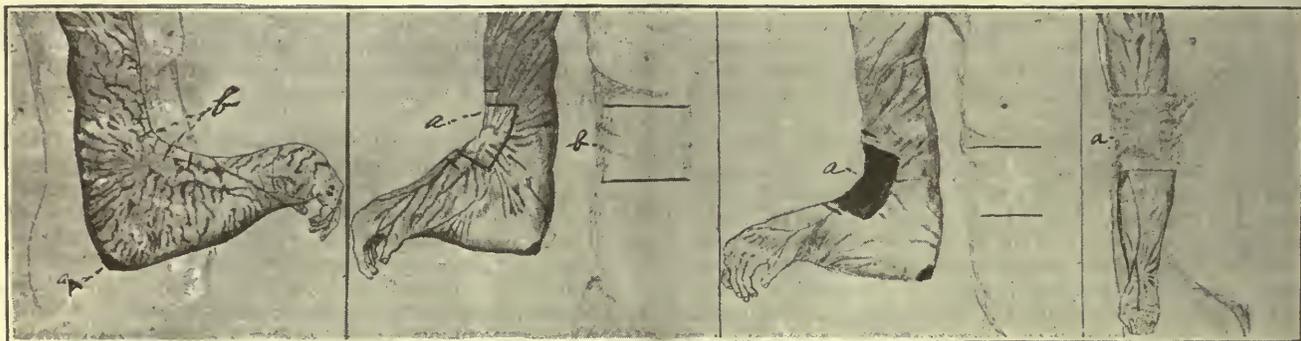


Fig. 1.—(1) a, ulcerated surface; b, scars of previous operation. (2) a, area to be denuded; b, flap to be raised. (3) a, area denuded. (4) a, arm beneath skin of chest.

drawing up of the arm. Nothing is known of the treatment carried out at the time of the injury. In October, 1900, he was operated upon by another surgeon. This operation consisted in making transverse incisions .5 cm. apart through the cicatrix involving the elbow, and the application of an anterior straight splint. No attempt was made to straighten the wrist. The splint was worn about 10 weeks, but after its removal the arm became flexed again to practically the same position as before the operation. The patient came under my care at the Child's Hospital in February, 1902.

Examination.—Patient was poorly nourished, very anemic and exceedingly nervous. The elbow was flexed to an angle

gap. The arm was then drawn through beneath this flap, thus covering the surface on the arm from which the cicatrix had been dissected away. A strip of gauze was drawn through beneath the arm to prevent its growing fast to the chest. Dressings were applied and arm and chest put up in plaster-of-paris. Operation was followed with but slight fever and patient complained of but little pain. Dressings were left undisturbed for 18 days, at which time the flap had become firmly adherent to the arm.

The second operation was performed February 26, 1902. The ends of the flap were severed from chest, brought about the arm, and sutured in place, thus completely covering the denuded area on the arm. In bringing the flap about the arm we found we had a small piece of skin in excess of that required, so this was utilized as skin grafts on the chest. Sterile dressings were applied.

The third operation was performed May 1, 1902. A band of cicatricial tissue 7 cm. wide surrounding the wrist was dissected away, leaving a strip 2 cm. wide over the extensor surface. The tendons of the flexor carpi ulnaris and radialis were so tense that it was necessary to lengthen them 2 cm. Even now, after removal of cicatrix and lengthening of the tendons, the wrist cannot be fully straightened owing to the deformed condition of the carpal bones. A flap of skin 10 cm. wide was raised from the right thigh and the hand

slipped beneath. This flap was sutured to the wrist. Sterile dressings and plaster-of-paris were applied. This dressing was left on for 14 days.

The fourth operation was now performed. The flap was severed from the thigh and brought about the wrist in the same manner as at the elbow. Skin grafts were removed from the opposite thigh and applied to the surface from which the flap had been taken.

On June 11, 1902, the patient went to the Orphan Asylum. The elbow, wrist, and chest were healed. There was still a

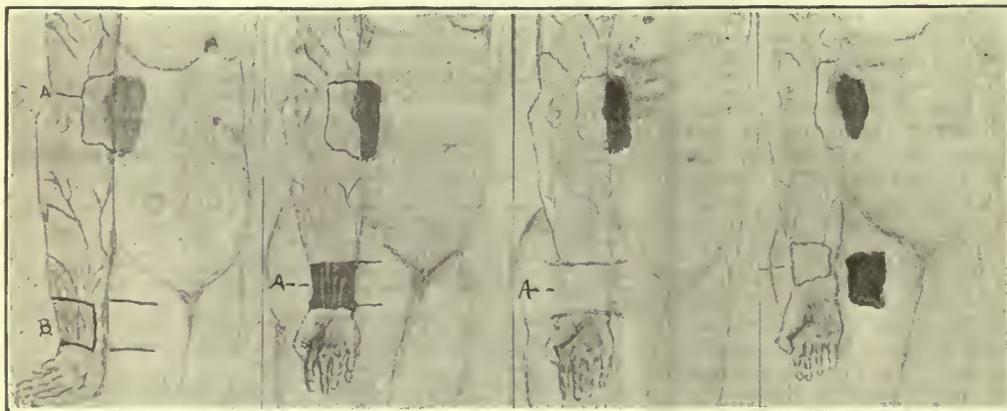


Fig. 2.—(1) A, flap separated from chest and sutured to arm; B, arm to be denuded. (2) A, cicatrix dissected away. (3) A, arm beneath skin of hip. (4) arm free from hip.

of 70°, the wrist to a right angle. A cicatrix extended from the shoulder to the metacarpophalangeal articulation. The entire circumference of the arm was involved, except a strip 2 cm. wide along its inner surface. The cicatrices at elbow and wrist were firmly contracted. Through the cicatrix at the elbow were seen the transverse cicatrices of the previous operation. There was an ulcer 1 cm. in diameter over the olecranon that had been there for over a year. Owing to the overflexion of the wrist, caused by the cicatricial contracture, the scaphoid and semilunar bones were dislocated and could be moved freely

slight area on the thigh unhealed. The elbow was practically straight, but the wrist was still slightly flexed.

Several times during the summer I have applied plaster-of-paris dressings to the wrist, holding it in as extended a position as possible until the plaster hardened, hoping thereby to get the carpal bones to return to their normal position. Each time there has been an improvement, so that now the wrist is

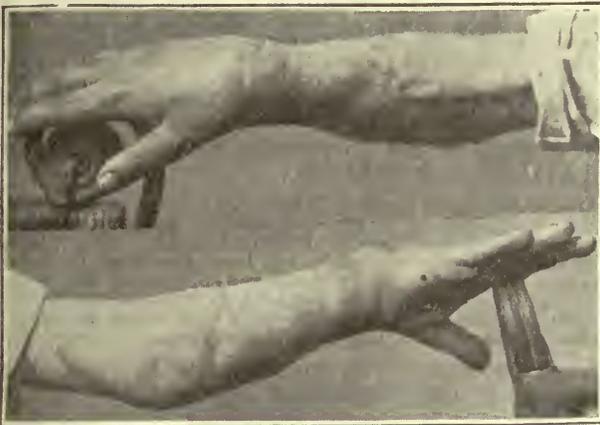


Before operation.

straight, as can be seen by the photograph, but complete extension is impossible.

In the beginning the arm and wrist were drawn in complete flexion and were useless to the patient. He would doubtless never have been able to have sustained himself. Now, although the arm is not as shapely as the other, yet it is nearly straight and is very useful. He is able to play games, can feed himself, and is learning to write. He can raise ten pounds weight with this hand and will be able to earn a living.

This manner of treating cicatricial contractures of the elbow and wrist may have been previously carried



After operation.

out, but I am unable to find any similar case described in literature. The only case in any way like this that I can find described is that of Schoeder's in the *American Journal of Medical Sciences*, October, 1900. (This article had not been seen by me until after completion of my case.) He raised a flap of skin from the thigh to cover the palm of the hand. In this article he states that in order that the flap may retain its vitality there must be no tension on it. In my case tension was of necessity put on the flaps by the passage of the arm beneath them, but it did not interfere in the least with their vitality.

GLYCEROL OF IODIN.

An Old-new Remedy for Tuberculosis, Chronic Bronchitis, Chronic Pleurisy, Goiter, Etc.

BY

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of Milwaukee, Wis.

The modern tendency is too much toward new remedies, instead of improving older and better known ones. The object of this article is not to announce a newly-discovered remedy for the diseases mentioned, but to suggest experiments on suitable subjects with an old one in a new form. My observation during a practice of 40 years has convinced me that we have not in the entire range of the *materia medica* a more valuable therapeutic agent in strumous affections than iodine, provided we can bring it in conjunction with the diseased tissues in an assimilable form. In fact, therein lies the whole secret of its curative powers.

We are well aware of the destructive influence of iodine upon microorganisms of all kinds, from the most harmless bacteria to the most virulent anthrax, when added to cultures in a soluble form, and hence in that of infinitesimal division. But we also know that the extreme drawback to its general use has always been the apparent impossibility of administering it therapeutically in this form. But this difficulty I believe has been overcome by using it in the form of a glycerol, and I will give my reasons for my faith. Dissolve an ounce of iodine in a pint of alcohol, and you have the official tincture of iodine, a preparation which, at first blush, would seem to answer all the demands of a perfect solution and infinitesimal subdivision of substance. Yet we all know what an unsatisfactory substance tincture of iodine is for general therapeutic application.

The true reason of this is that an alcoholic solution of iodine is not a permanent one. The alcohol being much more volatile than the iodine is prone to part company with it on the very first opportunity, and deposit it in a metallic form, in which it is not oxidized and assimilated by the tissues. The same is true when tincture of iodine is painted on the surface. Quantities of it that would be absolutely poisonous if absorbed may be painted on the skin, in the region of glands, with perfect impunity, because the alcohol is speedily evaporated, and the metallic iodine is left on the skin, the only therapeutic effect secured being that of a counter-irritant.

But now let us combine that wonderful but indifferently appreciated substance, glycerin, with it and see what we will get. The alcohol goes where good alcohol is prone to go—off into the air—but glycerin, less volatile than the iodine itself, and a perfect solvent, remains, holding the iodine in such minute division as to render its particles absorbable, and they are absorbed by the venous and arterial radicals of the skin along with the glycerin, and in this way reach and enter into the tissues. We soon find that we cannot use the glycerol iodine *ad lib.* as we would the tincture; for although we can with perfect impunity introduce immense quantities of iodine into the system in this way, as compared with the small doses, 5 mg. to 16 mg. ($\frac{1}{12}$ to $\frac{1}{4}$ grain) that we can introduce hypodermically or per mouth, we will speedily induce symptoms of iodism if we push the remedy. My own method of administration is to apply from 4 cc. to 8 cc. (1 to 2 drams) of the glycerol iodine over the chest, in a streak along the sternum two or three inches wide, from the junction of the clavicles to the lower end of the sternum (in chronic bronchitis) or over the entire side, from the spine to the sternum (in old chronic thickened pleuras); and to repeat the application night and morning until symptoms of iodism appear, usually two or three days, then to omit a day, and resume with about the same dose once daily. It is not necessary to push it to complete

iodism, but stop as soon as buzzing and ringing in the ears and other nervous symptoms are complained of. In tuberculosis, with which my personal experience has been quite limited, I would make the applications over the seat of the dulness or localized tubercles. In goiter and enlarged glands, to which this method of administration is far preferable to hypodermic administration, I would apply it freely all over the gland.

A peculiarity of the glycerol iodine is that its application leaves no stain on the skin, like tincture of iodine, while it produces only a slight local irritation, which is due to the fact that the bulk of the metal is absorbed instead of being deposited on the surface.

My object is to call the attention of physicians who are conducting investigations along this line to this remedy, and thus reach those in a position to experiment clinically, as my own material is limited, owing to the fact that my practice is in a different line, and my opportunities for studying the effects of glycerol iodine limited; so far, however, as I have had a chance to test the theory I have obtained some really astonishing results, especially in two cases—one a case of adenitis and the other of chronic pleurisy, both patients had thickened membranes of 20 years' standing. I have also had very promising results in two cases of chronic bronchitis, three cases of goiter, two cases of enlarged cervical ganglions, and one very obstinate case, in a negro, of enlarged glands in the armpit.

As to the effects of glycerol iodine upon the digestive organs, especially in cases of catarrh of the stomach and fermentive dyspepsia, I can vouch for their being most excellent. Digestion and assimilation in all my patients showed marked improvement, patients being able to eat with impunity foods that they dared not touch before, unless they supplemented the meal with artificial digestives. Some, in the habit of using digestive tablets after each meal for years, were able to dispense with them entirely. In fact, I may add digestion and general nutrition are invariably improved by glycerol iodine. I do not remember a single case in which this was not noticed.

Mercury in some form seems to be the best synergist of the iodine treatment, especially in diseases of the liver, and those in which syphilitic complication is suspected. I give .022 gram ($\frac{1}{2}$ grain) mercury in the form of Moses Kidder's "Pearls" every night at bedtime for three days, then omit three days, to avoid the cumulative effects of mercuric iodide. As an eliminant, nothing is better than plain Epsom salts, one-half to one teaspoonful taken in the mouth dry and washed down with a few swallows of water. Quinine does not seem to be synergistic. In fact, malarial patients accustomed to using quinine would better discontinue it while using the iodine treatment. They do not seem to work well together. Many symptoms of iodism, in fact, are similar to those of quininism.

I trust this good, and simple, old-fashioned remedy, glycerol iodine, will be tested experimentally by those looking for new remedies for tuberculosis. It is possible that, like the king in the old story, wandering the world over in search of happiness which was to be found in his own breast—some are looking far afield for some magic serum that will kill the tubercle bacilli and heal the injured lung, while the thing sought, in the form of glycerol iodine, stands right by on your medicine shelf.

A few words as to my preparation of glycerol iodine, and I am through. Any physician with a pint flask such as is used for making chlorine gas, and a gas or alcohol stove, can make his own glycerol iodine. Put an ounce of iodine in the flask, and add 12 ounces of alcohol. Set the flask in a sandbath over your heater, and connect its neck, by means of a rubber tube, with a glass tube running down into a wide-mouthed bottle. The latter must stand in water kept cold with ice, or running water, to condense the vapors as they come over.

Use a gentle heat until the alcohol and as much of the iodine as it will carry over with it has been distilled over into the wide-mouthed bottle. All impurities in the iodine will thus be left in the flask, and you will have 12 ounces of alcoholic solution iodine which, when you have added to it four ounces of glycerin, commercially pure, will give you a pint of pure medicinal glycerol of iodine.

CANCER OF MALE BREAST: REPORT OF A CASE.

BY

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of Washington, D. C.

Assistant Professor of Surgery, Howard University; Surgeon to Freedmen's Hospital.

Believing that if all cases of cancer of the male breast were reported the proportion of these growths to similar growths in the female breast would be larger than that generally given (1-100), I desire to place on record the following case:

H. M., colored, aged 66, a farmer by occupation, was admitted to the Freedmen's Hospital, October 13, suffering from a growth in the right breast. He is a robust, well-nourished man, whose family and past history have no bearing on the present condition.

He states that three years ago the right arm became sore and painful and that soon after the right breast began to enlarge and has since steadily increased in size. When the enlargement was first noticed there was a discharge of a milky fluid from the breast, which, however, did not last long. There has never been any hemorrhage. No history of trauma could be elicited. There have been occasional attacks of lancinating pain and the breast has been painful when handled, especially the region about the nipple.

The patient is a man in vigorous health, all the vital organs being in normal condition. Both breasts are prominent. In the right mamma is a spherical, easily-defined growth 7 cm. in diameter. Two-thirds of the mass is hard and unyielding, but in the outer portion is a softened area, 2 cm. in diameter, containing fluid and suggesting the presence of a cyst. The nipple is retracted and painful to pressure. The mass moves freely on the pectoral muscles. Axillary glands not palpable, owing to excess of fat.

The growth was removed October 17, 1902, by the Meyer-Halsted operation, and the patient made a perfect recovery. Up to the present there have been no signs of recurrence, locally, in the viscera, or in the spine.

Macroscopically the growth is a greyish mass, with an apparent capsule. Running downward from the nipple and thence outward to the right is a hemorrhagic area, which communicates with the soft portion of the growth which was felt on palpation. This soft area contained dark fluid blood and some clots, as if a vessel had been opened by the extension of the growth and had caused hemorrhage.

The report of the microscopic examination, by Dr. Neil D. Graham, is as follows:

Under the microscope a section of the tissue reveals an alveolar arrangement of large, spheroidal cells, epithelial in character, which are irregular in shape and size. As a rule, no basement membrane is visible, but here and there cross-sections of acini may be seen, in which the epithelium has proliferated until the lumen is surrounded by several layers of cells. The surrounding connective tissue is somewhat dense and contains bloodvessels. Diagnosis: carcinoma.

The latest statistics on this subject are those of Warfield,¹ and to this compilation any one interested is referred.

Criminal Statistics in France.—Criminal statistics for 19 years, from 1881 to 1900, as officially presented by the Department of Justice, furnish interesting data for the study of criminology in that country. For several years previous to 1895 criminality in France augmented from year to year, but since 1895 there has been, on the contrary, a continual decrease. In 1900 the number of cases submitted to the jury was 2,283, as against 2,524 in 1899. Including cases submitted to the correctional tribunals, some 8,644 more cases were tried in 1899 than in 1900. Another point of interest is the progressive diminution since 1894 of the number of recidivists and also of first offenders. In 1899 the number of recidivists condemned was 89,594, which fell to 86,027 in 1900. Of first offenders there were, in 1899, 108,959; in 1900, 99,550. There has been a diminution in the number of accused persons completely illiterate and of those residing in rural communities.—[*Charities.*]

¹ Bulletin of the Johns Hopkins Hospital, Vol. xii, No. 127.

CONGENITAL ABSENCE OF BOTH INFERIOR RECTI MUSCLES.¹

BY

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of Pittsburg, Pa.

On August 22, 1902, Wilber S. A., a healthy, well-developed child, aged 6, was brought by his father, upon the recommendation of Dr. S. H. McKibben, to have his eyes examined preparatory to beginning school. His parents suspected "weak eyes," for the reason that the child would bend over and bring his face quite close to his picture book and toys. In other respects he appeared to possess good vision, recognizing distant objects as readily as did his parents. However, he would not run races nor romp with other children, and in this respect only did he appear different from his brothers and playmates. His parents attributed this to an aversion to becoming overheated, as he had suffered when 4 years of age an illness lasting about a week, said to have been due to a "sunstroke," in which he had not lost consciousness but had been rather apathetic for a few days, with some nausea and vomiting.

He had whoopingcough when 2, and measles when 3 years of age. There are two older and two younger brothers and a baby sister. All are healthy and sound in every respect, as are both parents.

Examination.—External inspection and palpation of the eyes reveal nothing abnormal. Globes are moderately prominent, lids have long curling lashes, irides are hazel brown, sclera, conjunctiva, and cornea are clear and glistening. Movements of both eyes inward, outward and upward are perfect. When asked to look down, however, the patient flexes his head upon his chest, his eyes not making the slightest movement below the horizontal plane.

The flexion of the head is not accomplished in one movement, but in several jerky nods, until the line of vision is sufficiently depressed to include the object sought, when the last nod centers his vision upon the object. Repeated commands to look at and name different objects (patient being illiterate) ranging in size from a silver dime to a felt hat, placed upon the floor from 4 feet to 8 feet in front of him, result in the same succession of downward nods, the article in every instance being correctly named. Ophthalmoscopic examination was negative, with about 0.50 D. hypermetropia in each eye. Pupils react normally to light and accommodation.

A local anesthetic (a solution of equal parts of adrenalin chlorid 1-1,000, and holocain HCl 1-500) was instilled into each eye several times and the conjunctiva grasped with fixation forceps at the lower corneal margin. Each eye could be drawn downward freely, but the upper lids, with the patient making efforts to look down, did not follow the downward movement of the eyeballs. The lower ocular conjunctiva was freely incised and retracted in a bloodless field, revealing a total absence of the inferior rectus in the right eye, nor could a small strabismus hook introduced find the slightest rudiments of an inferior muscle. A similar search in the left eye was refused by the child's father, but the condition must be without doubt the same; at any rate, there is no reason to suppose the existence of a paralyzed muscle in the left eye.

In presenting this case attention is invited to the rare occurrence of congenital absence of the extrinsic muscles of the eyeball. In the literature at my command I am unable to find a record of a similar case. A few of the textbooks make mention of congenital absence, but the absence of the same muscle in both eyes must always be a most remarkable anomaly. Yet, while its binocular occurrence is rare, it is more kind than monocular absence, since with the latter there would be troublesome diplopia with all its concomitants.

Comparison of Brain Weights.—According to a dispatch to the *Chicago Tribune*, Professor Marchand, of Marburg, has accumulated the largest number of brain weights ever published. He gives a thorough analysis of 1,169 cases. He says he finds the average weight of the brain of a male child at birth is 360 gms., and of a female child 353 gms. Although Professor Marchand shows a certain relation between stature and brain weight the relation is very inconstant. He concludes that the lesser weight of a woman's brain is not alone dependent on her smaller stature, as a comparison of both sexes of the same stature show that the male brain is invariably heavier. In a growing child, until it reaches a stature of 70 cm., the brain weight increases proportionately with the body length, irrespective of age or sex. After that the male brain begins to outstrip the female. The maximum brain weight is usually attained about the twentieth year, when the male's average is about 1,400 gms. The female maximum is usually reached about the seventeenth year, when the average is 1,275 gms.

¹ A case exhibited in the Section on Ophthalmology, Otolaryngology and Rhinology of the Allegheny County (Pa.) Medical Society, October 1, 1902.

SPECIAL ARTICLES

GLIMPSES OF THE PRACTICE OF MEDICINE AND DISEASES IN THE WEST INDIES.

BY

NICHOLAS SENN, M.D.,

of Chicago.

[Concluded from page 506.]

Jamaica is the largest and most valuable of all the British possessions in the West Indies. The last census showed a population of 706,344. Like in the other islands the negro population is increasing very rapidly, while the number of Europeans is rather on the decrease. A long range of mountains runs the entire length of the island from east to west. North of this mountain range rain is more abundant, the soil more fertile, the trees larger and vegetation more luxuriant than on the opposite, southern slope. The scenery along the north shore is superb, a Switzerland with palms. The many clear mountain streams and mineral springs add much to the attractions of this island for a perennial summer climate as a winter health resort. At the time of our visit the large hotels at Kingston and Port Antonio were crowded with visitors from the north. Port Antonio is by far the most beautiful spot in all the West Indies. The little city is nestled among gigantic palm trees at the base of the foothills, the narrow street is kept in excellent condition, the little huts of the negroes are quaint. The bread trees and bananas, the largest in the island, and the beautiful harbor present an exquisite foreground, while the forest-clad foothills overshadowed by the towering blue mountain ridge make a background such as cannot be equaled in grandeur and beauty in any other island of the West Indies. Port Antonio has the climate and the scenery to recommend it as a desirable winter resort.

Kingston, the capital of Jamaica, is a bright, wide-awake city of nearly 60,000 inhabitants. It has been decidedly progressive, as it is lighted by electricity and gas, has asphalted streets and a complete electric car service. The negro population, although poor, is not poverty stricken, as in most of the cities of the other West Indies. Outright begging is almost unknown. The sick and poor are well provided for by the Colonial Government. In all of the English colonies the poverty stricken are carefully looked after by the government, and in this respect have set an example worthy of imitation by nations which have similar obligations resting upon them. The organization of the medical service for the relief of the poor is deserving of the greatest praise, and should be studied as an instructive object lesson by our own country. The medical officers are appointed by and receive their pay from the government. In our country, as is well known, with very few commendable exceptions, the doctors are expected to give their services to the poor without any thought of recompense.

The Colonial physicians, by virtue of their office, are prominent in social and political circles, and receive a fair salary for their services. In none of the English colonies is the medical profession overcrowded. The admission to practise is well barred. In many of the British possessions only graduates of British medical schools are permitted to make application for license. In Jamaica, for instance, a graduate of any one of the Canadian medical schools would be required to take a post-graduate course in one of the European British schools before his application would receive consideration.

Kingston Public Hospital.—There are no private hospitals in most of the West Indies. France and England have well-managed colonial hospitals which, while they do not come up to our ideas of what a hospital should be, relieve a pressing need which the governments recognize. The Kingston Public Hospital is centrally located, easily accessible by electric car and is made up of a complexus of buildings old and new, affording space for 350 patients. The large square around which the buildings are arranged is very attractive and is the gathering place for the convalescents. Dr. Charles W. M. Castle is the senior medical officer. The sick are cared for by eight female nurses, each of them assisted by one or two pupil

nurses. Provision is made for a limited number of private patients. The surgery practised here is the surgery of the English hospitals, rather antiseptic than aseptic. Among the most interesting operative cases shown were abdominal section for appendicitis, intestinal obstruction caused by bands of adhesions, radical operation for hernia, amputation at knee-joint, and trephining for intracranial traumatic hemorrhage. The last annual report (1902), Table V, gives a return of surgical operations performed with results—1,107 operations with 15 deaths. Certainly a very good showing when we glean from the same source that this table includes among other major operations a number of high amputations, abdominal section for ovarian tumors and myofibroma of the uterus. Chloroform is used exclusively as an anesthetic and carbolic acid is relied upon very largely as an antiseptic. On the other hand, the list of operations includes tooth extractions, operations on the eye, and counterirritations by the use of the actual cautery. The entire number of patients for the year amounted to 3,799. Among the most noteworthy diseases were typhoid, malaria, tuberculosis, and venereal affections, and their complications. The report alludes to the typhoid fever patients as follows: "There were 28 cases of this disease admitted with 12 deaths, a very high deathrate no doubt; but nearly all of the fatal cases were admitted in a very advanced stage of the disease, indeed little or nothing could be done for them." Malarial fever was most prevalent during the last five months of the year. The mortality from this disease was very small. Of 1,226 cases 18 proved fatal. The venereal cases numbered 206 and were classified as follow: Syphilis, 33; gonorrhoea, 90; chancroid, 83. The hope is expressed that the disease is on the decline. The five cases of tetanus proved fatal without an exception. Only one case of yellow fever is recorded and this patient died. In two amputations for elephantiasis of the leg the patients recovered. Elephantiasis and ankylostoma are rare affections here as compared with some of the islands further east and south.

Cuba.—The war with Spain has made us more familiar with Cuba than any other island in the West Indies. This event has given us ample opportunity to become better acquainted with its people and the diseases which afflict them. Our invading army reached the island at a time when the climate was most dangerous and the acute infectious diseases most prevalent. In a few weeks we lost nearly one-half of the fighting force by disease. The number killed outright by bullets was small compared with the loss from disease. The Spaniards passed through the same trying experience. It is well known that the Spanish army lost 50% of its fighting strength from the same cause in two months after landing in Cuba. The Spanish surgeon I met inside of the lines of the enemy, a few days before the surrender of Santiago, where we delivered to him, under a flag of truce, 16 wounded Spanish prisoners, informed us that when his part of the army reached Cuba the men were all in good health, and that then many were sick, and none well. He drew a sad picture of how their ranks were decimated by yellow fever, malaria, and dysentery. During the entire insurrection Cuba was at no time entirely free from yellow fever, and malaria is present more or less in most of the valleys and lowlands of the coast. Many of our soldiers were infected with typhoid fever in the home camps before they left for Cuba, and here all of the conditions were present for its rapid spread among the troops. Malaria, typhoid fever, and dysentery rapidly thinned out the ranks and file of our army, and when the troops returned every transport was a veritable hospital. American intervention has gained for Cuba not only the long-wished-for independence, but it has also brought another and perhaps greater blessing—almost complete eradication of yellow fever from this pest-stricken island. The wonderful results of modern sanitary methods are seen nowhere to better advantage than in the city made famous by the war.

Santiago is the oldest city in America, founded by Velasquez in 1514. Its present population is 40,000. It has now direct railway communication with Havana. Before and during the Spanish-American war Santiago was noted for its filth and pestilential air. The nearby Siboney, the base of our operations during the war, was shunned even by the coast fishermen, as it had gained an unenviable reputation as a neverfail-

ing focus of yellow fever infection. The moment the Americans took possession of Santiago a vigorous warfare against this disease was initiated and prosecuted without a let-up until this pest-hole was converted into one of the healthiest cities on the island. Dr. Leonard Wood proved himself not only a brave soldier but also a sanitarian of the highest merits. His sanitary measures have done more of permanent value for the Cubans in the city of Santiago and elsewhere than his bravery in the gallant charge on San Juan Hill. We arrived at Santiago Thursday, January 29. As we passed the famous Morro Castle the Cuban flag, a single star in the center of a red triangle, and the white and blue stripes, was displayed side by side with the familiar star-spangled banner, signifying that the single star owed its existence to and claimed the protection of the star-bedecked emblem of the great sister republic so near by. Any one who has not seen Santiago since 1898 would hardly recognize it today. The magnificent asphalt paved streets, the clean gutters and utmost cleanliness everywhere are in strong contrast with the conditions found here after the surrender in 1898. No such radical changes would have taken place in the same length of time had the Cubans succeeded in gaining their independence without outside assistance. Santiago is now a healthy city, made so entirely through the energetic efforts of the Americans during the few years of their occupation and rule of the island. Even now the odor of carbolic acid pervades the air in many parts of the city where disease had formerly its stronghold. A mountain stream supplies the city with an abundance of pure water. Business has improved, new industries are being established, and a general awakening is apparent everywhere.

Will the Cubans ever appreciate to the fullest extent what has been done for them by a modern form of government, the direct outcome of American intervention? Will the object lessons in practical sanitation witnessed by them during the last five years yield the expected fruit in the future? The future can only decide. To me the most interesting place in Santiago was the Civil Hospital.

Civil Hospital.—This, the only hospital for civilians, was formerly the Spanish Military Hospital. Material improvements and changes have been made to fit it for its present purpose. It is a very large, square, one-story brick building with a large open plaza or court inside for a number of large wards and ample space for the convalescents. The rooms of the outer or wall part of the building are largely devoted to the administrative part of the institution, offices, pharmacy, operating and dressing-rooms and a number of small wards. Here are also found those suffering from mental diseases. These patients are brought here for observation for a period of 30 days when, if found insane, they are sent to the Insane Asylum at Havana for treatment and further safekeeping. The medical staff consists of four attending physicians and two resident interns. An American trained nurse is at the head of the training-school for nurses. The training of the native nurses consists in lectures by the attending physicians and recitations and demonstrations by the head nurse. They are required to pursue their training and studies for three years; at the end of this time they are subjected to a rigid examination and if found qualified receive a certificate to this effect.

It is the expectation of the managers of the school that a sufficient number of trained nurses can soon be supplied to the well-to-do patients in the hospital and private homes. Provision is made in the hospital for private patients at the rate of \$1.25 a day. There are at present 252 patients in the hospital. During the last year it cared for more than 4,000 patients and 520 operations were performed. The operating-room is large, well lighted and equipped with all necessary appliances for modern surgical work. We were fortunate in finding Dr. Ramon Neyra, a member of the attending staff, on duty. He is a graduate of Bellevue Hospital Medical College, New York, and until recently practised his profession at Panama. He is a progressive man and takes a deep interest in the success of this new institution and the welfare and comfort of his patients. The scrupulous cleanliness throughout the institution speaks well for the industry and intelligence of the foreign and native female nurses. Among the more interesting cases shown was a case of chronic tetanus. The patient was treated by antitetanic serum and chloral hydrate and was on the way to recovery

after an illness of more than six weeks. Second, a case of gunshot wound of the neck. In this case a 30-caliber bullet entered the mouth, penetrated the tongue near the tip and was extracted the day before our visit through an incision in the posterior part of the neck. Also a number of radical operations for hernia and several cases of laparotomy for different indications were shown.

Havana.—The tourist who visited Havana before the Spanish-American war will be astonished and pleased at the remarkable changes which have taken place since. I saw Havana two years before the American army landed on Cuban soil. The Spanish flag then waved over Morro Castle and Spanish troops paraded the streets of the city. A guerrilla warfare was then in progress with the discontented, oppressed Cubans. Business was dull, and the merchants looked with apprehension into the uncertain dark future. The harbor reeked with filth, the streets were dirty, all improvements at a standstill. The water supply was contaminated, and sewerage was either entirely lacking, or at any rate very defective. Yellow fever had a firm and permanent foothold on the soil and in the many unsanitary dwellings of the poor. I visited the Spanish Military Hospital at that time. It was an immense ancient pile of stone and cement, without any indications of what modern surgery had accomplished. It contained a number of yellow fever patients, some of them in a dying condition. In the surgical wards I found a large number of wounded. All wounds were suppurating. Erysipelas, phlegmonous inflammation, osteomyelitis and necrosis were the rule in gunshot wounds of the bones. The surgeons who made their rounds used the same probe in examining the wounds, as they proceeded from ward to ward, without even taking the pains of subjecting it to ordinary cleansing, to say nothing of disinfection. Hands were washed when the work was done. What I saw at that time was the surgery of half a century ago. It is remarkable what changes have taken place since the American troops took possession of the city. The Spanish colors have disappeared from the flagstaff of Morro Castle, and its place has been taken by the flag of the newborn republic of Cuba. Back of Morro Castle, on an eminence rising from the sea, the Stars and Stripes wave over the camp of several companies of our soldiers who still remain to protect the interests of our country.

The wreck of the "Maine" sleeps in the clear water of the harbor as a silent reminder of the immediate cause which provoked the final struggle of the island for liberty and independence. Havana is now a prosperous, progressive city with 250,000 inhabitants. The well paved streets are models of cleanliness, the sewerage and water supply are the best in the world. Business is thriving and a general air of prosperity is noticeable on every side. Old buildings are being renovated and many new ones are in process of construction. Yellow fever no longer hangs over the city like a threatening cloud. A vigorous battle against its bacterial cause, inaugurated and prosecuted with unremitting energy by American sanitarians, has wiped out of existence this scourge from this part of the island. The Spanish Arsenal has been converted into a modern university, and the Spanish Military Hospital is now the General Hospital for the poor of the city, greatly improved and well managed. The "General Wood Laboratory" is a scientific institution of which a much older country might well be proud. Old Havana has discarded its ancient dress and has taken a place in an entirely new attire, well to the front in the ranks of the healthiest, most interesting and progressive cities of the present day. The marvelous changes which this city has undergone have been as radical as they have been speedy. Five years is a short time for a stagnant old city to pass through such a complete renaissance. All of this has been accomplished largely by American assistance, American intelligence, and by American energy and enterprise. It remains now for the Cubans to take up the work of maintaining what they have gained, and now and in the future to imitate the example of their well-meaning strong ally, to whom their gratitude should be sincere and lasting.

Centro Asturiano Hospital.—To the medical visitor the hospital facilities of Havana offer the greatest interest. The city is well provided with hospitals, private and public, nine in all.

In all of the places we had visited before during the cruise among the West Indies, none of the hospitals had desirable accommodations for private patients. In a few, pay patients were received, but none of them had private rooms. In Havana there are two public hospitals devoted to the care of the sick poor, the rest are private hospitals established and maintained by mutual aid societies. Of these the Centro Asturiano is decidedly the largest and the best. After visiting the Santiago Public Hospital, a most excellent institution, I was prepared to find a still better one in Havana. A visit to the Centro Asturiano, however, was a complete surprise—a revelation. I found here a model hospital equipped with all known modern improvements, a hospital which has no equal anywhere, excepting perhaps the Hamidié at Constantinople. We have many splendid hospitals in our country, public and private, but not one of them can compare with this magnificent structure in the infant Cuban republic. It is the property of the Central Asturian Society, an organization to which Cubans and Spaniards are eligible alike, all of the members of which pay \$1.50 a month, for which consideration they are entitled to free medical treatment at the dispensary and hospital. The branch

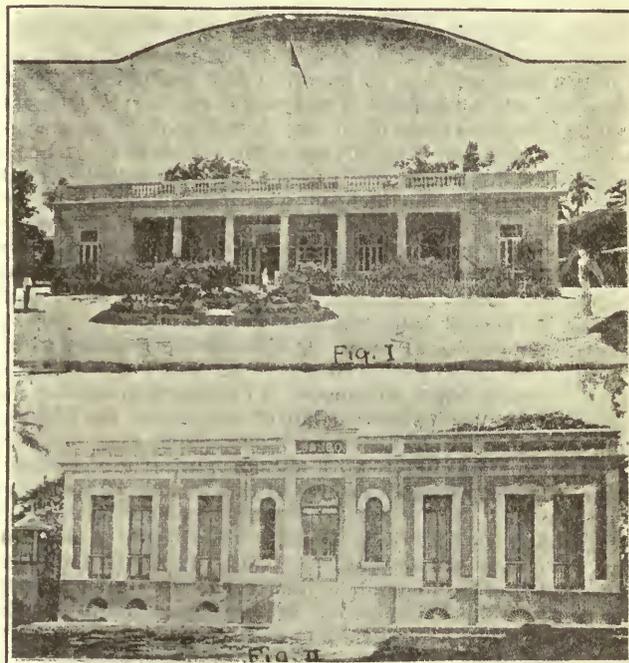


Fig. I.—Administrative building, Centro Asturiano Hospital. Fig. II.—Operating pavilion, Centro Asturiano Hospital, front view.

of the society which built and supports this hospital numbers 14,000 members, and has therefore an annual income of \$252,000. The present capacity of the hospital is 250 beds, and the number of patients 178. It is next to impossible to give a description of this hospital that will do it justice. The uninitiated visitor finds something new and novel with every step he takes. In the first place the site of the hospital is a well chosen one. It is situated on a tract of land which comprises no less than 100 acres, near the southern limits of the city, made readily accessible by an electric tramway. The hospital occupies the highest point of the hill, but is hidden out of sight by tall trees which line the avenue leading from the entrance to the buildings. As one enters the arched, artistic gate, he finds himself in a beautiful park with indigenous trees, shrubs, and a great variety of tropical flowers. Near the center of the park is an artificial lake, spanned at one end by an arched bridge of exquisite architectural design. Eighteen pavilions make the present group of buildings, arranged around a large park-like court. All of the buildings are one-story structures with solid stone walls of roughly hewn stone coated on both sides with cement, painted on the outside a faint blue and salmon color, and all of the door frames azure blue, which adds much to their attractive, pleasing appearance. The

inside walls and ceilings are frescoed, the details of which exhibit the good taste and great skill of the artist. All of the wards have a broad open space or passageway the entire length of the room with the comfortable cozy little private rooms with one and two beds on each side opening into it. The inner wall of the rooms is a frame partition with a space of at least five feet between it and the high ceiling, thus affording every facility for free ventilation of every room, or rather compartment. The wide central hall or passageway is furnished with chairs and small round tables. Here the patients who are not confined to bed take their meals, from one to four at each table. All of the floors are made of tiling.

At the time of our visit the principal meal of the day was served. The table ware was as good as in any first-class restaurant. The dinner consisted of roast beef, stewed Spanish peas, excellent white bread, vegetables, and a glass of Spanish claret. The operating pavilion is a study in itself. From a central passageway doors lead into the sterilization, disinfecting, instrument and anesthesia rooms. The large operating-room is reserved for aseptic cases exclusively and is faultless in its construction. The collection of instruments, all of them imported from Paris, contains everything the surgeon will ever need in performing any operation and much to spare. The instrumentarium alone represents the cash value of a small fortune. The sterilization-room is perfection itself. It is certainly a great privilege to operate under such perfect conditions and it is not difficult to understand why the results should not be within the range of all that is attainable in this age of successful surgery. One large pavilion is used as a storehouse, another for the reception of patients and sterilization of clothing and bedding. The kitchen is a separate building, equipped with every possible convenience. The washhouse contains the most modern machinery. The pride of the institution, however, will be the bathhouse that is nearing completion. All around the central, porcelain-lined swimming bath are bath-rooms for special baths, such as Turkish, Russian, douche, electric and medicated baths. It is impossible to conceive of a more perfect bathing establishment than this, and it is doubtful if it has an equal anywhere. A Chicago firm was the successful bidder for the construction of this part of the hospital, and the firm needs no better recommendation than the work done here. It would require too much space to describe in detail the many unique features of this wonderful institution for the sick, it must be seen to be understood and appreciated. Not a dollar has been foolishly expended, everything is simple and yet elegant and eminently practical. It will be for a long time an object lesson for all architects who are to prepare plans for new hospitals in our as well as more distant countries. The society employs three physicians at salaries ranging from \$150 to \$300 per month, and two resident internes. The number of female patients so far has been very small and these are cared for by a trained female nurse; the remaining nurses are males, most of whom received their training in the Spanish and Cuban armies. A corps of well-trained female nurses is all this hospital requires to place it at the very head of all institutions of its kind. The hospital on the present large scale was commenced six years ago, and new buildings are being added as the demands upon it increase. A few interesting points concerning the surgical work, I have taken from a report published in 1901. The chief operator is Dr. Manuel V. Bango. The statistics embrace all operations performed from March, 1897, to July, 1901. The number of operations was 2,066. Of these 2,057 patients recovered and only 9 died. This is certainly a record it would be impossible to duplicate elsewhere. The results undoubtedly are unexcelled, but it must not be forgotten that among the operations we find furuncle mentioned 152 times; cold abscess, 237; felon, 51; hemorrhoids, 39; enucleation of inguinal glands, 163; hydrocele operations by injection and incision, 327; fistula in ano, 29; gradual dilation of the urethra in stricture, 62; and many other minor surgical procedures which should not be attended by any mortality. Of the 120 Bassini operations for hernia 1 patient died; of 2 laparotomies for gunshot wound 1 patient died, and of 3 operations for strangulated hernia 2 patients died. During the same period of time the number of patients was 18,435. Of these 18,073 recovered and 362 died, a total mortality of 1.96%.

Real Hospital de San Lazarus.—The Royal Hospital of St. Lazarus is the asylum for lepers. It is an old two-story square stone and cement building, divided in the middle by a connecting wing which separates the open square or court into two spaces of equal size and which separates the male from the female patients. It has been the home for this unfortunate class of patients since the founding of the institution 50 years ago. Its inmates are under the watchful, tender care of the Sisters of Charity St. Vincent de Paul.

At present seven Sisters, with a long and trying experience, remain faithful at their post. Their willing hands and cheerful faces have done much in modifying the gloom that necessarily hangs over the inmates of such a home where there is so little hope of recovery or escape. The present number of lepers is 117. A second asylum for lepers, with 40 inmates, is located at Santiago. The laws of Cuba make segregation compulsory. A person suspected of having the disease is examined by a commission of three physicians, and if declared a leper is sent to one of the two asylums, where he is held until he dies or recovers. The Sister Superior made the statement that during the last three years two or three patients were discharged cured. In these cases it would be well to place an interrogation mark behind the diagnosis in the records of the hospitals. The youngest patient in the hospital is a boy of 12. One of the inmates, a Cuban by birth, claims he contracted the disease during a prolonged residence at Key West. He said he was covered with boils all over the body. His skin is now clear and he presents no evidences of being affected with the macular form of the disease. Visitors, relatives and friends are permitted to enter the hospital at any time of the day, but the patients are strictly confined. They are well cared for and appear to be as contented with their unhappy lot as circumstances will permit. The building is situated on the seashore drive, where the patients receive the benefits of the cool, refreshing ocean breeze.

New Providence.—New Providence is one of the Bahama group of islands, and is well known as a popular winter resort for tourists and invalids from the north. The number of inhabitants does not exceed 15,000. The little island is flat but is very attractive with its tropical foliage, graceful palms, ciba, cedar, silk cotton and tamarind trees, and luxuriant vegetation. Nassau is the seat of the English colony of the Bahamas. The Colonial Hotel, an American enterprise, is an immense and beautiful building facing the harbor. During the three winter months it is open to the public. For a midwinter rest it would be difficult to find a more soothing climate than Nassau and a more comfortable hotel than the Colonial. Dr. W. E. Bullard, a well-known New York physician, spends his winter vacations here and attends to the medical needs of the patrons of the hotel. His genial disposition and medical skill have earned for him a well merited reputation as a successful physician here and in New York. The city itself is quiet and orderly, and during the winter months the climate is delightful. The many beautiful drives, the sea bathing and yachting, the wonders of the unique sea garden, and the mysterious fascination of the "Lake of Fire," afford pleasing attractions for recreation and mental diversion and rest.

New Providence Asylum.—The Colonial Government of the Bahamas has to deal with a somewhat mixed method of taking care of its sick and poor. The New Providence Asylum, Nassau, is the only public institution for the dispensation of public charity. It is situated near the center of the little city on ample grounds, which have been improved only in part. It hardly deserves the distinction of a hospital. It was founded in 1832 and was at first intended as a home for the poor. In the course of time provision had to be made for the insane and lepers, so that by a gradual process of evolution it has become a combination of poorhouse, insane asylum, hospital, and leprosy, retaining, however, its original purpose as the preponderating feature. This complex and certainly very unique institution is in charge of Dr. L. D. Parsons, a charming personality. Dr. Parsons is a graduate of Edinburgh and has been at the head of the management of the asylum for a year. He has already made many important changes, and has in contemplation many more calculated to bring the asylum up to the standard of present requirements. The possibilities in this direction are

great and we wish our colleague the very best success in his humane endeavors. The buildings are all two-story stone and cement pavilions. The one that serves as a hospital has 40 beds. A trained English nurse with three colored helpers is in charge of all of the inmates of the asylum. The young colored women do not take kindly to nursing, as they do not look upon the occupation of a nurse as a profession. The greatest difficulty is encountered in securing the material, as the women prefer housework to hospital work. As soon as a probationer has been instructed in the performance of her simplest duties she is apt to leave as soon as a prospect of a more congenial employment presents itself. The nursing in all of the West India hospitals is very unsatisfactory, and will remain so until the colored women can be made to understand and realize the dignity and high standing of the profession of nursing. The last English nurse here held out for three years, when her health broke down from overwork, and the same fate awaits the one who has taken her position.

The poorhouse proper is the best building on the grounds, and Dr. Parsons has taken the necessary steps to convert it into a hospital and remove the inmates to the present hospital building, a most desirable change. The insane asylum in the same enclosure occupies the top of the hill, and has at present 40 inmates. A number of the male patients were engaged in chopping wood under the supervision of a guard. The lepers, 14 in number, live in a separate building, but are allowed to mingle freely with the other inmates of the asylum, and are permitted to leave and enter the asylum during the daytime when they choose to do so. There is no compulsory segregation in the colony of the Bahamas.

There are few abdominal sections performed, as the colored women suffering from myofibroma and ovarian tumors who occasionally enter the hospital invariably refuse to be operated upon. New Providence appears to be out of range of the tropical diseases we found so common in the more southern of the West India islands. Elephantiasis as an indigenous disease is almost unknown, and ankylostoma and abscess of the liver very rare. The most common disease is tuberculosis. Malaria of a mild type and its complications make up a large part of the statistics of the diseases of the islands. The water supply is cistern and well water, and although Nassau has no sewerage its soil is free from typhoid infection.

On board "Kaiserin Maria Theresa," Harbor of New York, February 6, 1903.

HOW CAN THE STANDARD OF THE MEDICAL PROFESSION BEST BE RAISED?

BY

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In discussing this question it is quite unnecessary to demonstrate that the profession of medicine requires raising. What standard is high enough for the ambition of men and women who hold in their hands the issues of human life and death? The duties, responsibilities, and privileges of the physician exceed those of all other men save only, possibly, those of the ministry, and from certain points of view, instinctive but universal, to save or to prolong human life is the most precious privilege men know. Although, of course, the medical profession is made up of individuals, this problem of raising its standard is in no sense a personal question, but rather a very broad one of public utility, of economics. It is an unduly self-satisfied man, a person living in the spirit of trade rather than in that of a liberal and altruistic profession who can see no higher possibility for medicine than at present it often exhibits. It is no detriment to the best to say that the worst and even the average should be improved. Development is constant and progressive, but it comes only by thought and effort, and seldom or never by chance.

When one sets out to define in what particular respects the standard of practical medicine might be raised, seemingly with universal advantage, he has little way to seek. Sometimes, in pessimistic moods, it seems as if, with the multiplication of medical schools, this standard were trending downward at more

than a moderate pace. But in these following respects, at least, there may apparently be pointed out actual harmful tendencies in the profession, given here in the inverse order of their importance: 1. Many medical students are practising medicine legally, having passed their State license examination sometimes years before they attain to a medical degree. These are usually men clever beyond the average, but lacking necessarily in experience and competency. Here is a direction in which the antivivisectionists might seek new legislation to the public benefit, rather than to the public harm. 2. One observes too often in the medical graduate practitioner a youthfulness naturally incompatible in almost every case with his high and responsible calling. 3. One repeatedly has forced upon him the conviction that too often, even from a multitude so numerous as ours, there fall members of the profession into various abysses of quackery, and even of crime. 4. Many observers miss in medical men the ancient dignity which alone is appropriate in a profession of human life and death, which of all things are most dignified. 5. One sees the spirit of commercialism more common and more vigorous than the normal altruism of the real physician, which has always made him feel himself "his brother's keeper." This commercialism (in many directions outside of medicine the curse of our times) finds its chief expression in the great and increasing competition among physicians, thus intensifying their "struggle for existence," when for the best public interest there should be little of such competition. 6. Physicians do not often enough take an interest in public affairs, thus depriving the State of a point of view which would be of great value to it. 7. One feels that almost always in medical education the personal, individual element of influence is wholly lacking. One suspects that sometimes the instruction is too mechanical and too seldom devoted to the purpose of making the graduates cultured gentlemen as well as competent physicians technically. 8. Above all, one is continually aware, in recent years especially, of a general technical unfitness among the newer licentiates quite inconsistent with the ever-enlarging scientific art of medicine. The science expands much faster than it is acquired by its pretended masters.

The causes of these (increasing?) tendencies in the medical profession of America are hardly less obscure than the tendencies themselves. These causes are certainly fundamental and need careful consideration, if they can secure it, from us here. It is possible that a careful analysis of the business and social relations of the mass of practitioners would expose secondary influences at work which might, to some extent, account for certain of the unfortunate tendencies just enumerated. It is certain, too, that the propensities of society at large affect the medical profession as well as all other classes; one may instance the hurry and overeagerness for an immediate monetary success and the abnormal demand for enervating luxury. But these tendencies, as has been hinted, seem to be secondary and the primary conditions at fault further back in the mode of education of the physician. Once more, apparently one sees H. Spencer's "vibration tendency in events" exemplified, the pendulum, having swung from the old-time personal, preceptor system, has gone nearly to its opposite limit, and medical education has become too much a mechanical process, infused (as what is not?) with the hurry and the unadaptability of the machine. This is the more unfortunate because in no other profession is the practitioner the direct and immediate product of the curriculum by which he is "educated" in the degree that the physician is so. Aside from purely temperamental qualities, a man's or woman's fitness to care for human beings in disease comes directly and almost wholly from the courses he or she mastered in the medical school. The high degree of technicality now demanded in the preparation to practise makes this inevitable. The curriculums of these schools vary widely, no two being alike. In the old days, when practical work and the student's manual and ocular experience were at a minimum, this variation mattered comparatively little, for the textbooks and lectures of one school were as apt to be pedagogically good as those of another. Now, however, it is otherwise, and a medical school's usefulness to its students depends quite as much on its laboratories and their equipment and on its clinical opportunities as on its recitations and its lectures. One sees

demonstration of this in the disproportionate growth of the medical schools in the larger cities. Thus ever more important becomes the laboratory outfit of a school; proportionally better is the old and famous and hence wealthy college, and relatively worse fortune is it "to be compelled by circumstances" to attend an inferior school. But the large part of the 5,000 medical graduates each year in the United States come and will continue to come from institutions relatively poor in endowment and relatively lacking in equipment, and with entrance requirements adjusted to the demands of students with only a high school preparation. This is the average medical school, and these have average students—let us try to get their point of view of their medical studies. Considerable personal acquaintance among the students of four of our largest medical colleges forms the basis of these opinions.

The most universal feeling among the students of our best medical schools is that they are obliged to work very hard to carry out successfully their courses. Too many nights of every week are required for the average student, so he thinks, to keep up his theory when the practical work takes up almost all the day. To mere hard work no one can make objection, for it is useful necessary training for the grind and strain and wear and tear of practice. But overwork is a far different matter, and it does seem probable that a large percentage of our medical students may fairly be said to be overworked, especially during the first year or two of the course. Whether such a general statement could be substantiated or not, it is surely true (as in the public schools similarly in most cases) that too little allowance is made for the slower, but not therefore inferior, students. Overwork tends to nerve exhaustion and learning incapacity, and every medical instructor appreciates very well the difference between the capacity in this respect in October and that in May; one sees a distinct deterioration too often verging on exhaustion. But even overwork is not the worst that may be said of the student's notions on these matters. There is everywhere in all vigorous schools a deplorable sense of hurry, of insufficient time for even insufficient work, a feeling which of all things leads to mental indigestion. Medical education, fitting men and women for a serious lifelong profession, should not be conducted on the already decadent "quick lunch" plan, but it should rather be the stately, restful dinner as full of unhurried dignity as of solid nutriment and various flavor; human, not mechanical. One sees in many phases, if he look, the evil issues of this allpervading cramming system; the most useful knowledge is not thus acquired. The medical publishers know and are glad to advertise how many thousands of "quiz-compend" they sell, and the figures are a striking indication of the senseless hurry of the times; they indicate: Get facts, get them as quickly and as concisely as you can, or you won't have time to get enough to "pass" on. This is what the quiz-compend urge, and the students largely have accepted the advice. Indeed, urged by the hurried overwork, all they wish is facts with the illustrations to make them more easily remembered, and with a minimum of theory to make them understood. They are disciples of "Gradgrind." For the most part small interest do they take in well-founded hypotheses as yet unproved; it seems to many of them worse than a waste of precious time to study that productive mass of scientific and philosophic theory which alone makes medicine a profession full of the realities of life rather than the art of a manual trade. For these the average student thinks he has no time, since he knows that the technical facts are so numerous that relatively few matriculates have amassed even a moderate store. "Give us facts" they think, "for facts are tradeable for dollars if we have good luck, and they are practical and practicable; we would like, indeed, to know the theory of everything, and to understand it, but we haven't time." They largely seek medical knowledge, and not that better medical wisdom which feels and understands. If such is the average student's viewpoint (and is it not?), is the student at fault? The examinations tend to the same result of hurry and worry and unrelated systems of facts undignified by that broad viewing of things which should enlighten the student days of every medical candidate. What do many, too many, medical students wish even their facts for if not that with them as a sort of legalized "crib" on the sulci of their brains they may pass the dreaded "exams,"

and later on have fair warrant for the collection of their fees?

Besides this most unscholarly and sordid sense of hurry and of a desire for little else than marketable facts, many medical students deplore the mechanical nature of most curricula and this tends ever to force him to the average product's form rather than to develop that in him which he could best do. Sexual differences in the coeducational colleges get no consideration, nor the differences in the students due to various ages; still less does any course consider yet individual differences proper. To develop a medical course which shall take cognizance of this fundamental variety of individuals is a problem of the future, as it is in every other branch of human education. In the three-year or four-year course there can be no opportunity for adjustment even as basal as are these. This is no plea that specialism should begin in the medical school course, nor even a suggestion that specialism seems beneficial at all. Far from it. It is not what any student would become in practice that concerns us in this criticism, but only what he empirically is as a student, namely, an individual different from every other in his college and perhaps in fundamental respects the very opposite of some. Educators cannot remember too often that the "type," biologically, despite its usefulness in description, is a myth, an "idol of the theater," which the less it dominates any system of education the better for that system's success. Without discussing here the sexual differences in medical students (for our medical colleges for women are relatively few), we may note as the individual differences which chiefly concern us in this regard the great differences in manual aptitude and skill, and the diversity, certainly not less marked, in the individual capabilities of understanding relations, *i. e.*, in "common sense." With rapidly increasing force does the former consideration affect medical pedagogics, for the need of mechanical interest and skill increases rapidly with the development of elaborate laboratory courses and of many ever more complicated instruments of diagnosis and treatment. The latter circumstance, the individual differences in understanding, is of course a universal consideration, but it concerns no field more vitally than that of medical education. The average medical student feels he is unduly constrained in some direction or directions, and that his faculties would develop better and more broadly if given their own bent to some extent, and especially, perhaps, if he did not have to keep pace in all respects, particularly speed, with his better, or at least differently, endowed neighbor.

A fourth feeling occasionally observed to exist among medical matriculates, is that of a general unfitness for the work of the profession they have begun. This usually manifests itself in an indifference if not a positive dislike for medical art and science in some or other of their branches. Of these students many naturally drop out of the race before the time of graduation, commonly at the end of the first year or of the second; others persist for one reason or another and finally graduate. It cannot be doubted that from the number of these, misplaced in the occupation, many of the low-standard physicians come, for, uninterested in legitimate practice as a scientific pursuit, they naturally turn to one or more of the various degenerate excrescences of the profession. A moderate amount of personal attention to these while yet students would either afford them the needful interest in their work; adapt them to it, each according to his need and inclination; or show him very early in his course the mistake in his choice of a life pursuit, and so cause his withdrawal from it.

If these may fairly be claimed as feelings or opinions common among the students of our hundred and fifty-odd medical schools, there are other impressions which occur sometimes to their instructors. For example, the teacher of one of the fundamental sciences at the base of medicine is apt to be almost discouraged when he realizes how little of what every physician should know (and that before he attends his first serious case) the schools are able really to impress upon him as a student. The old practitioner, white-haired in the service of the suffering, knows that the same principle obtains in regard to the medical course as a whole; he knows what medical education really is, feeling strongly that it has been his experience of practice, and not his brief study in the medical school that has

taught him what (relatively) little he knows about normal and diseased humanity. This is the sort of man who best realizes the complexity of animal, and especially of human, life, for he has been taught by repeated baffling and phenomena quite unexplained that science still is young, however long has been the evolution of mankind. He it is who knows the utter inadequacy of even the best and longest medical curriculums today to educate the student to practise. The instructor also must be aware that however elaborate and numerous his illustrated lectures, however detailed and severe the recitations on the textbook, however long the laboratory work may continue, hurrying through as much practical work as possible, still that he has furnished to the student only a foundation on which he may build, if he care to do so, from the literature of the subject and from his experience; it is a mere syllabus of his one branch of instruction. Were this a question of general culture merely, or say of mining engineering, or even of theology, it would not matter so much, for the chance would be relatively slight that life and death would hang upon the knowledge or the ignorance of a given fact or principle. In medicine it is far different, for every added principle or bit of understanding, or of skill, or every fact that the physician knows may mean directly the saving some time or other of a human life or of useful years of happiness. The student rarely appreciates this serious side of the profession of medicine before his graduation (it comes to him soon enough afterward!) and he loses thereby one of the strongest incentives he could possibly have to thoughtful and conscientious work with brain and hand. The average medical student is not apt to rise to the importance, the responsibility, the dignity of his profession—he is never taught it—the curriculum affords no time! But it is just then, and usually only then, that a feeling of this dignity (made up of privilege and responsibility) would be of benefit in urging to him the necessity of fitness to the limit of his powers.

In another direction, but one of vast importance to the welfare of the profession, an instructor in a medical college has impressions once in a while and sees them corroborated oftener in the public press and in the executive committee meetings of the medical societies. Every medical school has students from time to time who are morally not fit to be physicians, to have the privileges, and especially the opportunities for evil, of the practitioner. The medical faculties in general scarcely rise to their responsibilities in this respect; they find no time in the course for personal acquaintance with the students, but are glad to shift responsibility of this sort on the clergymen or the physicians who present their signatures on the printed certificates of "good moral character." This is not a sentimental matter altogether, it has commonplace professional dignity behind it. The profession is disgraced alike in public opinion by the shame-faced abortionist, or worse, down to that lesser but not less wrong offense of advocating antivaccination in an epidemic of smallpox or of carrying a neuropathic zöophily to the stage of publicly advocating discontinuance of the production of antitoxins and the abolition of all animal experimentation. To pick out the morally defective from a class of students without much more than the present amount of personal instruction and familiarity, is of course impossible in its literal sense, but it is certain that were there time and arrangements made much of both public and professional good might be done in this direction in keeping responsibility from the irresponsible, and opportunity for crime from those who would probably use it, despite their Hippocratic oath. In this direction we see another argument favoring a degree of more leisurely personal supervision of medical students.

Another thing many medical instructors sadly miss is opportunity for research, and time for a degree of what one might call more medical culture. In the hurried rush of our present methods these are practically out of the question to the mass of the medical faculties. So exacting and interesting are most researches (especially to their performers) that they who do "original work" neglect their teaching duties more or less, while usually those who are good and conscientious teachers have no time for production. Thus the interests of the students in our present system and the advance of medical science are at variance, which should not be the case.

If one were to suggest the cause underlying these various

unwholesome conditions in present medical education no other word would probably express and explain so much as *hurry*. The keynote of our recent American life generally, this "motif," has gradually crept into and dominated even the instruction of those whom we would engage to save the very lives of our children and of ourselves. It matters little if the theologian missed from his seminary course a portion of the ages' dogma; it matters less if the lawyer has been denied access to some hundreds of cases, perhaps, which might had he known of them have saved him a client or two. But it does matter if the physician, final arbiter oftentimes of important issues in a scale of values which have no equals, gets less of information, of experience, of medical culture than he might obtain. Of all places the medical course is the last where there should be injurious haste, or mechanical instruction, or superficial practical, that is, clinical observation. Only one of these probable failings seems necessary in the present order of medical pedagogics, but on that one the others chiefly depend, and were that one remedied the others would quickly right themselves, so sound is the educational theory of our colleges today. That one is "hurry." It is the leading thesis of this paper that medical students need more time in which to fit themselves for the responsibilities of practice. Given this time some things would improve which now are the source of complaint from the student, his instructors, the physician, and the public. Give the students time to develop into practitioners. Give their instructors a chance, thereby, to get at them individually, that each may be accommodated to his needs, be given some degree at least of medical culture, absorb something of the dignity and responsibility of our ancient but ever renewed profession. So will the "good old times" of the personal preceptor in part come back again into the tremendously efficient system of our modern schools. In a word, it is high time that medical educators made an effort, as the physician of old made it, to develop in the future practitioners of the land a degree of individuality involving the careful learning and wisdom of the cultured and responsible gentleman.

That to materially lengthen the course for the degree of doctor of medicine beyond its present maximum is both necessary and expedient is our contention. We have already offered certain considerations showing that it is in general terms necessary; let us now more briefly discuss the arguments for its expediency. What changes in the economics of medical affairs would this further step in the successful progress of individual education bring about? First let us consider the financial relations of the question both as concerns the schools and the practitioners. Were the course increased from four years to say six, the annual tuition fee would have to be greatly increased or the schools would cease to be what they now are, self-supporting institutions, because at first the number of students might decrease markedly. But this is more or less problematic because it is certain that the college first making this obviously great advance would attract that large fraction of candidates who always wish the best on the sound business principle that, other things equal, the best is really the cheapest. The same consideration applies to the decrease in students, which many would anticipate because of the lengthened course aside from the increased money expenditure. Experience in this matter has shown that the best schools have the most students. The reliable common sense of the public has never been at fault in these directions and more of the best schools today are troubled by too many students than are worried by too few. Indeed, this is one of the arguments in favor of lengthening the time requirement—it might decrease the number of students and of graduates; as we have suggested already, however, it might not do so after two or three years.

If any one complains that to raise the fees of the medical schools will shut out many promising young men from the profession because of their lack of funds one may confidently answer that this fear is theoretic and not liable to be justified. College experience constantly shows that the best students, those excelling in moral, mental, and physical strength, are often the poorest. Such material only is adequate to supply the medical profession. The strong ambitious man dependent on his immediate productivity for living and college expenses is not going to be debarred from studying his chosen profession

by a thousand dollars added to his educational expenditure. The unambitious poor man medicine does not wish any more than it desires the unambitious rich man. Ambitious strength should be the criterion and given this minor obstacle are no bar. Yet, other things being equal, the son or the daughter of the well-to-do family makes a better physician than does the child of poor parents, and simply because his equipment for living, and especially his general culture, has been on a more liberal scale. For many, then, and those of the *a priori* best grade, the raising of the fees, and the extension of the years of the course would be relatively unimportant. Thus, apparently for the strong and ambitious poor man and for the well-to-do the added monetary expense would be far from disadvantageous, and these are the classes the profession needs.

The impression is widespread that the public welfare could get along with considerably fewer physicians. If then, making the medical course more costly and harder did reduce somewhat the graduate output for a few years the public would not suffer, while present practitioners would considerably benefit both in income and in experience. It would be a fair presumption, however, that the output would not materially decrease, for this has been the lesson of similar steps in the evolution of our present serviceable system.

Whether or not the supply of physicians decreased or increased, their *quality*, that is, their standards of attainment, of responsibility, of general usefulness in any community, would inevitably improve were they compelled to devote six years to preparation for public service, provided (as would doubtless occur) the additional time were devoted to educating influences and instruction practically lacking now. All through the course it would give opportunity for a thoroughness and a necessary culture due man's one profession of life and death.

The present agitation in favor of a three-year or of a two-year academic course such as President Butler, of Columbia, is said to support, bears importantly on the general proposition of this article, but it does not and cannot solve the situation. So far as we have plead for a higher standard of culture and of dignity in the just-graduated physician the "elevation" of medical schools to graduate schools would certainly solve the problem. Students who have the privileges of a bachelor course have a far wider and a far deeper understanding of things in general, of the proper values expressed in the term physician among the rest. But aside from this, because mainly of the high technicality of medical science, the college course, whether two or four years, has less to offer the expectant medical doctor than one might suppose; little indeed in the way of professional knowledge of a practical sort, although very much in the direction of psychophysical training for attacking the vast problems of medicine.

Whether or not the general adoption by medical schools of entrance requirements equal to a college education would raise the standard of the profession is after all beside the question, and for the reason that such general adoption is altogether improbable within a moderate length of time. Many youths have a predilection and a talent or a genius for medicine and surgery to whom a general college course would be tedious; the history of medicine points to many examples of this tendency, and one sees it today repeatedly, youths who have brought themselves up eager for this profession as a life-pursuit. Practical considerations appeal strongly to others, perhaps unduly for the general good, causing them to enter the medical schools as soon as they can possibly get in, with the intention, of course, of becoming self-supporting at the earliest possible day. Discouragement should meet this general attitude toward the profession of medicine, and the medical colleges can best provide it, and to their own benefit.

One cannot deprecate too strongly that often expressed feeling of regret that "our young men in the professions do not become self-supporting before the age of thirty." This is but part and parcel of that same commercial tendency previously deplored which wishes to make of the practice of medicine a means of wealth-getting and of an easy livelihood even to the inexperienced youth—at what expense of health and, at times, of life the victims only know. It has long been a scandal of the ministry that this tendency may be seen there, too, occa-

sionally; the times seem ripe that this should be deemed scandalous in medicine as well. It is not the mass of the practitioners of medicine that merit any such reproach, for few physicians indeed in middle life in one's acquaintance value their fees above their humanitarian and scientific interest in their life work. Provided with a competence for himself and his family, the average practitioner is content. It is the educationists looking too constantly with the eyes of the economist who deplore so frequently the late independence of the young professional man, and they do it at the expense of true philanthropy. A sufficient number of competent physicians is what the public good demands, and not, with short-sighted economy, an ever-increasing multitude of men self-supporting in their early twenties at the expense of their ill-served patients. Medicine demands the best of our manly and womanly intelligence, and loses caste when it allows its priceless knowledge and traditional dignity to become so cheap in time and money, the acquirement of an unchosen multitude of youth who see in medicine and surgery only a trade to be learned. It is going backward several centuries to the days of the barber-surgeon and the medical-apothecary, quite ignoring that earlier period, happier for the dignity of the profession which wars with death and pain, when the monk from the monastery practised medicine for the love of God and of man.

It is due the profession, not less than the public, that the average medical man should not be too early a successful money-getter. This is not a fault of the times, but rather one of the times' ways of expressing the proposition that professional men are manufactured too cheaply, and that a better fitness than heretofore is required to serve the public well. Medicine advances apace, far faster than does the system by which, alone, men and women may acquire acquaintance with it that they may serve mankind. The commercially-minded and cheaply-made practitioner of medicine is a public menace, when the physician should be society's most indispensable and wisest counselor and man's best friend. These he certainly is already in large part and will be, and yet it sometimes seems that he does not always rise to the achievement of his high privilege.

County Commissioners to Establish General Hospitals.—A bill has been introduced into the Indiana Legislature which gives a county commissioner authority to build, equip, and maintain general hospitals with or without the cooperation of private hospital associations. In case such an association does not exist, the commissioner is authorized to receive donations, legacies, etc., to maintain the institution. However, when an association does exist the governing board of such association will control the hospital and may select its own officers to govern it. Indigent patients are to be taken care of at public expense, while private patients will be charged the usual rates obtained in first-class hospitals. The cost of maintaining such an institution, over and above amounts received from private sources, is to be borne by the county.

Serum Treatment of Typhoid Fever.—The *Lancet* is authority for the following: "Sporadic cases of typhoid fever still occur every winter in Cairo and Alexandria, generally in English families where the greatest precautions are taken to prevent it. The water can hardly be the cause, but it is fair to suspect the milk-supply because the dairies are not yet under any government supervision. Professor Chantemesse, of Paris, during his recent visit to Cairo, drew the attention of physicians here to his method of treating the disease by anti-typhoid serum. He compared 1,478 cases treated in 15 Paris hospitals during the last two years by cold bathing and ordinary symptomatic treatment, which gave a mortality of 19.3%, with 186 cases treated at his hospital during the same time with only 3.7% of deaths. The only difference in the treatment was that he used serum in addition to cold bathing and other means. The serum does not, however, prevent perforation, for death occurred in three of his cases from this complication. He is extremely anxious to inaugurate one necessary reform in Paris, which he was pleased to find already existing in Cairo, that typhoid fever cases should be treated in special wards and not in general wards with too careless disinfection of excreta. Dr. T. Courmont, of Lyons, claims to have discovered the bacillus of Eberth in the blood of typhoid fever patients, even when the Widal reaction is not positive. In 33 cases he has now found it at times varying from the fifth day to the twentieth day, but he has never found it in any patient later than the third week. The method is simplicity itself, a culture is made of from 2 cc. to 4 cc. of suspected blood in from 300 cc. to 500 cc. of broth. A positive report can generally be given in 24 or 48 hours, but it is not safe to give a negative report until the fifth day of the culture."

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

April 4, 1903. [Vol. XL, No. 14.]

1. Fractures Into and About the Elbow-joint. J. HENRY BARBAT.
2. A Case of Successful Removal of An Enlarged Spleen, With Twisted Pedicle Adherent to the Right Side of the Pelvis, in a Woman Presenting Multiple Nodulation and Pigmentation of the Skin. J. CLARENCE WEBSTER. With Remarks on the Medical Aspects of the Case. THEODORE TIEKEN.
3. A Few Practical Points in the Technic of Nephrorrhaphy and Herniotomy, and a New Modification of Alexander's Operation. F. P. CANAC-MARQUIS.
4. The Mosquito as a Carrier of Disease. J. STEBBINS KING.
5. The Bacteriology of Cystitis. R. C. LONGFELLOW.
6. Gastrointestinal Perforations and Their Diagnosis. F. GREGORY CONNELL. (Concluded from p. 833.)
7. Primary Endothelioma of the Gallbladder. WILHELM BECKER.
8. The Operative Treatment of Cystocele and Procidencia Uteri. E. C. DUDLEY.
9. Progressive Bulbar Paralysis. ALFRED C. COTTON.

1.—Fractures Into and About the Elbow-joint.—J. H. Barbat calls attention to the importance of a knowledge of the development in children of the ends of the bones involved. The Röntgen rays show the ossific center as a rule one year sooner than the date given in textbooks. Diagnosis of fractures cannot be accurately made without the Röntgen rays, and in this location the parts must be exactly approximated. The skiagraphs must be made in two places, with the arm extended and the two condyles on the same plane as the plate in one, at right angles with the arm flexed in the other. In those under 18 years of age pictures of the sound as well as of the affected side must be taken. It may be difficult to tell whether there has been dislocation of one of the epiphyses by either palpation or x-ray if there is no deformity. In these cases it is better to keep the arm splinted for two weeks if the child complains of pain or shows a disinclination to use it. Fractures of the olecranon are best treated by driving a long wire nail through the tip of the process down into the shaft of the bone without cutting if the fragment can be adjusted and there is no blood between the pieces. Steel staples may be used for broken off condyles, one prong in the shaft, one in the fragment. In cancellous bones, previous drilling is not necessary. [H.M.]

3.—Points in Nephrorrhaphy and Herniotomy.—F. P. Canac-Marquis, after incising the capsule of the kidney, passes a continuous silkwormgut suture down along each side, the ends entering and emerging through the skin at a distance from the incision. By pulling these taut the capsule is drawn apart, exposing a raw surface. The muscles are drawn over this surface by two or more figure-of-eight sutures, entering through skin and fat, crossing over and taking in all the muscles of the opposite side, then recrossing over the surface of the kidney to take the muscles of the side whence the suture started, recrossing again and taking in the fat and skin of the opposite side. A lead nickel-plated shield is threaded and shot and the shot crushed on the sutures. The "hooks" of Dr. Michel serve to make linear apposition of the skin. On the twelfth to fifteenth day the shot and shields are removed, leaving the sutures to loosen by the respiratory movements, so as to avoid pain or breaking in the final removal a few days after. In hernia, after freeing the sac, a continuous suture is inserted at the neck, following around the contour to the opposite side. A second suture is passed through the fundus. A Doyen needle is inserted 4 cm. above the pillars of the inguinal canal and 3 cm. internal, passing through skin, fascia, and muscles, and guided by the finger to the incision. The first suture is threaded to this and carried out at the point where the needle entered. The other end of it is carried out 1.5 cm. external to the first; 3 cm. external to the last point the second suture is carried out in a similar manner. When drawn taut the hernial sac is thus held between the parietal peritoneum and abdominal wall, making a bulwark above the ring. The wound is closed by the figure-of-eight sutures already described. The author also pictures an operation for shortening the round ligaments in which the inguinal ring and canal are sutured by means of the ligament itself. [H.M.]

4.—The Mosquito as a Carrier of Disease.—J. S. King thinks the experiments conducted in Cuba by the board for the "Study of the Etiology and Prevention of Yellow Fever" insufficient to warrant some of their conclusions, as the non-

immunes who escaped contagion from fomites prove no more than the nonimmunes who fail to develop the disease after being bitten by culex mosquitos which have been in contact with the diseased. All who are exposed to yellow fever do not take it, which is true of other infectious and contagious diseases. The mosquito theory does not adequately explain the erratic movements in infected districts, neither does it account for the transmission of malaria over the vast prairies and bottom lands of our rivers in former times. [H.M.]

6.—See *American Medicine*, Vol. III, No. 25, p. 1039.

7.—See *American Medicine*, Vol. III, No. 25, p. 1063.

8.—Operative Treatment of Cystocele and Procidencia Uteri.—E. C. Dudley describes these operations almost entirely by references to the illustrations. He figures two crescentic denudations on the lateral vaginal walls which he sutures in a direction perpendicular to their length, thus drawing the cervix backward toward the hollow of the sacrum. He makes an incision in the anterior wall extending from the cervix to the urethra, stripping the edges from the vesical wall by sponge pressure and removing the loose flaps with scissors, the edges being then united. The redundant vaginal wall near the urethra is best disposed of by uniting that part of the wound in a transverse direction, making the whole T-shaped when completed. These operations must be supplemented by a perineorrhaphy. In extreme relaxation of the pelvic floor he denudes around the front and sides of the cervix, drawing the posterior ends of the denuded area forward in order to bring the loose tissue on each side in front of the cervix, thus forcing the latter into the hollow of the sacrum. [H.M.]

9.—See *American Medicine*, Vol. III, No. 25, p. 1049.

Boston Medical and Surgical Journal.

April 2, 1903. [Vol. CXLVIII, No. 14.]

1. The Clinical Significance of Arteriosclerosis. REGINALD H. FITZ.
2. Cesarean Section for Placenta Prævia, with Report of a Case. P. E. TRUESDALE.
3. Further Remarks on the Treatment of Placenta Prævia. FRANK A. HIGGINS.
4. Notes on X-light. WILLIAM ROLLINS.

1.—Arteriosclerosis.—R. H. Fitz considers it convenient to consider this affliction in its relation to the three groups of arteries, viz., central, peripheral and visceral. In central arteriosclerosis, in which are affected the aorta and its larger primary branches, excepting those of the heart and kidneys, the diagnosis depends on the age and the examination of the branches. Although most people over 50 have more or less aortic arteriosclerosis, there are numerous exceptions, and youthful individuals may have the disease. In peripheral arteriosclerosis the physical examination of the accessible arteries leads to diagnosis, although the evidence of an enfeebled circulation is usually furnished by the sense of discomfort—even severe pain and numbness in the extremities, and by the rapidly induced fatigue and cramps in individual muscles or muscular groups. The diagnosis of visceral arteriosclerosis depends upon the recognition of the various disturbances of function and the discovery of evidence of central or peripheral arteriosclerosis. [A.B.C.]

2.—Cesarean Section for Placenta Prævia.—P. E. Truesdale, from a comparison of many statistics, finds in complete placenta prævia an average mortality of 18.9%, and fetal mortality between 65% and 70%. It is this high mortality which it is aimed to reduce by cesarean section. In partial placenta prævia the maternal mortality by version scarcely exceeds 5%, but in obtaining this half the babies are sacrificed by obstruction of the circulation through the placenta and slow extraction; and the question arises cannot this fetal mortality be reduced by cesarean section without materially increasing the death of mothers? He says lateral insertion of itself does not justify a cesarean section. As a rule, simply rupturing the membrane suffices to stop hemorrhage, but cesarean operation would seem to be the best treatment for placenta prævia, complete or partial, when the child is viable, and when the diameters of the pelvis or the conditions of the soft parts render the operation of dilation and version, performed with sufficient rapidity to save the child, a dangerous procedure for the mother. [W.K.]

3.—Treatment of Placenta Prævia.—F. A. Higgins reports five cases of placenta prævia, in which all the mothers made good recoveries and the infants were born dead or died soon after. In only one case was there any possible chance for the child's life, and he had proceeded in all with the one aim of making the operation as absolutely safe for the mother as possible. Brief sketches of the cases are given, from which the writer is more than ever convinced of the comparatively low maternal mortality, even in complete prævia, when the patient is taken in charge and receives proper treatment immediately after the first hemorrhage, and that the chief danger lies in repeated or continuous hemorrhages. The great objection to slow extraction is that it means the death of the fetus, but until we have some other expedient equally safe for the mother we shall continue to advocate and practise this method. Perforating the placenta to do version he has found to be an easy matter, causing no maternal hemorrhage and very little to the fetus. He has yet to see a case in which he would think cesarean section advisable or justified; and he thinks the only occasion for it is complete placenta prævia with mother and child both in good condition, before the occurrence of severe hemorrhage, and with the os uteri undilated. Higgins also reports the case of a young primipara in which there had been considerable hemorrhage, but the fetus was at term and in good condition, os dilated two inches and completely covered by placenta. He judged the mother would stand immediate delivery; version was performed with immediate extraction and a living child obtained, but the mother died from shock and hemorrhage. This he attributes to an error in judging the patient's condition, and thinks he could have saved her life by slow extraction, sacrificing the child. [W.K.]

Medical Record.

April 4, 1903. [Vol. 63, No. 14.]

1. Observations on the Plague in the Philippines and India. Major CHARLES B. EWING.
2. Imperative Conceptions: A Study in Differential Diagnosis. L. HARRISON METTLER.
3. Examination of Milk by the General Practitioner. HENRY LARNED KEITH SHAW.

1.—The Plague.—C. B. Ewing was able to detect the bacillus pestis in the blood of only about 3% of cases when the examination was made at all early in the disease, but growing the blood on culture media gave positive results in some 30 cases in which it was impossible to determine its presence by staining blood smears. It was found in the blood in 90% of cases just before death. After continued suppuration for several days the organism ceased to be found in the buboes. Most Filipinos have enlargement of the glands, which must not be confounded with that due to plague. He found polymorphonuclear leukocytosis in all the 50 cases examined. This and the increase in blood plaques serve to distinguish the disease from malaria and typhoid. The writer discusses the bacteriology and types of the disease, the method of making Haffkine's prophylactic and the preventive and curative serum of Yersin-Roux. He does not consider Lustig's vaccine and serum as efficacious as the latter. Other treatment is symptomatic. Mortality is modified by hygienic surroundings and is greater among the Chinese than Filipinos, the latter being less dirty. Among Orientals ignorance, religion and caste tend to swell the large mortality list. [H.M.]

2.—Imperative Conceptions.—According to L. H. Mettler, the general practitioner should be well acquainted with this symptom of nervous debility, for he will see it in many patients not affected enough to require consultation with a specialist. A sharp distinction must be made between the imperative conceptions of the sane and insane. In the former the judgment is unimpaired. Insane delusions rule the patient; imperative conceptions can be at times controlled by him. Hallucinations and illusions rarely, if ever, bear directly upon the imperative conceptions of the sane; volition is free, while it is enthralled by insane delusions. Imperative conceptions of the sane do not lead to the taking of life. They may be a forewarning of mental breakdown, but are not necessarily indicative of existing insanity. A neurasthenic may be reasoned with about his fixed ideas; a victim of insanity may show only irritability

and disgust at your doubt in regard to his delusions. Treatment for the eradication of these imperative conceptions is both medical and disciplinary. Every organ in the body should be carefully interrogated. Insane delusions are the result of a diseased cortex; imperative conceptions are the result generally of disease outside the brain. Medicinal treatment alone will not avail with some patients. The habit once formed is hard to get rid of. They need advice frequently as to the character of their reading, studies in art, scientific amusements, etc. [H.M.]

3.—Examination of Milk.—H. L. K. Shaw writes with the purpose of outlining a rapid and simple method of examining either human or cow's milk. For analyzing mother's milk the whole quantity should be removed from the breast. Cow's milk should be well mixed. Milk containing many bacteria will have a high acidity. He describes easy tests for the percentage of acidity, for specific gravity, discussing its relation to the amount of cream and of watering, and tests for the percentage of fat, and gives a formula for the calculation of milk solids and a method of detecting formaldehyd. [H.M.]

New York Medical Journal.

March 28, 1903. [Vol. LXXVII, No. 13.]

1. Syphilitic Pseudotabes. Report of a Case; the Differential Diagnosis of Tabes. JOSEPH COLLINS.
2. Streptococcus and Staphylococcus Bronchitis. JOSEPH M. PATTON.
3. Intestinal Resection and End-to-end Anastomosis with the O'Hara Forceps in a Case of Tuboovarian Abscess with Appendicitis: Recovery. GEORGE GRAY WARD.
4. The Special Dispensary as a Factor in the Combat of Tuberculosis as a Disease of the Masses. S. A. KNOPF.
5. Opium in Surgery. EDWARD WALLACE LEE.
6. Retinoscopy. DANIEL H. WIENSER.
7. On the General Characteristics of Corneal Astigmatism. H. DAVISON SARIL.

2.—Streptococcus and Staphylococcus Bronchitis.—J. M. Patton discusses bacterial bronchitis, and presents three case histories in illustration and support of the occurrence of a form of bronchitis due to infection by streptococci or staphylococci or both, and probably primary, which exhibit more or less characteristic clinical features, and in some cases simulate the early clinical features of tuberculous infection. The cases observed by Patton in which staphylococci appeared to be the chief or only causative agent, as a rule, have shown a tendency to chronicity, mild type, scanty expectoration, persistent cough, and at times dyspnea of an asthmatic character. The cases due to streptococcus infection have shown the most definite clinical features. These are: A persistent and rather high temperature; a more or less generalized bronchial involvement presenting marked physical signs of bronchitis; a persistent and troublesome cough; rather free expectoration of heavy mucopurulent sputum, occasionally tinged with blood; occasional night-sweats; moderate rapidity of pulse; and aside from the disturbance from cough, a freedom from subjective discomfort rather suggestive in relation to the continuous, and at times, high temperature. Bronchitis may result from pneumococcus infection and be local in extent, moderately severe or mild in type, and with little disposition to extend. The most satisfactory results were obtained through tonics and alterative expectorants and the employment of soothing and stimulating local medication by deep inhalation. [C.A.O.]

3.—Intestinal Anastomosis with O'Hara Forceps.—G. G. Ward reports a case of successful intestinal resection and end-to-end anastomosis with the O'Hara forceps in a case of tuboovarian abscess with appendicitis in a woman of 26. Some of the advantages claimed for this forceps are: 1. One forceps only is required for any size of intestine. 2. It is not necessary to ligate or clamp the bowel as with the button or other methods as the forceps keeps the intestine closed at the site of the resection throughout the operation. 3. No manipulation or work inside the bowel is done, so that the advantage of cleanliness is one of the strongest points in its favor. 4. Perfect control of the work, the slippery intestines being held with great ease and allowing accuracy of suturing. 5. Its application is simple. [C.A.O.]

4.—Dispensary for Tuberculosis.—S. A. Knopf gives cuts showing the general plan and the entrance of the Emile Roux Dispensary at Lille, and puts in an earnest plea for special dispensary classes, or, better yet, specially constructed dispensary

buildings in our large cities for indigent ambulatory tuberculous patients. Such dispensaries would serve admirably as clearing houses from whence cases most suitable for other institutions could be selected, early cases that cannot find accommodation in existing sanatoriums could be cared for. They should serve to the patients who have left sanatoriums improved or with the disease arrested as a safe place to go to, not only in case of a relapse, but also to receive competent advice and guidance whenever necessary. [C.A.O.]

5.—Opium in Surgery.—E. W. Lee believes that opium and its alkaloids have a definite place in surgical therapeutics, and maintains that it is the injudicious use of this powerful therapeutic agent that has brought it into disrepute. He states that morphin is especially indicated in fractures, and that morphin hypodermically or opium by rectal suppository will often relieve spasmodic contraction of the vesical sphincter when catheterization is not only painful, but almost impossible. It is indicated in burns and is the first remedy indicated in traumatic or surgical shock if accompanied by pain or hemorrhage. It not only controls the existence of shock, but is a very potent factor in preventing secondary shock. The author's observations on opium habitues tend to disprove the assertion that the administration of morphin prevents the healing of tissue. Morphin hypodermically is indicated before the administration of anesthetics. Especially is this true if the individual is addicted to alcoholic stimulants and suffering from fever and nervousness. Obstinate and exhausting vomiting after ether or chloroform is often relieved by morphin given hypodermically, and if in the first 24 hours after operation pain becomes so severe as to cause uncontrollable restlessness this pain should be relieved by morphin. In abdominal surgery the administration of morphin should be attended with great caution and its effects closely watched, but it should not be withheld when by its proper use great relief and benefit may be gained. [C.A.O.]

6.—Retinoscopy.—D. H. Wiesner says that while the retinoscope is an accurate test of the refractive conditions of the eye, with slight exceptions, and while it is possible to measure the amount of error with the mirror and the plus and minus lenses it must never be the sole test for the prescribing of correcting lenses, but this in combination with the ophthalmoscope, the ophthalmometer, and the test lenses must determine the true correction. The purpose of this paper is to draw attention to the fact that in retinoscopy the physician who is not a specialist in ocular conditions has a test that, with some patience and practice, he can acquire skill enough to determine the refractive errors present in the case under examination. [A.B.C.]

7.—Corneal Astigmatism.—H. D. Saril regards astigmatism symptomatically and prescribes glasses accordingly. If the error is the cause of marked indistinctness of vision or causes regularly attendant asthenopia, lenses should be worn constantly. Should there be inconvenience, particularly when studying, reading, or using the eyes for near work, with approximately normal vision, glasses should be used only at such times. For the intermediate cases careful judgment is required. The patient's ocular comfort is the main criterion in determining the strength of the lenses. The full correction always harbors on the side of danger, with the result that the intended improvement proves as fatiguing as did the error uncorrected. Under correction in the myopic form and less than the full correction of the manifest error in the hyperopic variety is to be aimed at. [A.B.C.]

Medical News.

April 4, 1903. [Vol. 82, No. 14.]

1. The Significance of Variations in the Internal Secretions. O. T. OSBORNE.
2. The Significance of Oxaluria. J. BERGEN OGDEN.
3. The Prognostic Value of the Diazo-reaction in Pulmonary Tuberculosis. FRANCIS CARTER WOOD.
4. Hyperacidity of the Urine. T. W. HASTINGS.
5. The Prognostic Significance of Albumin in the Urine. EDWARD W. LAMBERT.
6. Narcotic Abuse and the Public Weal. J. B. MATTISON.
7. The Results of Intravenous Injections of Dilute Formalin Solution in Septicemic Rabbits. WM. H. PARK and WM. A. PAYNE.
8. Expert Evidence: A Reply to Hon. John Woodward. WILLIAM LEE HOWARD.

1.—Internal Secretions.—O. T. Osborne has found thyroid one of the best treatments in scaly eczemas, the secretion of this gland seeming to control the softness and pliability of the skin. With atrophy of the gland between 45 and 50 the skin changes of old age begin, also endarteritis leading to atheroma. It relieves conditions due to high tension. In the opposite condition resulting from shock suprarenal hypodermically is indicated. The condition in the last stage of opium poisoning suggests its use as also the vasomotor ataxia of neurasthenia. The writer thinks the manifestations of hysteria may be due to misbehavior of the thyroid. In delayed menstruation with or without anemia he has found no drug so efficient. He has seen children with flabby skin, dull features, chronic eczemas, erosions and fissures, and enlarged cervical glands do better on thyroid than anything else. In diabetes suprarenal has diminished the glucose, diacetic acid, acetone and ammonia. Hyperthyroid feeding in Graves' disease has caused glycosuria. In gout thyroid not only relieves but is preventive. The headaches of acromegaly are relieved by pituitary feeding. Thymus, containing a large amount of nuclein, is valuable in tuberculosis. Theoretically it is indicated in hemophilia, scurvy and rickets. Osborne presents a case whose history strengthens the belief that red bone marrow produces red corpuscles and that feeding it will supply a deficiency in the latter. [H.M.]

2.—Significance of Oxaluria.—J. B. Ogden states that oxalic acid is a normal constituent of the urine to the extent of 0.02 gram in 24 hours. It exists in combination with calcium as calcium oxalate, which normally is held in solution by the monosodic acid phosphate. If the calcium oxalate is excessive it is precipitated from solution in the crystal form. Oxaluria may be very transient, or it may persist. Articles of food containing oxalic acid may be responsible for the oxaluria. Among these are sorrel, rhubarb, tomatoes, asparagus, spinach, onions, cabbage, etc. Baldwin has shown experimentally on dogs that the ingestion of meats and a large quantity of cane sugar or glucose caused a pronounced oxaluria. Partial or complete absence of HCl in the gastric juice, acute or subacute gastritis, and fermentative changes in the alimentary tract, are all attended by oxaluria. Indican, a normal urinary constituent, is much increased by fermentative changes in the gastrointestinal tract, which increase the indol, from which indican is elaborated. Such increase in indican is usually attended by oxaluria, and a common cause is probable. Calcium oxalate crystals may be primary—the large octohedral and most of the oval and dumb-bell forms—formed within the body; and the secondary or small crystals of the same form formed after the urine is voided. Mechanically, the crystals may cause irritation and the formation of calculi. [A.B.C.]

3.—Prognostic Value of the Diazo-reaction in Pulmonary Tuberculosis.—F. C. Wood's report is based on examinations and observation in 363 cases, in nearly all of which the tubercle bacilli were found. His conclusions are: 1. If the urine of a phthisic case shows no diazo-reaction and a kidney erosion can be excluded the prognosis is favorable. Only 10% of the moderately severe cases gave the reaction and in a number of these it disappeared on treatment. Early cases do not give the diazo-reaction. 2. If the urine of a phthisic case shows an occasional diazo-reaction the prognosis is not necessarily grave, as only 66% of the patients showing an occasional positive reaction die. 3. If the urine of a phthisic case shows a continuous strong diazo-reaction the prognosis is very grave, since a large proportion of such cases die within six months. 4. The presence of a diazo-reaction on the first examination of a patient should not debar the case from a thorough trial of climatic treatment in a proper sanatorium. [A.B.C.]

4.—Hyperacidity of Urine.—This article, by T. W. Hastings, deals somewhat technically with the chemistry of the acids in the urine. Little, however, is added which is of clinical importance. In his experience the best method of estimating the acidity quantitatively is that recommended by Nægeli, similar to the method for determining the total acidity of the gastric contents, using phenolphthalein as an indicator and titrating with a decinormal solution of sodium hydroxid. The normal acidity of the urine is due to the acid salts of phosphoric

acid. Of 40 patients, in which various diseases were represented, all complaining of disturbance of micturition, an examination shows the urines of 30 to be normal as to acidity. The 10 with hyperacidity suffered no more inconvenience than the others. In 19 cases of urethral and bladder disturbance suggestive of inflammation, no cause other than a neurotic individual and hyperacidity of the urine was found, and relief followed attention to the nervous condition and the administration of alkalis. In 21 cases of neurasthenia, all complaining of disturbance, among other things of micturition, 14 were found to have hyperacidity of the urine, corrected by persistent administration of the alkalis. This suggests a neuropathic origin for hyperacidity in many cases. [A.B.C.]

5.—Prognostic Significance of Albumin in the Urine.—E. W. Lambert expresses his views from the standpoint of a medical examiner for life insurance of many years' experience. He has little faith in the so-called physiologic albuminuria. The albuminuria of adolescence occurring from 17 to 30 is for the most part temporary, and the prognosis is relatively good. The microscope gives less aid to correct prognosis than is commonly supposed, for casts of any variety may occur temporarily and without serious import. Hyaline and granular casts are not infrequent in urine free from albumin. Indicative of the frequent transient character of albuminuria and casts, the author states that experiments made upon members of the medical staff with which he is connected showed it rare for any member to go for six months without transient albuminuria and casts. Prognosis depends more upon the daily life of the individual than upon the findings in the urine. Intemperance in any of its many forms compels a bad prognosis in any case in which albumin appears in the urine, especially after 30, whereas many patients with albumin live for years, the habits of life being corrected. [A.B.C.]

6.—Narcotic Abuse.—J. B. Mattison believes that narcotic inebriety in America is on the wane. There has been a steady decrease of late years in the use of these drugs by medical men. The danger now lies in the lawless sale of many nostrums in which morphin and cocain play the largest part for harm. We need an act making it illegal to sell these alkaloids except on prescription, which is not to be refilled save by order of the attending physician, and another compelling the maker of every nostrum to print the formula on the wrapper, with the amount of cocain and morphin to the dose in those preparations containing the latter. [H.M.]

7.—Formalin Injections in Septicemic Rabbits.—W. H. Park and W. A. Payne find as a result of their experiments that even after large doses of formalin streptococci and pneumococci can still increase in the blood. All the rabbits receiving formalin died before those receiving the streptococci alone. The fatal outcome of septicemia in man after diluted formalin injections should cause us to be guarded in using it. An intravenous injection of water plus sodium chlorid may prove better. [H.M.]

8.—Expert Evidence.—W. L. Howard admits that the medical profession is partly responsible for the present status of expert testimony. Its indifference and the lack of a national educational standard allows unqualified individuals to pose as representatives of progressive medicine. But the attitude of lawyers tends to drive conscientious men away from the courts. Lawyers often demand facts which the medical man considers professional secrets. In some States it has been decided that an unlicensed physician may testify as a medical expert, thus opening the way for osteopaths, Christian scientists, etc., to be pitted against a regular practitioner. It is the long and tangled hypothetical question put to the expert witness that displays the misunderstanding of the lawyers and apparently makes a fool of the doctor. The physician knows it would be possible to establish a reasonable degree of truth were not everything done to prevent it. The expert realizes that he is permitted to know only one side of the question. He should have without reserve the facts from both sides. From the medical viewpoint there is no reason why the experts on both sides should not have a conference and formulate a joint opinion. The methods of "ambulance chasing" lawyers tend to bring into court only those physicians whose opinions can be molded into the attorney's shape. [H.M.]

Philadelphia Medical Journal.

April 4, 1903. [Vol. XI, No. 14.]

1. Movable Right Kidney as a Cause of Pancreatic Diabetes: With a Report of Cases Cured by Nephropexy. SHERMAN THOMSON BROWN.
2. Impressions of Differences in Practice at Low and High Altitudes. WILL H. SWAN.
3. A Critique of the Logical Processes of Medicine. W. B. KONKLE.
4. Subcutaneous Emphysema from Perforation of the Pleura by Extension of Tuberculous Ulceration from the Lung. STARLING LOVING.
5. Mouth Infection, Due to Natural Teeth. D. D. SMITH.

1.—Movable Right Kidney as a Cause of Pancreatic Diabetes.—S. T. Brown details the anatomy of the pancreas and its relationship to surrounding organs, and the role played by a movable right kidney in producing pancreatic diabetes. The following cases are reported: Case I.—Female, aged 23. During the second month of a pregnancy in 1897 she had an attack of malaria, and during the fifth month of this pregnancy was salivated with calomel. This patient in 1902 had 10% or more of sugar in the urine. The amount of urine secreted in 24 hours ran from 20 to 40 ounces. She had a floating right kidney for which nephropexy was performed, resulting in a cure of the diabetes. Case II.—A female, aged 26, whose urine showed large amounts of sugar. Nephropexy was performed upon her right kidney in May, 1902, and no sugar has appeared in the urine since. [F.C.H.]

2.—Impressions of Differences in Practice at Low and High Altitudes.—W. H. Swan gives a detailed list of the answers he has received to questions which he asked of some 392 physicians practicing in the high altitudes of the Western States. The following may be said regarding the high altitudes. The mortality in acute lobar pneumonia is lower; typhoid fever runs a shorter course; the more frequent occurrence and more intractable nature of the functional nervous disorders, with an exception in the case of migraine; chorea is comparatively infrequent and of short duration in Colorado, and the belief that high altitudes has a serious and unfavorable influence on the disease is not justified with facts; debilitated, anemic individuals sleep better than at a lower level; biliousness and digestive disorders are of less frequent occurrence; there are more frequent indications for the salicylates and drugs, which are supposed to aid in the elimination of uric acid; convalescence in general is apt to be more prompt. [F.C.H.]

4.—Subcutaneous Emphysema.—S. Loving details a case of subcutaneous emphysema from perforation of the pleura by extension of tuberculous ulceration from the lung. The patient was a male mulatto, aged 33. He had an attack of pneumonia five years ago. He came under the author's care in January, 1902, at which time the sputum contained a number of staphylococci, but no other specific organisms. The following month the pulmonary lesions had increased, and tubercle bacilli were present in the sputum in large numbers. Six months subsequently, after a prolonged paroxysm of coughing, the patient noticed a swelling in the right armpit, which on the next day had increased and extended inward to the right front of the chest. By the third day the swelling had extended from the axilla and lower border of the clavicle of the right side downward and to the crest of the ilium. There was no change in the respiration, no discoloration of the skin nor pain. The swelling was easily compressible, crackled on pressure, resonant on percussion, and on auscultation yielded a coarse, crepitant rale with both inspiration and expiration. Punctures through the skin allowed air to escape, but did not reduce the swelling. During the next few days the swelling increased in divers directions, even down the right arm to the wrist. Fifteen days subsequent to the development of the subcutaneous emphysema the patient died. At autopsy many small cavities were found in both lungs with pleuritic adhesions, especially upon the right side. In the upper lobe of the right lung, opposite to the fourth interspace, about the center, a cavity an inch in diameter was found, from which ulceration had extended through the adjacent pleura and the chest wall to the subcutaneous connective tissue. The opening was small, and the passage, which was sufficiently large to admit a grooved director, somewhat tortuous. [F.C.H.]

5.—Mouth Infection Due to Natural Teeth.—D. D. Smith firmly believes that relief from mouth infection is to be afforded through dentistry alone. Germicides will not, cannot

accomplish it. There must be positive and frequent removal of all septic conditions of the teeth and all environmental states which promote toxic stagnation and germ culture in the mouth, and a general maintenance of the most perfect state of asepsis for the entire oral cavity. This can be accomplished only through the most skilful manipulation of educated, intelligent dentistry. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN A. O. J. KELLY

REVIEW OF LITERATURE

Peritonitic Pathogenesis of Hepatic Colic and Painful Epigastric Crises.—There exists considerable discordance between the classic picture and the clinical observations of hepatic colic and the explanations given for these contradictions are far from satisfactory. It has been taken for granted that the colic is due to the passage of biliary calculi. R. Tripier and J. Paviot,¹ however, claim that this view is incorrect and that all the symptoms may be referred to a local peritonitis. Their clinical and postmortem observations have led them to the deduction that affections of the abdominal organs only give rise to painful crises when their enveloping peritoneum is acutely or subacutely inflamed and that the pain varies inversely with the amount of liquid exudate. The authors in a previous paper have shown this to be true of appendicular crises and now claim that the same holds good for hepatic colic. The pain of hepatic colic is therefore in their opinion due to a local inflammation of the peritoneum in the region of the liver or gallbladder. The simulation of appendicitis and other inflammations by gallbladder affections is thus easily explained by a propagation toward the appendix or other organs of a peritonitis having origin in the gallbladder. [N.K.]

Aortic Aneurysm of 25 Years' Duration.—This case is reported by J. L. Hirsh and M. C. Robins.² The patient was a man of 62, a bricklayer, who 25 years previously had been struck by a beam over the upper part of the sternum. He was in a hospital for some weeks, when a small lump was found on the right side of the sternum at the second rib. Three years later this had increased slightly in size and was painful. The patient continued at his work until a few weeks before his death, although pressure symptoms from the aneurysm had been quite marked for a period of 18 months. At times a small amount of fluid and occasionally a small fragment of fibrin came through a thin place over the tumor and rupture was feared, but the ulcerated area would then heal for a time. Autopsy showed two perforations of the sternum and an aneurysm the size of a large cocoon, involving the entire ascending and transverse portions of the aorta. Special points of interest in the case are: (1) The long duration, 25 years. The longest previously reported was 16 years; (2) the comparative comfort of the patient, which was due to the aneurysm extending forward and upward, thus exerting little pressure on the esophagus and trachea; (3) the existence of intercurrent diseases—pneumonia and influenza; (4) the symptoms and signs, giving the classical picture of the disease without depriving the patient of his ability to do manual labor up to within a few weeks of his death. [A.G.E.]

Repeated Attacks of Hemiplegia of Uremic Origin.—J. Le Calvé³ reports the case of a man of 45 without syphilitic or alcoholic antecedents who suddenly complained of double vision. The urine was free from albumin and recovery soon followed. Several months later he had a violent attack of migraine with nausea, followed by complete right-sided hemiplegia. At the end of a period varying from a few minutes to half an hour the symptoms of hemiplegia disappeared to recur repeatedly. The urine at this time contained albumin and was greatly reduced in quantity. Under treatment consisting in venesection, drastic purgation, sinapisms to the limbs, absolute milk diet, and graduated hot baths, the patient made a complete recovery. The author considers the hemiplegia uremic in nature, and adopts the mechanicotoxic theory for its explana-

tion, holding that the paralysis was due to a localized edema induced by vasomotor disturbances of toxic origin. [D.R.]

An Analysis of 26 Cases of Mongolism.—J. Muir¹ discusses mongolism from the standpoint of literature, nomenclature, geographic distribution, etiology, symptoms, physical development, prognosis and treatment, and reports 26 cases observed in London and its suburbs. Mongolism he defines as a type of mental feebleness, always congenital in origin, characterized by certain constant cranial, and later by lingual changes. The condition probably exists everywhere, and no white race is exempt. In London it is at least four times as common as cretinism. Tuberculosis of the parents was present in 38% of Muir's cases, and syphilis in 3 of 26. Bad health of the mother during pregnancy occurred in 15 of the series. A valuable bibliography is appended to the article. [A.G.E.]

Position of the Stomach Ascertained by Means of Inflation.—From a series of detailed investigations A. K. Fevert² draws the following conclusions: 1. Inflation of the stomach with small quantities of gas gives the same topographical results as do other methods (percussion combined with auscultation, palpation in regard to splashing sounds, etc.). Nevertheless inflation has advantages of its own; it enables us to ascertain not only the lower but also the right and occasionally the upper border; moreover the empty stomach may be outlined equally well. As emphasized by Michaelis, it is very important to ascertain the right border for the early diagnosis of gastric dilation. 2. Inflation of large quantities of gas displaces the limits of the organ and shows the outline of an artificially distended stomach. This method is invaluable in locating the descended or otherwise displaced organ. 3. When inflated the stomach does not expand uniformly in all directions, the right border shifting more than the lower. [L.J.]

Chronic States of the Circulation Simulating Heart and Kidney Disease.—G. Steel³ calls attention to a class of patients whose symptoms are often misinterpreted. They complain of shortness of breath and ultimately, if neglected, develop dropsy and venous engorgement of the liver. Examination of the heart fails to reveal disease of that organ. The pulse is usually slow and regular—a small pulse with prolongation of the tidal wave. The heart is weak only relatively to its burden. Derangements of metabolism have increased peripheral resistance. Typical cases are met about the climacteric period. In the presence of great venous stasis even large quantities of albumin in the urine with casts do not suffice for the diagnosis of Bright's disease. Albuminuria occurs not only in high, but in low arterial tension. The latter is found often in young male subjects whose pulse-curve is very like that often met in ordinary anemia, its special features being its large percussion wave and very small tidal wave and the low position of the aortic notch. These individuals are usually weakly. The albumin is less or absent in the morning, and increased by prolonged standing. High arterial tension should be treated by restricting farinaceous foods and alcohol, and limiting fluids at the midday and evening meal. Digitalis is contraindicated. It is better to let the heart alone, depending on diet and active elimination. Iodid of potassium is beneficial. In low tension general tonics are best. Digitalis seems to be indicated for its action on the arterioles. [H.M.]

Nocturnal Elimination of Urine in Heart Disease.—M. Pehu⁴ publishes a note on the nocturnal elimination of urine in cardiovascular affections. When the relation between diurnal and nocturnal urinary elimination is higher than 100:90 then it exceeds the normal limit. He terms this condition "nycturie." He concludes that "nycturie" is the result of an insufficiency of the myocardium and constitutes a sign of "neipragie cardiaque." Insufficiency of the cardiac muscle may be thus diagnosed in a certain percentage of cases of cardiovascular disease before the appearance of those symptoms, which would then make "nycturie" of superfluous diagnostic value. [J.H.W.R.]

Orthostatic Albuminuria.—This condition is exhibited by a man of 25, a cigarmaker of a nervous and weak constitu-

¹ La Semaine Médicale, January 28, 1903.

² Maryland Medical Journal, March, 1903.

³ Arch. gén. de Méd., March 10, 1903.

¹ Archives of Pediatrics, March, 1903.

² Russki Vrach, January 18, 1903.

³ Medical Chronicle, December, 1902.

⁴ Lyon Médical, February, 1903.

tion, the case being reported by Beck.¹ Life insurance was refused because of albumin in the patient's urine. Repeated examinations of the urine showed that the morning specimen was free from albumin, and that the evening specimen, obtained after the patient had been standing half an hour, contained 1% of albumin. Appropriate treatment, with change of habits, has practically cured the man. In discussing the case, Dr. William Osler said that the reciprocal relations of neurasthenia and albuminuria were very interesting. Transient albuminuria is frequently prevented in neurasthenics, and neurasthenia is often a consequence of albuminuria. In one case in Baltimore, five minutes in an erect posture causes a trace of albumin in the urine. Sitting up in bed to eat breakfast causes albumin to appear. Dr. Osler states that too much stress is often laid upon the mere presence of albumin in the urine, when attention should be paid to the casts, specific gravity, the state of the arteries and the pulse. [A.G.E.]

Nephritis After Taking Potassium Chlorate.—A. Lorand² reports a case of acute nephritis following the administration of potassium chlorate. He believes that in each case of nephritis following an infectious disease a study of the relation between this and the administration of certain drugs, such as sodium salicylate, potassium chlorate, etc., should be made. [J.H.W.R.]

The Diagnosis of Chronic Interstitial Nephritis.—C. L. Mix³ speaks of the diagnosis of chronic interstitial nephritis based on physical signs, chiefly cardiovascular. He states that cases of this type make up from 2% to 4% of the general physician's practice. A thorough knowledge of the physical changes in this disease, although it is a protean one, enables the physician to make the diagnosis without immediate recourse to the examination of the urine. Indeed, the diagnosis should in all cases be based upon physical findings and not upon chemical and microscopic analysis. The urinary findings should be used merely as confirmatory evidence. Cases are cited to show possible errors from urinary examination. Changes in the vessels and heart and their physical signs are considered at length. Mix regards a palpable pulsation in the suprasternal notch as of much value in hinting the presence of chronic interstitial nephritis. [A.G.E.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

REVIEW OF LITERATURE

Cancer of Tongue.—H. T. Butlin⁴ reports the result of operation in 129 cases of cancer of the tongue. Of these 32 have been absolutely cured, all having passed the three year time limit. Of the remainder, 12 patients died of other diseases than cancer within the three years, leaving the number 117. Counting on this basis, the percentage of recovery is 27. The author is somewhat discouraged at the high mortality, but states by way of encouragement that his percentage of recovery until three years ago was only 20. He knows of no statistics of a large number of operative cases in which the percentage is better than his own, discouraging as that may be. The author states there is no part of the body in which early operation for cancer is attended by better results than that of the tongue. Early diagnosis should be made in nearly all cases because of the ready access of the tongue for constant observation and examination, not only for the patient himself, but for the physician as well. A pathologic condition of the tongue which has lasted for any length of time should be looked upon with suspicion. Superficial glossitis, red patches on the dorsum and border of the tongue, patches of a dauby white appearance, leukoplakia, warty excrescences, cracks and fissures, all should lead at least to the suspicion of beginning cancer. The author calls particular attention to warty growths on the tongue, asserting that they strongly dispose to cancer. Their early removal by elliptical incision is demanded. It is surprising with what ability patients are able to articulate their words after a great portion of the tongue has been removed. [A.B.C.]

The Use of Steam in Surgery and Gynecology.—M. F. Koslenko¹ illustrates the progress made by steam treatment since its introduction fifteen years ago by V. F. Snegirev, who employed the method originally for hemostatic and antiseptic purposes in gynecologic practice. Others began to utilize steam on a larger scale in various operative hemorrhages, in ocular inflammations, nasal affections, etc. The originator himself discovered in 1900 that his method is an excellent hemostatic in cases of parenchymatous hemorrhage, especially in operations upon the spleen and liver. An instrument was accordingly devised, the steam-saw, which allows steam to escape through its teeth and thus arrests bleeding simultaneously with the act of cutting. The styptic action is instantaneous, a crust being formed under the influence of heat and acting as a barrier to further escape of blood. Very recently the same author operated by means of his steam method upon a pyelitic kidney without losing one drop of blood. Further developments may be confidently expected. [L.J.]

Disarticulation of the Hip for Sarcoma of the Femur.—A. E. Halstead² reports a successful case of hip amputation for sarcoma of the lower end of the femur, and adds valuable remarks upon the diagnosis and prognosis in sarcoma of the femur. The patient was a girl of 21 who had a swelling of the left knee with the history of a few days' pain in the joint after a fall from a carriage 10 months before, and of continuous pain for eight months. The diagnosis of sarcoma was made and the limb amputated at the hip-joint. At the present time, three years and seven months after the operation, there is no evidence of return of the disease. The tumor proved to be a peripheral ossifying spindle-celled sarcoma. The differential points between this variety and the myelogenic type are discussed. The latter represents the lowest degree of malignancy of any of the bone sarcomas. The most constant symptoms of sarcoma of the femur are pain, enlargement of the bone, and spontaneous fracture or fracture from slight trauma. Albumose can usually be found in the urine in cases of bone sarcoma, but cannot be used as a means of differentiating malignant from benign tumors, nor chronic infections of bone from newgrowths. In regard to the rule that freedom from recurrence for three years should be considered as a cure, Halstead states that this is further from the truth in sarcoma of bone than in other malignant tumors. Local recurrences have occurred as late as 12 years after amputation, and in one case lung metastases were first evident 25 years after the tumor began to develop. [A.G.E.]

The Treatment of Hydronephrosis.—J. W. Bovée³ writes of the treatment of hydronephrosis, basing his remarks on a consideration of the numerous causes of that condition. Surgery is the only treatment to be suggested. Bladder conditions are of importance. Benign, and many malignant, tumors may be removed. When the disease is apparently yet confined to the bladder, but involving it in nearly its entirety, nothing but cystectomy is indicated. This operation is not a severe one, but disposal of the free ends of the ureters requires great judgment. In the treatment of renal diverticula often the most satisfactory method will be kidney resection, removing the diverticulum. This generally means the loss of a portion of excreting tissue, however, and always demands serious consideration. It may be possible in some cases to so drain the diverticulum that danger of distention is removed. This should not be done if the parenchyma has been destroyed. [A.G.E.]

Carcinoma of the Liver.—Herbert R. Bachell and W. Mitchell Stevens⁴ report two cases of carcinoma of the liver which are of interest. They state carcinoma of the liver is rapidly fatal, the duration being about 12 weeks after the occurrence of the first symptoms. In the first case reported the illness was short, of eight weeks' duration. There was no wasting. The only symptoms present were jaundice and ascites. At the necropsy no organs other than the liver could be found involved, so that the disease was primary in the hepatic tissues. The liver was enormous in size, weighing 17 pounds. In the second case the disease was primary in the

¹ Maryland Medical Journal, March, 1903.

² Jour. Médical de Bruxelles, March 5, 1903.

³ Medicine, March, 1903.

⁴ British Medical Journal, February 14, 1903.

¹ Russki Vrach, January 18, 1903.

² Medicine, March, 1903.

³ Northwest Medicine, March, 1903.

⁴ British Medical Journal, February 14, 1903.

pylorus, extended to the liver, which was almost universally involved. The authors call attention to the difficulty of differentiating carcinoma of the liver from alcoholic cirrhosis. In the second case there was no jaundice but well marked ascites. The liver was not palpable. There was no pain nor tenderness, consequently the condition could easily have been mistaken for alcoholic cirrhosis. [A.B.C.]

Fractures in or Near the Joints.—A. G. Gillette¹ says that bony ankylosed joints following fractures in or near them are not nearly frequent enough to demand the worry and warning the subject receives. Properly reducing the fracture is the most important part of the treatment, the joint being opened without hesitation if necessary. After reduction the parts should be kept in one position until good union has taken place, usually not less than six weeks. Then active instead of passive motion should be allowed the patient. The nonunion of intracapsular fractures of the femur is due almost always to lack of reduction, thorough immobilization and continued apposition of the fractured ends. Peculiar physiologic changes in the bones of the aged are not the cause of nonunion, the writer having had one ununited intracapsular fracture in a boy of 12. In fracture of the spine, immobilization is the principal treatment, whether laminectomy is or is not done. For this reason the waterbed is unequivocally condemned, as every movement of the patient sets the entire body in motion, causing pain and further injury. [A.G.E.]

Large Angioma of the Liver.—Alfred Mantle² reports the case. The patient was a male, who two years previously noticed some enlargement of the upper abdomen. This steadily increased in size. Early in 1902 he began to suffer from gastric disturbance, especially after taking food. There was no specific history, nor was he an alcoholic. When first seen by the author there was slight jaundice, the apex beat was displaced to the left, the abdomen was much distended, and there was definite bulging in the intercostal space on the right. An incision was made from the ninth costal cartilage downward for three inches. Serous fluid escaped. A tumor, deep-red in color, and cystic without pulsation, was apparently attached to the right lobe of the liver. An exploratory needle withdrew blood, and on removing the needle blood spurted from the wound. A suture ligature failed to control the hemorrhage, merely tearing through the mass. Alarming hemorrhage supervened. The patient died two hours later of internal hemorrhage in spite of packing. Necropsy showed the right lobe of the liver to consist of an enormous tumor extending into the right iliac fossa. It was of the consistency of a placenta. Its length was 12 inches, its widest part 8 inches. It was found to be an angioma involving only the right lobe. The other organs were normal. [A.B.C.]

The Treatment of Fecal Fistula.—C. C. Grekor³ prefers enteroanastomosis after Maisonneuve to complete exclusion of the intestine in the treatment of fecal fistula. The latter operation is more difficult and prolonged, and although it promptly checks all fecal discharge from the fistula, yet a mucous discharge persists and renders spontaneous healing extremely sluggish. To close the opening artificially would mean to cause retention of the excretions with the wellknown sequels, such as peritoneal irritation, collapse, etc. This troublesome circumstance is entirely obviated by enteroanastomosis after Maisonneuve because the excluded segment preserves its communication with the remaining intestinal lumen. Thus we need not wait for spontaneous closure of the fistula, but may without fear of causing retention resort to artificial obliteration of the opening by means of caustics, excision, suturing, etc. This local treatment may even be undertaken immediately after the chief operation, sparing the patient much tedious subsequent interference. A curious occasional result of complete exclusion of the intestine is prolapse or eventration of the excluded segment through the fistula. This complication is far less apt to occur after Maisonneuve's operation. Future safety demands a secondary resection of the excluded portion, which the author has done in a case of his own and recommends as a safeguard in all similar intestinal operations. [L.J.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

The Significance of Vesicovaginal Fistula as an Obstetric Indication.—Emil Kraus¹ gives the history of several cases of labor complicated by the scars of a repaired vesicovaginal fistula and from these and those cited in literature he concludes (1) that cases of labor in which the possibility of normal delivery seems to be called in question on account of vesicovaginal scars we must first wait to see whether the stenosis of the soft parts conditioned upon the cicatrix diminishes so in the course of normal labor that the expulsion of the fetus may be expected without special difficulty. 2. If this is not the case and an undue distention of the uterus occurs then delivery by laparotomy is indicated. 3. Forced dilation and deep incision of the scarred part in order to overcome or remove the stenosis are to be avoided (a) on account of the danger of tear and severe hemorrhage; (b) on account of danger of formation of a new fistula. [W.K.]

Twin Tubal Pregnancy in the Same Tube.—Ersilio Ferroni² presents a case of twin pregnancy. In the third month of gestation the condition of the patient required relief, and left ovariopalingectomy was performed with recovery. The tube removed contained two fetal sacs apparently unconnected, and the portion of the tube between them in a normal condition, but both openings were stopped with blood clots. The two fetal sacs were unequal in size, and showed different stages of development. It appeared that in the larger sac abortive changes with the death of the embryo had occurred while the other remained undisturbed in its growth and advanced to a later stage of development before a fresh lesion led to further abortive changes and symptoms requiring operation. The question whether both ova came from the same or different ovaries at different times is also discussed. The symptoms of the patient were those of an ordinary ectopic gestation, and it was only the anatomic examination which made known the existence of a twin pregnancy. [W.K.]

Cesarean Section on the Dead.—Weisswange³ reports the case of a pregnant primipara who, within two weeks of term, was taken with sudden pain at the heart and severe dyspnea. A midwife was sent for, who at once summoned the physician. He found the woman dead, but the fetal heart-beats were still perceptible. He therefore performed cesarean section as quickly as possible, and 17 minutes after the mother's death delivered a living child, which, though somewhat asphyxiated, was soon restored. One case has been reported of a living child delivered 23 minutes after the death of the mother. That this is rare, however, is shown by the fact that of 331 similar cases reported in 100 years in only six was the result favorable for the child. In Weisswange's case the mother's death was caused by rupture of the aorta. [W.K.]

Colpohysterotomy for Retroverted, Incarcerated Gravid Uterus.—G. Wennerstrom³ reports the case of a woman of 28, who at the fifth month of pregnancy suffered from a bloody mucous discharge and retention of the urine. Examination showed the cause was an incarcerated, retroverted uterus. The os could not be reached, the distended bladder extended almost to the navel, and the sigmoid flexure was filled with hard material. After emptying the bladder and intestine attempt was made to reduce the retroverted uterus, but in vain and some more effective operation became necessary. The posterior vaginal wall was drawn down and cut through, the posterior uterine wall was incised, and a badly macerated fetus with placenta delivered. The peritoneum was not opened; the patient made a good recovery, and two years later was delivered of a full-term child. The writer says the result of the operation left nothing to be desired and he was convinced that the method selected was the best for an incarcerated irreducible retroverted gravid uterus. The opening of the Douglas sac, avoided in this case, would in many instances be necessary. [W.K.]

¹ St. Paul Medical Journal, March, 1903.

² British Medical Journal, February 14, 1903.

³ Russki Vratch, January 18, 1903.

¹ Wiener klinische Wochenschrift, February 12, 1903.

² Zentralblatt für Gynäkologie, February 23, 1903.

³ Zentralblatt für Gynäkologie, March 7, 1903.

Prolapsus Uteri Inversi.—E. Funke¹ reports the case of a secundipara, aged 27 years, who during her second pregnancy suffered from pain in throat and other symptoms which led to a diagnosis of tuberculosis of the larynx. The symptoms, however, abated under treatment, and pregnancy proceeded undisturbed until term. During labor Funke was summoned in great haste, and found the patient in a dying condition. He was informed that while in labor she was seized with a severe fit of coughing, during which the child was quickly born, the coughing continuing some time longer. An examination showed extending from the vulva a sausage-shaped body, and protruding from this the placenta with the amniotic membrane. During the coughing this body, which proved to be the uterus, had evidently been expelled from the abdomen, accompanied with considerable blood, resulting in the collapse of the patient and her almost immediate death. The causes of prolapse of the uterus inversus are tension on its inner surface such as results from undue tension on the navel cord, and external pressure such as abdominal pressure in manual expression of the placenta. The external pressure seems to have been the cause in the case reported, that pressure resulting from the fit of coughing, augmented by the tension of the adherent placenta. [w.k.]

On Prolapsus Uteri; An Operation for Reproduction of the Sacrouterine Ligaments.—E. S. Bishop² describes an operation whose aim is to obtain as nearly as possible a return to the normal condition in which the uterus can move freely within certain limits and is capable of development in all parts during pregnancy. After opening the abdomen a thread is passed through each broad ligament, enclosing tube and round ligament. These are used as tractors to draw the fundus forward. A sound in the posterior fornix renders the latter prominent. A thick thread is passed vertically through each side, avoiding the mucous lining, so that each protruding end is half an inch distant from the other, and the whole loop a half to three-quarters of an inch from the cervix. The fornix is now applied to the sacrum, and a spot chosen directly opposite, free from vessels, nerves, and ureter and well outside the rectum, where the needle carrying the suture is entered deeply so as to embrace the periosteum, and brought out half an inch above. Before tying this suture a narrow strip of peritoneum is removed, both from the fornix and the wall opposite. The round ligaments are then shortened by Olshausen's method. He has performed this operation on ten patients. He discusses at length the function of the sacrouterine ligaments, and points out the disadvantages of other operations for replacing the uterus. [H.M.]

Drainage.—M. Hofmeier³ disagrees with Olshausen in his condemnation of drainage in any form as superfluous and often positively harmful. He considers drainage in many cases a proper precautionary measure, whose importance it may be difficult to prove positively, but from which when properly performed he has never seen any injury. He discusses methods of drainage, apparently in most cases preferring an open tube to a gauze drain, yet adapting methods to the peculiarities and necessities of each case. [w.k.]

A Case of Calcification of the Ovary.—J. Milander³ says that the pathologic metamorphosis of the corpus luteum is a frequent appearance, but its calcification rarely occurs, and is usually the result of an inflammatory process. He cites a number of cases from various authors, and reports a case from his own practice. Ovariectomy was performed for the removal of a cyst of the right ovary. The left ovary could not be found, but a hard substance was found free in the left side of the Douglas sac, which proved to be a calcified ovary. This case differed from those cited in that more stones were found corresponding to the corpora lutea in the ovary; the calcified ovary came, through spontaneous amputation, into the Douglas cavity; and the corresponding tube was atrophied. Also in this case there had evidently been no previous infection process, and the cause of the calcification must be sought in the nutrition disturbed by the rapid growth and pressure of the cyst. The cause of the atrophy of the tube is difficult to determine. [w.k.]

Does Uterine Rupture Indicate Cesarean Section in Succeeding Pregnancy?—H. W. Freund¹ discusses this question and gives the history of a woman who suffered uterine rupture in her sixth delivery. The tear, which extended to the height of the vesical vertex, was sutured and healed satisfactorily. In the eleventh month the woman was again pregnant. In the fourth month there were signs of dangerous distention of the uterine segment in the vicinity of the scar, and artificial abortion was performed. This treatment was repeated until the twelfth pregnancy, when Freund considered the uterine muscle strong enough to justify waiting until there was a possibility of saving the child's life. In the thirty-third week, as the os uteri was penetrable by the finger, labor was induced and the delivery of a living child was followed by a normal puerperium. Freund thinks when pregnancy occurs in a short time after uterine rupture whether early abortion should be induced depends upon the conditions incident to each case, the constitution and development of the uterine muscle in the lower segment, and movability of the uterine scar. Uterine rupture is more likely to occur in a multipara when there has been an abnormal distention in previous deliveries, weakening the uterine wall. This was shown in the case reported, in which several deliveries preceded the rupture. His experience teaches Freund that in cases in which repair of the rupture promises to be practicable and complete, total extirpation is not justifiable. That very extensive injuries can be successfully healed is also shown by this case, but repeated ruptures indicate total extirpation or supravaginal amputation. [w.k.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR. L. F. APPLEMAN

REVIEW OF LITERATURE

Treatment of Vulvar Pruritus.—Robin and Dalche² review the treatment of pruritus occurring in old women at the time of menopause or as the result of nervous phenomena depending on rheumatism, gout, diabetes, Bright's disease, or gastric disturbances. Among the means employed are mentioned prolonged hot applications of 1 to 1,000 solutions of corrosive sublimate, 10% solutions of chloral hydrate, and 5% to 10% solutions of cocain. The following powder may be applied locally:

Powdered orthoform	} of each, equal parts.
Powdered diiodoform	
Powdered talc.	

The anesthesia produced by orthoform lasts longer than that by cocain. The following ointment may also be used:

Menthol	0.05 gm.	($\frac{1}{4}$ grain)
Guaiaicol	0.3 gm. to 1.0 gm.	($\frac{1}{2}$ to 15 grains)
Zinc oxid.	10.0 gm.	(2 $\frac{1}{2}$ drams)
Vaselin	30.0 gm.	(1 ounce)

Ichthylol may be used in 10% aqueous solution or in an ointment containing 15%. Ruge, of Berlin, washes the parts with soap, then with a solution of corrosive sublimate, followed by an application of 3% or 5% carbolized vaselin. Leredde uses a 5% ointment of methyl salicylate. When there is dyspepsia with fermentation, Robin prescribes erythrol with calcium fluorid, as follows:

Erythrol . . . . .	.02 to 0.1 gm.	($\frac{1}{4}$ to 1 $\frac{1}{2}$ grains)
Calcium fluorid . . . . .	.02 to 0.1 gm.	($\frac{1}{4}$ to 1 $\frac{1}{2}$ grains)
Calcined magnesia	0.1 gm.	($\frac{1}{2}$ grains)

For one cachet. One cachet at the end of each meal.

Erythrol is particularly indicated in butyric acid fermentation; if lactic acid fermentation is present, ammonium fluorid should be substituted, as follows:

Ammonium fluorid,	0.1 to 1.0 gm.	($\frac{1}{2}$ to 15 grains)
Water	300 cc.	(10 ounces)

One dessertspoonful during the two chief meals. [L.F.A.]

Glycerin in Tuberculosis.—A. F. Pilcque³ advises the use of glycerin in tuberculosis. It supplies the fat necessary to

¹ Zentralblatt für Gynäkologie, February 7, 1903.

² Medical Press and Circular, December 21, 1902.

³ Zentralblatt für Gynäkologie, February 21, 1903.

¹ Zentralblatt für Gynäkologie, February 21, 1903.

² Le Mois Thérapeutique, Vol. III, No. 9, 1902, p. 104.

³ Jour. Méd. de Bruxelles, February 26, 1903, page 120.

nutrition, and acts as a good vehicle for the administration of creasote and tannin. [J.H.W.R.]

The Laxative Action of Purgatin.—The series of synthetic pharmacologic products has been recently enriched by the addition of "purgatin," a yellow, odorless and tasteless powder. The new remedy found employment in habitual constipation and allied disorders. K. U. Bergman¹ studied the action of purgatin on dogs and rabbits. His experience with the drug in man coincides with that of other observers. He warns against excessive expectations, and emphasizes such drawbacks as high price, habituation to the drug, red or violet discoloration of the urine, etc. Experiments with sulfur have given equally good results in dogs. The laxative dose of purgatin in man is 10 to 30 grains. Untoward by-effects were not observed. [L.J.]

Oxalic Acid as an Expectorant.—Poulet² considers oxalic acid an excellent expectorant, and gives the following mixture:

Oxalic acid 2 grams (30 grains)
 Infusion of tea 175 cc. (6 fluidounces)
 Syrup of orange peel 75 cc. (2½ fluidounces)
 Dose.—One tablespoonful hourly.

This drug is also of value in bronchial asthma, and its use is followed by no untoward results. [W.E.R.]

Theobromin.—H. Huchard³ considers theobromin one of the best diuretics that we have. It does not affect the heart; it causes only slight changes in the bloodvessels or in arterial tension; it acts chiefly as a stimulant to the renal epithelium. He prefers the pure theobromin to agurin (sodioacetate of theobromin) or to diuretin (sodiosalicylate of theobromin), because these two compounds, especially the last, are not only unstable preparations, but sodium salicylate may irritate the kidneys. Pure theobromin may be combined with lithium, sodium phosphate or caffeine; with caffeine it is used when an effect on both heart and kidneys is desired. Theobromin sometimes causes slight headache, which may be overcome by giving smaller doses or divided doses. It does not cause vomiting or other digestive disturbances if the pure drug is employed. It is given in capsules or cachets in the dose of not more than 0.5 gram (7½ grains) daily. [L.F.A.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 4, 1903:

SMALLPOX—UNITED STATES.

	Cases	Deaths
Alabama:	Mobile.....Mar. 21-28.....	3
California:	Los Angeles.....Mar. 14-21.....	2
	San Francisco.....Mar. 15-22.....	8
District of Columbia:	Washington.....Mar. 21-28.....	2
Florida:	Jacksonville.....Mar. 21-28.....	2
Illinois:	Alton.....Mar. 14-21.....	1
	Chicago.....Mar. 21-28.....	18
Indiana:	Indianapolis.....Mar. 21-28.....	17
Iowa:	Davenport.....Mar. 21-28.....	5
Kansas:	Wichita.....Mar. 21-28.....	1
Kentucky:	Lexington.....Mar. 21-28.....	2
Louisiana:	New Orleans.....Mar. 21-28.....	3
	2 Imported, the other not traced.	
Maryland:	Baltimore.....Mar. 21-28.....	2
Massachusetts:	Boston.....Mar. 21-28.....	2
	Fall River.....Mar. 21-28.....	3
	Lowell.....Mar. 21-28.....	2
Michigan:	Detroit.....Mar. 21-28.....	19
	Grand Rapids.....Mar. 21-28.....	4
	Port Huron.....Mar. 21-28.....	3
Minnesota:	Minneapolis.....Jan. 3-Mar. 28.....	92
Missouri:	Kansas City.....Mar. 14-29.....	4
	St. Louis.....Mar. 22-9.....	6
New Hampshire:	Manchester.....Mar. 21-28.....	10
	Nashua.....Mar. 21-28.....	2
New Jersey:	Jersey City.....Mar. 23-29.....	5
	Newark.....Mar. 21-28.....	2
New York:	Buffalo.....Mar. 21-28.....	3
	New York.....Mar. 21-28.....	1
Ohio:	Cincinnati.....Mar. 20-27.....	19
	Cleveland.....Mar. 21-28.....	1
	Dayton.....Mar. 21-28.....	5
	Toledo.....Feb. 14-Mar. 21.....	52

Pennsylvania:	Altoona.....Mar. 21-28.....	4
	Butler.....Mar. 14-28.....	2
	Dunmore.....Mar. 1-31.....	3
	Johnstown.....Mar. 21-28.....	9
	McKeesport.....Mar. 21-28.....	2
	Norristown.....Mar. 21-28.....	1
	Philadelphia.....Mar. 21-28.....	31
	Pittsburg.....Mar. 21-28.....	42
	3 Imported.	

South Carolina:	Charleston.....Mar. 21-28.....	1
Tennessee:	Green county.....Mar. 26.....	26
	Nashville.....Mar. 21-28.....	1
Texas:	Galveston.....Mar. 27.....	1
Utah:	Salt Lake City.....Mar. 21-28.....	18
Wisconsin:	Green Bay.....Mar. 22-29.....	1
	Millwaukee.....Mar. 21-28.....	1

SMALLPOX—INSULAR.

Philippines:	Manila.....Jan. 31-Feb. 7.....	1
	Provinces.....Jan. 31-Feb. 7.....	Prevalent.

SMALLPOX—FOREIGN.

Austria:	Prague.....Feb. 28-Mar. 14.....	18
Belgium:	Antwerp.....Feb. 21-Mar. 14.....	5
	Brussels.....Feb. 28-Mar. 14.....	11
	Ghent.....Mar. 7-14.....	2
Brazil:	Rio de Janeiro.....Feb. 13-20.....	1
Canada:	Winnipeg.....Mar. 7-14.....	1
Canary Islands:	Las Palmas.....Feb. 14-Mar. 7.....	86
Formosa:	.....July 1-Dec. 31, 1902.....	1
Great Britain:	Birmingham.....To Mar. 14.....	41
	Bradford.....Jan. 15-Feb. 28.....	9
	Dublin.....Mar. 7-14.....	9
	Dundee.....Feb. 28-Mar. 7.....	1
	Leeds.....Feb. 28-Mar. 14.....	26
	Liverpool.....Feb. 28-Mar. 14.....	172
	London.....Mar. 7-14.....	2
	Manchester.....Mar. 7-14.....	23
	Nottingham.....Feb. 21-Mar. 7.....	4
India:	Bombay.....Feb. 24-Mar. 3.....	64
	Calcutta.....Feb. 21-28.....	2
	Karachi.....Feb. 15-Mar. 1.....	1
Italy:	Palermo.....Feb. 28-Mar. 7.....	1
Mexico:	City of Mexico.....Mar. 8-15.....	6
Netherlands:	Flushing.....Mar. 7-14.....	1
	Amsterdam.....Mar. 14-21.....	2
Russia:	Moscow.....Feb. 21-Mar. 4.....	7
	Odessa.....Feb. 28-Mar. 14.....	6
	St. Petersburg.....Feb. 28-Mar. 7.....	77
	Warsaw.....Feb. 21-Mar. 7.....	6
Turkey:	Constantinople.....Feb. 22-Mar. 1.....	1

YELLOW FEVER.

Brazil:	Rio de Janeiro.....Feb. 13-20.....	25
Ecuador:	Guayaquil.....Feb. 21-Mar. 7.....	33
Mexico:	Vera Cruz.....Mar. 14-21.....	3

CHOLERA—INSULAR.

Philippines:	Cebu.....Feb. 12.....	4
	Talisay, Cebu.....Feb. 12.....	6
	Provinces.....Jan. 31-Feb. 7.....	169
	103	

CHOLERA—FOREIGN.

India:	Calcutta.....Feb. 21-28.....	71
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PLAGUE—INSULAR.

Philippines:	Manila.....Jan. 31-Feb. 7.....	2
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PLAGUE—FOREIGN.

Brazil:	Rio de Janeiro.....Feb. 13-20.....	2
Formosa:July 1-Dec. 31, 1902.....	265
India:	Bombay.....Feb. 24-Mar. 3.....	1,297
	Calcutta.....Feb. 15-28.....	468
	Karachi.....Feb. 16-Mar. 1.....	90
	Madras.....Feb. 21-27.....	83
	1	

PLAGUE—UNITED STATES.

California:	San Francisco.....Mar. 17.....	1
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Changes in the Medical Corps of the U. S. Army for the week ended April 4, 1903:

FORD, First Lieutenant CLYDE S., assistant surgeon, is relieved from duty at Fort Wadsworth, and will proceed to Fort H. G. Wright for duty, to relieve First Lieutenant Howard W. Beal, assistant surgeon.

TURNBULL, First Lieutenant WILFRED, assistant surgeon, is relieved from duty at Fort Myer and will proceed to Fort Monroe for duty, to relieve Major William F. Lippitt, surgeon. Major Lippitt will proceed to San Juan, P. R., for duty, to relieve Major Euclid B. Frick, surgeon. Major Frick will proceed to Fort Snelling for duty, to relieve Major Edgar A. Mearns, surgeon. Major Mearns will proceed to San Francisco, Cal., for transportation to the Philippine Islands, where he will report for assignment to duty.

ASHFORD, Captain BAILEY K., assistant surgeon, is relieved from further temporary duty at San Juan, P. R., and will proceed to Cayey, P. R., for duty.

TRUBY, First Lieutenant WILLARD F., assistant surgeon, upon his arrival in New York City, will proceed to Columbus Barracks for temporary duty.

WILLIAMS, First Lieutenant ALLIE W., assistant surgeon, is relieved from duty at Cayey, P. R., and will proceed to Fort Greble for duty, to relieve First Lieutenant Weston P. Chamberlain, assistant surgeon. Lieutenant Chamberlain will proceed to Cabana Barracks, Havana, Cuba, for duty, to relieve First Lieutenant John R. Devereux, assistant surgeon. Lieutenant Devereux will proceed to Fort Columbus for duty, to relieve First Lieutenant Eugene H. Hartnett, assistant surgeon. Lieutenant Hartnett will proceed to Vancouver Barracks for duty in Alaska.

WOOD, H. L., contract surgeon, leave granted March 4 is extended one month.

¹ Russki Vrach, February 8, 1903.

² Lyon Médical, October 30, 1902.

³ Journal des Praticiens, Vol. xvii, No. 9, 1903, p. 138.

STOCKARD, JAMES K., contract surgeon, is relieved from duty at Fort Delaware, to take effect upon the return to duty at that post of Contract Surgeon William J. Enders, and will then proceed to Fort Dupont for duty, to relieve First Lieutenant Samuel L. Steer, assistant surgeon, who will proceed to Hot Springs, Ark., and report at the Army and Navy general hospital for duty.

BEAL, First Lieutenant HOWARD W., assistant surgeon, resignation has been accepted to take effect May 31, 1903. Leave to include May 31 is granted.

EDIE, Major GUY L., surgeon, is relieved from duty at Columbus Barracks, to take effect upon the arrival of Lieutenant Truby at that post, and will then proceed to Monterey, Cal., for duty.

WINTER, Captain FRANCIS A., assistant surgeon, will report on April 1 to Major Louis A. La Garde, surgeon, president of the examining board at the Army Medical Museum Building, Washington, D. C., for examination for promotion.

McCULLOM, FRANCIS M., contract surgeon, is granted leave for one month from about April 1.

DOUGHERTY, J. C., contract surgeon, is granted leave for one month, with permission to apply for an extension of one month.

So much of orders of October 18 as relieve First Lieutenant Edwin W. Rich, assistant surgeon, from duty at Camp McKinley, Honolulu, H. T., is revoked, and Lieutenant Rich will remain on duty at that post until further orders.

DEVEREUX, First Lieutenant THOMAS, assistant surgeon, is relieved from attendance at the Army Medical School, to take effect April 7, and will then proceed to San Francisco, Cal., for assignment to duty as surgeon on the transport Sumner.

The following-named assistant surgeons will, upon the completion of the course of instruction at the Army Medical School, proceed to San Francisco, Cal., for assignment to duty as surgeons on the transports designated after their respective names, to relieve the contract surgeons now on duty on those transports: First Lieutenants John W. Hanner, Sheridan; William T. Davis, Logan; Robert L. Carswell, Kilpatrick; Cary A. Snoddy, Sherman; William A. Powell, Thomas.

The following-named assistant surgeons will, upon the completion of the course of instruction at the Army Medical School, proceed to the posts designated after their respective names for duty: First Lieutenants Harry L. Gilchrist, Fort Screven; Reynold M. Kirby-Smith, Fort Barrancas; George L. Collins, Fort Adams; Haywood S. Hansell, Fort Monroe; Jesse R. Harris, Fort Myer; Robert M. Blanchard, Fort Thomas; James Bourke, Fort Sheridan; George H. R. Gosman, Fort Duchesne; Samuel M. DeLoffre, Fort Assiniboine; Levy M. Hathaway, Vancouver Barracks; Robert H. Pleson, U. S. general hospital, Fort Bayard, to relieve First Lieutenant Horace D. Bloombergh, assistant surgeon; Junius C. Gregory, U. S. general hospital, Washington Barracks; William M. Smart, Fort Leavenworth.

The following-named assistant surgeons will, upon the completion of the course of instruction at the Army Medical School, proceed to Plattsburg Barracks for temporary duty and to accompany the Twenty-third Infantry to the Philippine Islands: First Lieutenants John A. Clark, Jacob M. Coffin and James D. Fife. Upon their arrival in Manila, Lieutenants Clark, Coffin and Fife will report to the commanding general, division of the Philippines, for assignment to duty.

The following-named assistant surgeons upon the completion of the course of instruction at the Army Medical School will proceed to San Antonio, Tex., and report for assignment to duty to accompany the Fourth Infantry to the Philippine Islands, where they will report for assignment to duty: First Lieutenants William H. Moncrief, Charles F. Morse and Clarence H. Connor.

The following-named assistant surgeons upon the completion of the course of instruction at the Army Medical School will proceed to Vancouver Barracks and report for assignment to duty to accompany the Seventeenth Infantry to the Philippine Islands, where they will report for assignment to duty: First Lieutenants Louis C. Duncan, Philip W. Huntington and Noel I. Barron.

The following-named assistant surgeons upon the completion of the course of instruction at the Army Medical School will proceed to Denver, Colo., for assignment to duty to accompany the Fourteenth Cavalry to the Philippine Islands, where they will report for assignment to duty: First Lieutenants Samuel J. Morris and Harry S. Purnell.

TALBOTT, First Lieutenant EDWARD M., assistant surgeon, upon the completion of the course of instruction at the Army Medical School will proceed to Fort Clark for temporary duty, and to accompany the Second Squadron of the Twelfth Cavalry to the Philippine Islands.

PYLES, First Lieutenant WILL L., assistant surgeon, upon the completion of the course of instruction at the Army Medical School will report at Washington Barracks for temporary duty and to accompany the engineer troops to the Philippine Islands.

LAMBERT, First Lieutenant SAMUEL E., assistant surgeon, upon the completion of the course of instruction at the Army Medical School will proceed to St. Paul, Minn., for assignment to temporary duty at Fort Keogh, and to accompany the Second Squadron, Thirteenth Cavalry, to the Philippine Islands. Upon his arrival at Manila Lieutenant Lambert will report for assignment to duty.

GAPEN, First Lieutenant NELSON, assistant surgeon, upon the completion of the course of instruction at the Army Medical School will proceed to San Antonio, Tex., for assignment to duty to accompany the First Squadron, Twelfth Cavalry, to the Philippine Islands. Upon his arrival at Manila Lieutenant Gapen will report for assignment to duty.

STEWART, WILLIAM J. S., contract surgeon, upon his relief from duty as surgeon on the transport Logan, will report for assignment to duty as surgeon on the transport Dix, to relieve Contract Surgeon H. Newton Kierulff.

SCOTT, First Lieutenant GEORGE H., assistant surgeon, upon the completion of the course of instruction at the Army Medical School will proceed to San Antonio, Tex., for assignment to temporary duty at Fort Clark and to accompany the Third Squadron, Twelfth Cavalry, to the Philippine Islands. Upon his arrival at Manila Lieutenant Scott will report for assignment to duty.

The following-named assistant surgeons upon the completion of the course of instruction at the Army Medical School will proceed to San Francisco, Cal., and report for transportation to the Philippine Islands, where they will report for assignment to duty: First Lieutenants Leon T. LeWald, Alexander Murray, Edwin D. Kibbourne, and Jay W. Grissinger.

The following-named contract surgeons upon their relief from their present duties will report to the commanding general, department of California, for assignment to duty, or for orders to proceed to their respective homes for annulment of contract if their services are not required: H. Newton Kierulff, John P. Kelly, Stephen Wythe, Homer C. Moses, and Joseph J. Shafer.

The following-named officers will report to Major Louis A. La Garde, surgeon, president of the examining board at the Army Medical Museum Building, District of Columbia, for examination for promotion: First Lieutenants Weston P. Chamberlain, Edward R. Schreiner, Ira A. Shimer, Douglas F. Duval, Clarence J. Manly, David Baker, Albert E. Truby, Eugene H. Harnett, Clyde S. Ford, assistant surgeons.

BAKER, First Lieutenant DAVID, is granted leave for four months from about May 1.

NEWGARDEN, Captain GEORGE J., assistant surgeon, having completed the duty for which he was ordered to Washington, D. C., will proceed not later than April 11 to Fort Mason and turn over the public property for which he is responsible, and upon the completion of this duty will join his proper station at Fort Harrison.

BACON, ALEXANDER P., contract dental surgeon, will proceed to Vancouver Barracks and report to the commanding general, department of the Columbia, for assignment to temporary duty with the Seventeenth Infantry, and upon the completion thereof will return to his proper station in the department of Dakota.

Changes in the Medical Corps of the U. S. Navy for the week ended April 4, 1903:

HARMON, G. E. H., medical inspector, detached from the Naval Hospital, Fort Royal, S. C., and ordered home to wait orders—March 27.

KERE, D. B., passed assistant surgeon, detached from the Wabash and ordered to the Buffalo—March 27.

PAYNE, J. H., assistant surgeon, detached from the Naval Hospital, Newport, R. I., and ordered to the Wabash—March 27.

DORSEY, B. R., assistant surgeon, ordered to the Naval Hospital, Newport, R. I.—March 27.

STREETS, T. H., medical director, commissioned a medical director from January 31, 1903—March 28.

ELY, C. F., appointed assistant surgeon, March 6, 1903—March 28.

STONE, M. V., assistant surgeon, ordered to Naval Hospital, Mare Island, for treatment—March 30.

HURD, I. N., pharmacist, retired from active service on account of disabilities incurred in the service March 28, 1903—March 30.

HOEHLING, A. A., medical director, retired, ordered to duty as a member of the Medical Examining Board, Navy Yard, Washington, D. C.—March 31.

BRADLEY, G. P., medical director, detached from duty as a member of the Medical Examining Board, Washington, D. C., and ordered to duty at the Naval Hospital, Washington, D. C.—March 31.

DEAN, R. C., medical director, retired, detached from duty as president of the Naval Medical Examining Board, Washington, D. C., and to duty as member of the Naval Retiring Board, Navy Yard, Washington, D. C.—March 31.

GUNNELL, F. M., medical director, retired, detached from duty at the Bureau of Medicine and Surgery, and to be president of the Naval Medical Examining Board, Washington, D. C.—March 31.

GRAVATT, C. U., medical director, detached from duty as a member of the Naval Retiring Board, and ordered to report for examination for retirement, then home to wait orders—March 31.

DEVRIES, J. C., acting assistant surgeon, ordered to recruiting duty—March 31.

MCCORD, D. P., acting assistant surgeon, ordered home to wait orders—March 31.

Assistant Surgeons R. H. Michels, J. L. Nelson, M. W. Baker, H. Shaw, B. F. Jenness, J. H. Halloway, R. A. Bachmann, H. F. Strine, F. M. Munson, E. M. Brown, J. P. Traynor, R. E. Hoyt, detached from the Naval Museum of Hygiene and Medical School, Washington, D. C., and ordered to their homes to wait orders to sea—April 1.

SPATLING, L. W., surgeon, detached from the Naval Hospital, Portsmouth, N. H., and ordered to the Navy Yard, New York—April 2.

HAAS, H. H., passed assistant surgeon, ordered to the Naval Hospital, Portsmouth, N. H.—April 2.

Changes in the Public Health and Marine-Hospital Service for the week ended April 2, 1903:

MCINTOSH, W. P., surgeon, to proceed to Sabine Pass, Texas, for special temporary duty—March 27, 1903.

FRICKS, L. D., assistant surgeon, granted leave of absence for three days—April 2, 1903.

ROBINSON, D. E., assistant surgeon, granted leave of absence for three days from March 28, 1903, under provisions of paragraph 191 of the regulations.

ADAMS, F. B., acting assistant surgeon, granted leave of absence for twenty-five days from April 7—March 31, 1903.

BULLARD, J. T., acting assistant surgeon, granted extension of leave of absence from March 15 to 29, inclusive—March 23, 1903.

FRASER, A. C., acting assistant surgeon, granted leave of absence for thirty days from March 27—March 23, 1903.

Promotions.

LUMSDEN, L. L., assistant surgeon, commissioned as passed assistant surgeon (recess), March 31, 1903, effective March 14, 1903.

THURSTON, E. J., pharmacist of the second class, promoted to be pharmacist of the first class—March 13, 1903.

American Medicine 599

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Exemption from Taxation Requires Governmental Inspection.—There are about 170 charitable institutions in the State of Massachusetts allowed to go free by the tax-collector, and yet, so far, there is no legal proviso that these institutions are in reality charitable. Judging from the experience of other States, some of these institutions may be as much the reverse of charitable as selfish cunning can make them. In Pennsylvania, the banner State for feeding at the public crib, millions of dollars—a sum greater than that expended by all the other States put together—are annually spent in this way primarily for the advantage of the political bosses. But the exemption from official inspection is almost as complete as the exemption from taxation. There must yet be incorporated in the laws of all States the fundamental principle that freedom from taxation implies a guarantee on the part of the government that the institutions thus favored are not run in the interests of selfishness, and are in truth performing services to the community in return for their privileges. In the meantime a vigorous tightening of the public purse-string would secure the passage of the highly desirable law looking to a scientific and stringent oversight of the thousands of institutions now silently doing as they please with public funds. Spending other people's money without accounting is not conducive to honesty or to the public benefit.

For a Better Understanding Between Profession and Public.—One of the most fundamental causes of quackery and medical humbuggery is the failure of the common people and the newspaper world to understand professional ethics. What we hold to be axiomatic, *e. g.*, as to self-advertisement, success, nostrums, etc., seems to the average workman or business man nonsense and even hypocrisy. He is likely to think that if we are sincere we are *pro tanto* stupid, and he really admires the "enterprise" of the charlatan and the secret or open advertiser. The more ignorant and trustful of the common people do not awaken to the trickery of the charlatan who controls by advertising the papers they read, even the editorial columns, and who owns the drug store he associates with medicines and the medical profession. To victimize these simple ones is the game of the sharpers, and there is no thoroughgoing public agency or well-administered law to protect trustful ignorance. To expose such impostors and im-

sitions in a medical journal fails of its purpose because such publications do not reach those who need the warning. One of the remedies left would be courses of free lectures on popular medical, hygienic, and ethical subjects delivered by representative physicians. Better still, perhaps, would be the publication in the daily press of short, unsigned articles on medical and hygienic subjects, written by physicians and vouched for editorially. The majority of lay newspapers and popular magazines are owned or controlled by the advertising fellows opposed to medicine, and entrance to their columns would be denied to those advertising real medical science and truth. But not all have fallen so low. In these could be easily exposed a number of glaring frauds which beset the unthinking, and both the public and the profession would be the gainers.

Our national drink bill, if the figures may be trusted as given by the *American Grocer*, was for all "stimulating beverages" in 1902, \$1,369,098,276. This was a per capita expense of \$17.33; or, supposing that the drinkers are one-fourth of the total population, the 1902 expense to each of these 20,000,000 was \$69.32. Going more into detail the statistics are as follow:

Alcoholic drinks	\$1,172,565,235
Nonalcoholic stimulants—	
Coffee	\$149,891,030
Tea	39,642,011
Cocoa	7,000,000—
	196,533,041
Total, 1902	\$1,369,098,276
Total, 1901	1,273,212,386
Total, 1900	1,228,674,925
Total, 1899	1,146,897,822
Total, 1898	1,177,661,366

The quantities of the four leading beverages consumed during the year ending June 30, 1902, were as follow:

	Gallons.
Coffee	1,498,910,304
Beer	1,381,875,437
Tea	396,420,115
Spirits and wines	157,206,554

Since 1880, says the *American Grocer*, the use of alcoholic beverages in the United States has nearly doubled, having increased from 10.09 gallons per capita to 19.48, a gain of over 93%. The use of coffee has increased over 52%, while tea has decreased about 48%. The liquor bill for 1902 was \$129,989,281 more than for 1901,

showing how quickly prosperity results in an increased use of alcoholic drinks, but chiefly in wine and beer. It has, in fact, been contended that in panic years the use of the stronger drinks (whisky, etc.) mounts up, while in years of prosperity that of wine and beer rises in excess. We wish some statistician would give us the figures as regards tobacco. Tobacco and coffee consumption seem to be closely related the world over.

Ophthalmology at the New York State Reformatory.—The Elmira report for 1902 contains the report of Dr. Case, the oculist of the Reformatory. It is of exceptional value, both positively and negatively, and well merits the scrutiny of the general and specialist physician, as well as of the penologist; 1,048 inmates applied for relief for ocular disease or defect, and 471 were "found to have practically normal eyes, or the abnormality was so slight as in no way to interfere with vision." Of the remaining 577, 126 are given as having simple hyperopia, 86 simple hyperopic astigmatism, 40 compound hyperopic astigmatism, 65 simple myopia, 22 simple myopic astigmatism, and a few cases of compound myopic astigmatism. Of anisometropia there were 32 cases. In the first place many of those who did not apply were surely eyestrain patients. Secondly, many of the 471 practically normal eyed certainly had ocular defects of as great pathogenic importance as any of the 577, but it was concealed because a cycloplegic was not allowed to be used. Dr. Case would probably agree that for scientific purposes these statistics are valueless. There are not over several cases in 100 with simple hyperopia, or simple myopia, or simple astigmatism, almost all cases being of the compound varieties of astigmatism. And, likewise, almost all patients are anisometropic. The explanation of the valuelessness of such statistics lies, of course, in the fact that a cycloplegic was not used in making the tests. This omission, we hasten to add, is due to no fault of Dr. Case. Had it been made possible for him to use the cycloplegic every one of his figures would have been changed. Without its use there is not only no accuracy, but no approach to accuracy in estimating ametropia.

All statistics of errors of refraction estimated without a cycloplegic are worthless, and this fact makes a vast deal of work which has been done in the examination of school children's eyes of no value whatsoever. We have seen the reports of such examinations running into thousands and tens of thousands of cases, specifying so many hyperopes and so many myopes, and of what use the reporters could have thought such figures could be to medicine or to humanity is beyond the reason of man to find out. The common way has been to suppose that ametropia of any kind is diagnosed by the subnormal acuteness of 20 foot vision as estimated by the test-letters. It is strangely supposed that this subnormal acuteness especially singles the patient out as needing the specialist's attention. For it is now well known that the optical defects of the eye which do the most harm are precisely those which coexist with normal acuteness when measured without a mydriatic. The worst reflexes come from the astigmatism and anisome-

tropia which can be temporarily neutralized by the accommodation. This is the very condition of eyestrain. The duty of the State and of the trustees of many public institutions is to give oculists such funds and opportunities as will render their work of some scientific value, and of service to those under their charge. What an egregious blunder to limit an oculist to such conditions as are revealed in the following quotation: "Examinations were necessarily made at night, and the best results could not be secured on account of the disturbing influences of reflection from the electric lights necessary in the room. On an average, thirty men would appear for examination during the evening. It is therefore evident that only the manifest errors could be detected and only approximate accuracy obtained in many of the cases." Reading between the lines, we judge that Dr. Case's report is in reality a plea for such authority to do good work. Whether so intended or not, it is a powerful plea.

The Duty and the Policy of the State Should be to Relieve Eyestrain of Institutional Inmates.—Dr. Case says that at Elmira the object of examinations of the eyes is for the purpose of removing a disability which would prevent the inmate from performing his duties in trades school, military, etc., and not for the purpose of removing any asthenopic condition that might exist. He has no doubt that if the object had been to relieve eyestrain, with all its attendant symptoms, the number receiving glasses would have been much greater and beneficial results both immediate and remote would have followed. In this connection Dr. Case makes a statement which is most noteworthy and which should arrest the attention of every penologist, indeed of every taxpayer. He says that the hyperopia was of a high degree, averaging from 2 to 4 diopters in those to whom glasses were furnished. If this is true the significance of the fact in a hundred ways is tremendous. The abnormality of mind and life of the patient, and especially of the young patient, which such a horrible amount of hyperopia as this would induce is amazing. The State, and all the States—again if the fact is but half true—could save thousands of times the expense of crime by the easy prevention of the morbidity-producing eyestrain. Immediate investigation by governmental scientific commissions should at least be instituted.

The Prophylaxis of Crime.—The great word of modern medical science is prevention. In sociology it is also the thought that motives effort, but in penology the idea has hardly entered the minds of students. Examinations of the eyes of epileptics brings out the fact of an enormously high proportion of astigmatism and anisometropia, and the statement of Dr. Case, of the Elmira Reformatory, to which reference has been made, is an epoch-making discovery, both in penology and in medicine. We have heard not a little of late that ocular optical abnormality is due to, or concurrent with, cranial asymmetry and orbital malformation. The emphasis of this theory seems to be a part of the old fatalism of disease. At least it can have no influence upon the thera-

peutics or the cure of ametropia and muscle-imbalance. The sole lesson from it would appear to be that such osteopathies must be given to the surgeon to operate upon, or to the osteopath to massage. Those interested in the prevention and cure of the patients thus afflicted may reply that the eyeball, muscles, and ocular appendages are soft structures, of great plasticity and adaptation to the bony parts. If the bony malformation is the cause of hyperopia, that does not lessen our duty to give the patient vision and stop morbid reflexes by means of the correction of the hyperopia, astigmatism, etc. The fact remains that if so many young criminals have such high degrees of ametropia, it is of unparalleled significance in causing crime. There is hardly a mind in the world that can remain moral and normal under such an affliction. Let us end the criminal folly of ignoring and belittling the importance of eyestrain. There is none that exaggerates so much as he who sneers at the exaggeration of the eyestrain specialist.

"Index Medicus."—The appearance of the first number of the new *Index Medicus* is an event of momentous importance which will cause rejoicing among medical men the world over. In other countries attempts have been made to publish a medical index since the original one in this country became defunct; they have not, however, been successful. The French Index is a failure; on account of the use of the cumbersome decimal system and the defective indexing it is of very little value in bibliographic work. The present *Index Medicus*, under the editorship of Dr. Robert Fletcher and Dr. Fielding H. Garrison, follows the well-tried plan of its American predecessor. It begins with January, 1903, though a few references from the literature of December, 1902, are incorporated in it. We find a slight error on page 1, in that the article by Ubert (Ueber Hämochromatolyse mit Pankreasatrophie und Diabetes) does not belong under the caption of Bibliography, History, Literature. The thanks of the profession are due to the Carnegie Institution, without a grant from which the publication of this invaluable work would have been impossible.

The Civil Sanitarium at Baguio, Benguet, in the Philippines.—From Dr. Jerome B. Thomas, attending physician, surgeon, and superintendent of the sanitarium, we learn that in the opinion of those who have spent several years in the Philippines the establishment of the sanitarium solves the problem of the prolonged residence of Americans in the islands, and will therefore add greatly to the efficiency of our civil service. It is the continuous high temperature of Manila that enervates, and if white men and their families can spend even a month or two of the year in Baguio, the remaining months should be passed in Manila in health and comfort. With fair railroad service from Manila to Dagupan, and the completion of the mountain trails, one should be able to make the trip with comfort in 48 hours. The climate is said to be fine and bracing during the entire year, and almost without exception the convalescents who come up from the tropical lowlands react to it promptly and return after a month or two

with a considerable amount of surplus energy stored up. At the height of the winter season of 1902–1903 the thermometer fell every night to 42°–50° F., but rose to 70°–75° in the middle of the day. The U. S. Commission intend to transfer the seat of government temporarily from Manila to Baguio, and will of course bring their families and their corps of assistants with them. They will probably remain during March, April, and May, which are the most trying months in Manila. The main building Dr. Thomas says will accommodate 60 people, and is finished with the exception of a part of the furnishing. Five large cottages will be finished within a month, and will constitute an annex. Patients are beginning to arrive, but he does not expect many this season on account of the long, expensive, and difficult journey necessary to reach there. However, the government is expending large sums of money on the construction of roads and trails, and before the expiration of six months there will be a good road connecting the sanitarium with San Fernando, on the coast of the China Sea. In another column we republish further details of the sanitarium.

For Lessening the Dispensary Abuse.—The Rhode Island Hospital at Providence, according to Dr. Johnson Peters, in *Charities*, has adopted a simple and effectual method. It was inaugurated in 1896. Opposite the entrance is a prominently displayed placard:

Patients are admitted to this department between 9 and 10 a.m. on weekdays only. The services of the physicians in attendance are given free and are

FOR THE POOR ONLY.

Patients who are able to employ a physician will not be treated in this department. All patients wishing to receive treatment, should bring a letter of recommendation from some physician in good standing, from the agent of some charitable association, or from some person known to the hospital agent.

If the patient does not bring such a recommendation he will be required to sign a statement that he is unable to pay for professional services, and that he requires charitable aid.

This rule applies to all cases except recent accidents, cases of emergency, or of sudden sickness. Patients will be charged a nominal sum for medicines, dressings, ointments, apparatus, and appliances.

Each applicant is taken in turn and privately questioned by a paid agent who is in attendance daily. If the agent is in doubt as to applicant's ability to employ a physician, and if the case is not an emergency one, he tells the patient he is not able to admit him and asks him to come again with a letter from some clergyman, physician, or other person of responsibility stating that the applicant is unable to pay for a physician's services. If the patient is admitted, the agent gets the following data: Name, address, occupation, number of children and their ages, the wages earned by the applicant and each of the children, by whom recommended, and the reason for applying, all of which is indorsed by the patient's signature. During the first six months after the system was inaugurated 30% of the applicants were rejected. The yearly average of rejected applicants since that time has been 12%. Only about 9% of those referred for letters of recommendation returned with such letters. During the six months previous to the operation of the system, 5,038 applicants applied for

admission to this department, while during the first six months after this plan was put into use the number dropped to 2,952, a decrease of 40%.

The Case of Performing Wild Animals.—Last week the papers contained an account of a woman being terribly injured, perhaps killed, by the enraged leopards she had been abusing in the Bostock "show." Last year one elephant killed his fourth trainer. Every year there are probably several men killed by the enraged animals of "shows," but these victims would deserve none of our sympathy were they themselves not the tools of a debased public. We affect indignation at degenerate Spain and her bull-fights, but our own degeneracy is in this respect greater as our animal shows are a more weak and cruel relic of the old vile barbarism which culminated in the Roman gladiatorial spectacles. We say *more cruel* advisedly. The bulls and horses used by the Spanish barbarians are killed speedily and are not subjected to a life of long-dragged-out suffering. The captivity of wild animals is bad enough, is indeed sufficiently cruel, even in our zoological gardens. But there is compensation there because of the comparative freedom of the animals, but especially because good comes to the thousands of onlookers in the knowledge and sympathy gained and aroused. In the case of the wild animals who are forced by torture and fear to perform feats utterly against their nature there is a worse than uselessness, there is a real gloating by the human animals over the poor beasts and an arousing of the passion of cruelty. The hot irons, the goads, the wire ropes, the drugging, and other nameless cruelties, are not easy to prove but are not myths. There is more cruelty in one day in any one of a hundred traveling animal shows in the world than in all the medical laboratories of all time. And yet the antivivisectionists—but we forbear!

The football controversy receives a clearer light from some statistics gathered by Professor Dexter in the *Educational Review*. His figures are based upon returns from 60 colleges, cover 10 years of time, and include the records of 1,374 separate teams. Out of the 22,766 men who had been members of these college elevens 654, or 2.9%, had received injuries serious enough to necessitate absence from college exercises. Professor Dexter estimated the ratio of permanent injuries at one for every 2,846 players. Professor Dexter thinks the deaths and serious injuries are so few as to be "practically negligible." We are not inclined to agree that 654 serious injuries is a matter too trivial to be noticed. The ratio of increase with each year is the important thing, and this is passed over in silence. It is, beginning with 1893 and ending in 1902, as follows: 40, 46, 40, 48, 52, 52, 67, 90, 76, 143, and this although the number of men playing is decreasing. There is another question that is left in silence, What is the gain, to offset the 654 serious injuries by football, that could not be also attained by more gentlemanly and sportsmanlike games? And lastly is another untouched question, Are the morals, direct and indirect, of this form of sport such as one would like to see ruling in our business and social life?

AMERICAN NEWS AND NOTES.

GENERAL.

"Cantus Transcendentalis."—Professor Karl Hahn hopes to demonstrate at the St. Louis World's Fair next year that music hath charms to soothe the savage beast by means of the "cantus transcendentalis," an instrument he has invented for peculiar use in hypnotizing melancholia patients and "aiding missionaries to the heathen." The instrument resembles a small organ and is said to duplicate the human voice.

American Medical Association.—Among the attractions which will be offered the members of the American Medical Association and their friends at the meeting to be held in New Orleans May 5 to 8, is an excursion from New Orleans through the sugar-cane, rice and oil fields of Louisiana and Texas to San Antonio, where the old Alamo, the shrine of Texas liberty, is preserved by the State, and where are many valuable relics. The rate will be low, and will include berth in a Pullman car and the exclusive use of the same for three days, the length of the trip. Particulars may be had from Dr. J. W. Head, San Antonio, Texas.

Reduced Rates to Congress of American Physicians and Surgeons.—The Committee of Arrangements announces to the members of the Congress that they have secured from the various passenger associations a reduced fare of one and one-third rate for them and for their friends attending the Sixth Triennial Congress, May 6 to 14. Tickets cannot be procured earlier than May 8, nor later than May 13, but will be good until May 16. In the circular containing this announcement is a list of the principal hotels of the city, together with the range of prices per day. Information on this subject can be had of Dr. A. R. Shands, chairman, 1319 New York avenue, Washington, D. C.

Use of Oleomargarin.—It is stated that the law passed by the Fifty-eighth Congress requiring that oleomargarin be properly labeled and placing a duty on its manufacture is not causing that decrease in the consumption of this article which was confidently expected, especially by the dairymen throughout the country. This failure, to a certain extent, is shown by the Commissioner's figures, which show that a total of 50,000,000 pounds of oleomargarin have been sold in eight months ended February 23, a decrease of only 30% from the corresponding period of the previous year. This decrease is probably accounted for, to a large extent, by a curtailment in the manufacture of this product immediately after the passage of the bill rather than by a marked decrease in its consumption.

Untrustworthy Mortality Records.—Frank L. Hoffman, a statistician of the Prudential Insurance Company, calls attention to the crude and irregular erratic mortality figures reported on deathrates representing the different parts of the country, and says the deathrate can rarely be relied upon to make comparison of the mortality of different communities, although it is a fairly satisfactory indication of local conditions where the mortality of a given city is compared with itself for a period of years. The deathrate at the age period of 25 to 34 years for Natchez, Miss., is given as 35.1 per 1,000 against a deathrate of only 9 per 1,000 for Newark, N. J. Again the deathrate of white males of the age period 40 to 49 in Washington is given as 16.2 per 1,000, whereas for Havana, Cuba, it is placed at 31.8 per 1,000.

Congress of American Physicians and Surgeons.—The Committee of Arrangements of the Congress of American Physicians and Surgeons, to be held May 12, 13 and 14, 1903, at Washington, D. C., have sent out a circular calling attention to the importance of registering on the part of members. Blanks are being sent out to this end. In lieu of a banquet the committee have arranged for a "smoker" which is to be given on the evening of May 14. On the evening of the smoker, in an adjoining hall, will be given an informal demonstration of pathologic specimens and lantern slides as follows: "Lantern slide demonstration of the ring bodies in the blood of anemic patients," by Dr. R. C. Cabot, of Boston; "Lantern slide demonstration of 21 cases of Paget's disease (osteitis deformans)," by Dr. E. A. Lock, of Boston.

The Tallest People.—In a comparative table of stature, arranged according to nationalities, the United States Indian stands higher than any other race of the world, though the Patagonian runs him very close. The white citizen comes next. The United States negro ranks fourteenth in the scale, and of all the countries in the world considered the Portuguese are found to be the shortest. It has always been proverbial among anatomists that blond nations are greater than their darker neighbors. This is due to the geologic positions of the blond races. They are characteristic of the north, and on account of the lower degree of temperature are induced to take more exercise, which throws them more in the open air. At the top of the list of countries, arranged in order of stature, the first seven, after the United States white men, are Norway, Scotland, British America, Sweden, Ireland, Denmark and Holland, all northern nations.

EASTERN STATES.

Generous Easter Gift.—Included in the list of contributions for the Convalescent Home of the Children's Hospital of Boston was an anonymous Easter offering in the sum of \$10,000, of which the hospital was in very great need.

Fall River to Have a New Hospital.—Mrs. Elizabeth R. Stevens, of Swansea, is said to have given \$100,000 for the erection of a new hospital in Fall River. The condition attached to the gift is that \$100,000 be raised in some other way, and substantially that sum is now provided. The whole matter is in the hands of the board of trustees and the new hospital will soon be constructed.

Moth Extermination.—After a three weeks' campaign the work of the school children of Lynn in exterminating the brown-tail moth has ended for the season. With one school's returns not yet received, the total number of nests collected and burned is 417,389. The Board of Trade offered cash prizes for the schools that did the best work, and for the separate rooms that led in the different buildings. These prizes are to be devoted to school purposes, purchases of pictures, statuary, for school decoration, or some needed educational appliance.

Tenement Reform in Hartford.—The Charity Organization of the city of Hartford, which has for its object among other things investigation of all reported unhygienic conditions and surroundings, has reported and discussed the following: First, that we in Hartford have examples of wretchedly bad buildings; second, that the badly constructed buildings are at present unprofitable to their owners; third, that some well-constructed tenement regulations would prevent the construction of tenement houses that lack the air and light necessary for health, without encroaching upon the interest of the landlords.

NEW YORK.

Association of Medical Librarians.—The next meeting of the Association of Medical Librarians will be held in New York, May 16.

Valuable Teeth.—Richard K. Fox, proprietor of the *Police Gazette*, is suing the Metropolitan Street Railway to recover \$10,000 for the loss of two teeth as the result of a fall he received when alighting from a One-hundred-and-twenty-fifth street car in December, 1900.

Vaccination in Private or Parochial Schools.—The *New York Sun* says that Attorney-General Cunnenn has given out an explanation of his opinion in the Dunkirk parochial school vaccination case. He holds that the State law does not compel the authorities of parochial schools to exclude unvaccinated children but that the local board of health may, if it deems it necessary, issue an ordinance directing general vaccination and providing a penalty for noncompliance.

Skin-grafting.—It is stated that although 1,346 pieces of skin have been grafted on the body of Cashier Wilson Frederickson, of the United States Express Company, who was one of the victims of the Plainfield railroad wreck, the doctors at the Muhlenberg Hospital have decided that more grafting is necessary. Forty-five men have already submitted to the operation of having portions of epidermis removed from their arms and legs in behalf of the injured man, and still further grafting is necessary.

Politics in Hospital Management.—A bill has passed the Legislature of New York and received the signature of the Governor which completes the scheme as mapped out by the Governor of that State for the centralization of the entire control of the State hospitals, placing them all under one general board of control, this board being responsible to the Governor alone. A purchasing agent is to be appointed who shall, each year, buy all the supplies that are to be distributed to each of the State hospitals, his office being in Albany.

Child Criminals in New York.—The grand jury of Brooklyn has been especially impressed with the fact that so many of those charged with crime are boys and girls under age. In their report they say: "There are several reformatories and societies in the county for reform and rescue of children, and their number should be largely increased. Manual training schools should be multiplied. Education and industry are the great saving influences. The Brooklyn Society for the Prevention of Cruelty to Children is especially commended for its splendid work, having cared for about 39,000 children since its organization. In this connection our people are to be congratulated upon the passage of the act establishing a Children's Court in this county, and that there is a prospect of the early enactment of the 'Children's Labor bill,' which specially restricts the hours in which children may labor, and the ages at which they shall be permitted to do so." In concluding the grand jury says: "We trust that there may soon be an awakened and enlightened public opinion upon whose all-powerful influence we can alone depend to bring about the needed reforms in our city."

PHILADELPHIA, PENNSYLVANIA, ETC.

Appropriation to Hospitals.—Governor Pennypacker has signed bills passed by the Legislature granting \$260,000 to Jefferson Medical College Hospital; \$260,000 to the Medico-Chirurgical Hospital; and \$175,000 to the University of Pennsylvania Hospital. The money in each instance is to be used for the construction of new buildings and for maintenance.

Doctor Sues for \$10,000.—It is averred that Dr. Rhinehart, of Pittsburg, has entered suit against W. C. Jute, of that city, to recover \$10,000 for medical services. The plaintiff avers that he was physician to the Jute family, and some time ago it became necessary for him to give up all other medical practice and accompany the defendant to Europe as his physician, service being rendered from July 8, 1902, to September 26, 1902.

Osteopathy Not Legalized in Pennsylvania.—The bill which during the early part of the winter was introduced in the Pennsylvania Legislature to legalize the practice of osteopathy and to provide a board of examiners for this so-called school of medicine has been defeated. There were 24 physicians and 2 druggists among the members of the House, and it is said that they contributed effectually to the defeat of the measure.

To Combat Tuberculosis.—The New Jersey Legislature has appropriated \$300,000 for a sanatorium in which the tuberculous poor may be treated. This is in furtherance of the plan adopted more than a year ago, when the Legislature appropriated sufficient money for acquiring a site for the necessary buildings. The present appropriation will give means for the construction of buildings and the inauguration of a systematic attack on tuberculosis.

Appropriation for Hospitals.—The following appropriation bills passed finally: Temporary Home for the Aged, Allegheny City, \$3,000; Corry Hospital, \$7,000; Home for the Aged, Philadelphia, \$4,000; Wood's Run Industrial Home, Allegheny, \$1,500; Hayes Mechanics' Home, Philadelphia, \$3,000; German Hospital, Philadelphia, \$30,000; Philadelphia Orthopedic Hospital, \$31,000; Wilkes-Barre Hospital, \$38,000; Soldiers' Monument at Middlespring, Cumberland county, \$4,000; Hamot Hospital, \$16,000; Home for the Friendless, Allegheny, \$6,000.

Home for Convalescent Children.—The Gwynedd Home for Convalescent Children has been completed at Gwynedd, Pa. The object of this home is to take children between the ages of 4 and 10 who have been treated in hospitals throughout the city, and although well enough to leave these institutions, have not sufficiently recovered strength to make it advisable for them to go back to their homes. The home is to be absolutely nonsectarian and will be open both winter and summer. As the expenses of building the home have been defrayed by the philanthropists who are behind the movement a request has been made that charitably disposed persons contribute toward the home's maintenance. It will cost about \$4,000 a year to maintain the new institution.

SOUTHERN STATES.

Celebration of the Reappearance of the "Index Medicus."—Professors Osler and Welch, of Baltimore, will give a dinner at the Maryland Club this evening, April 18, to celebrate the reappearance of the *Index Medicus*. The Editor, Dr. Robert Fletcher, will be the guest of honor.

Sues for Loss of Sleep.—A Tennessee woman has filed suit against the Pullman Company, asking \$1,999.99 damages, because she was compelled to ride in a sleeping-car from Nashville to Memphis, in which were a number of boisterous Tennessee legislators. She alleges that she was unable to sleep and subjected to much humiliation and annoyance from the Tennessee Solons.

Private Maternity Institution.—Brent-Mar Private Maternity and Lying-in Home is an institution located in Washington, D. C., for the convenience of patients before and during confinement. This institution is in no sense a public hospital, but a private home, which is open for the accommodation of women about to be confined, and is managed in such a way that it has received the approbation of ethical physicians.

Human Beings With Charbon.—From New Orleans comes the information that at Prairie Nammou, in Acadia parish, a number of persons are believed to have anthrax. It is stated that about 225 head of stock have died. The small farmers, ignorant of the virulence of the disease, skinned some of the dead animals and sold the skins. As a consequence there are thirteen human beings sick of charbon. A veterinary surgeon set to work to vaccinate the healthy animals against charbon, but found it impossible to convince many of the farmers of the necessity of this treatment. They were afraid that vaccination would make the animals sick and interfere with the ploughing, which is now well under way. The police jury of Acadia has been called together in extra session for Tuesday to take some action to stamp out the disease.

WESTERN STATES.

State Medical Association of Missouri.—The State Medical Association will hold its regular annual meeting at Excelsior Springs, Mo., April 21, 22, and 23.

Anticigaret Measure in Utah.—The new cigaret measure introduced by a woman legislator in the Utah Legislature has been signed by the Governor. It provides a fine of \$5 or five days' imprisonment for any person under 18 years of age who has in his possession any cigaret, cigar, tobacco or opium.

A Denver Academy of Medicine.—At a call meeting held March 31, 1903, the Denver Academy of Medicine was organized, the main object of which is the building of a home for the medical profession, where all medical associations may meet and where a library and society room may be maintained. The appropriate officers were elected.

Plague Reported in Kansas.—It is stated that the secretary of the Board of Health has gone to Rice county to investigate the cause of nine sudden deaths among a gang of railroad employes. There is a report that the deaths are due to bubonic plague, though it is stated that it may be smallpox. The surrounding territory is under strict quarantine.

Rabies in Chicago.—The Bulletin of the Health Department of Chicago for the week ended April 4, 1903, says that rabies in mild form is still prevalent in some parts of the city. During the winter three dogs have been sent to the laboratory and postmortem of the animals showed them suffering from hydrophobia. A cow bitten by a rabid dog has been detained to await the results of the bite.

Smallpox in Old Clothes.—A young woman of Scipio, Ind., recently died of smallpox and an investigation showed that two weeks before she was taken ill she opened an old trunk in an attic, which contained clothing that had been worn by her father just previous to his death from smallpox 39 years ago. The health officers believe that she contracted the disease from handling the infected clothing.

Deathrate in Chicago.—It is said that with one exception, that of March, 1895, last month's deathrate in Chicago was the highest since 1893, the World's Fair year. The cause is accounted for by the general prevalence of influenza. The average March deathrate for the previous 10 years was 15.93 per thousand population, but for this March it was 16.94 or 6.3% higher than the 10 year average. In 1893 it was 19.18, 1895 it was 17.88, and 1899 it was 16.75.

CANADA.

Canada to Bar Cigarets.—The House of Commons has voted affirmatively on a measure declaring for the prohibition of the importation, manufacture and sale of cigarettes in the Dominion of Canada. The bill met with violent opposition, but was finally passed.

FOREIGN NEWS AND NOTES

GENERAL.

"Water Cure" Forbidden.—In furtherance of an act of Congress approved January 30, 1903, "to promote the efficiency of the Philippine constabulary, etc.," General Davis, commanding the division of the Philippines, has issued instructions to the Philippine scouts. Among other things, his instructions say: "Sections 2 and 3 of Act 619 of the Philippine Commission, entitled 'An act to promote good order and discipline in the Philippine constabulary' makes it a crime if any member of the constabulary whips, maltreats, abuses, subjects to physical violence or tortures by the so-called 'water cure' any person for the purpose of extorting from him any confession or inducing him to give information whatsoever or countenances, allows or permits such acts. The principle of these sections will apply to members of the Philippine scouts ordered to assist the constabulary under the above act of Congress, and they will be brought to trial and punished under the articles of war if they commit any such offenses. The contents of this paragraph will be made known to members of scout companies in their native language."

GREAT BRITAIN.

Ventilation of the Cornish Mines.—The Home Office in England is considering the ventilation of the Cornish mines. It is said that at Dolcoth mine, where upward of 700 men are employed, during the past six years or more a number of cases of prolonged anemia associated with skin affection has attracted notice, and eventually a detailed investigation was entered upon. The general condition of the mine, the symptoms of the workers, the symptoms of the disease were studied. It was found that the anemia was due to ankylostomiasis and that this parasite was responsible for most of the troubles in the mines, aside from such as could be relieved by a thorough system of ventilation which is advocated.

CONTINENTAL EUROPE.

Madrid Medical Congress.—Many American physicians and surgeons are looking forward to the fourteenth International Medical Congress of Physicians and Surgeons, to be held in Madrid from April 23 to April 30. A number of Americans will attend this meeting.

Students in Russia.—News from St. Petersburg states that in the recent revolt of women students against the new examination regulations of the medical institute, 317 young women were reprimanded and 23 others were severely punished and excluded from the institute. Sixty male students also were expelled. The medical institute and the university were temporarily closed, but now have been reopened.

Serum Treatment for Scarlet Fever.—Professor Baginsky, the eminent physician in charge of the Children's Hospital in Berlin, writes, under date of March 22, that he has treated about 100 cases of scarlet fever with Aronson serum, that he can say the serum is not unworthy a fair trial and is in some degree successful, but the number of cases is not great enough to decide the question. The administration of the serum is without danger to the patient. Serum is made from the blood of horses which have been rendered immune by the injection of a culture of streptococci obtained from the blood of scarlet fever victims.

OBITUARIES.

Isaac S. Tanner, of Shepherdstown, West Virginia, died in that city April 10. Dr. Tanner had been a physician and surgeon of ability until his retirement several years ago. He was in his eighty-fifth year. He entered the Confederate army as First Lieutenant of Company F, First Virginia Cavalry, at the breaking out of the war. He was promoted to the rank of Surgeon after the first battle of Bull Run, was on the staff of General Joseph E. Johnston, and finally became Chief Surgeon of General Hoke's division. He was a close student of economic problems as well as of medicine and contributed a number of written articles on financial subjects.

Edgar Perry, of 1120 Boylston street, Boston, Mass., died suddenly at his home April 7, of apoplexy. He was graduated at Brown University in 1880, and was employed upon various newspapers until 1898, when he was graduated from the Harvard Medical School and began to practise medicine in the City of Boston. He was a member of the Massachusetts and of the Boston Medical Societies.

William H. Curry, died April 10 at his home, 904 North Stricker street, Baltimore. His death was said to be due to heart failure. Dr. Curry was born in Parkton, Baltimore county. He was a graduate of the Maryland Medical College. He practised for several years, but finally entered the insurance business, in which he continued to the time of his death.

Hobart Cheesman, of 171 W. Ninety-fifth street, New York City, died in St. Luke's Hospital on April 11, of a complication of diseases. He was 59 years of age and was graduated from the New York University in 1878 and for twenty years had been one of the chief examiners of the Equitable Life Insurance Society.

William G. Allen, of Mansfield, Mass., died April 4. He was educated at Woodstock Academy, Vt., and at the Albany Medical School. He was at the time of his death District Department Grand Master of the Twenty-second Masonic district.

Bernard Stuve died at his home in Springfield, Ill., April 11, aged 73. Dr. Stuve was one of the best known physicians in Sangamon county until his retirement several years ago. He was prominent in the State Historical Society.

William A. Durrie, of Prospect street, East Orange, N. J., April 8, aged 80 years. He had practised many years in Jersey City, but moved to East Orange. Of late years he had retired from active practice.

Gny Bryan Miller, of New York, died in Paris, France, April 7, in his thirty-first year. Dr. Miller was a graduate of the New York University and of the College of Physicians and Surgeons in 1898.

Henry D. Kerfoot, a prominent physician of Berryville, Va., died April 9, aged 57 years. He served with distinction in the Confederacy, having been associated with Col. John S. Mosby.

Charles T. Sompers died at his home at Blythedale, Cecil county, Md., April 9, aged 82. He suffered from apoplexy several years ago, from which he never fully recovered.

L. G. Archambault died in Woonsocket, R. I., April 8. He was born in St. Paul Ermitte, P. Q., in 1847, but came to Woonsocket in 1870, where he resided until his death.

J. C. Gordon, Superintendent of the Illinois Institution for Deaf and Dumb, at Jacksonville, Ill., died in that city April 12, after an operation for appendicitis.

William S. Whitwell, of 37 West Eleventh street, New York City, died April 8, of Bright's disease. He was 57 years old.

Sheldon Stringer, one of the most widely known physicians in Florida, died April 7, at Brooksville.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

PNEUMOCOCCUS ARTHRITIS, WITH REPORT OF A CASE AND TABULATION OF SOME ADDITIONAL CASES.

BY
R. M. SLAUGHTER, M.D.,
of Theological Seminary, Va.

Member of the Board of Medical Examiners of Virginia.

The subject of pneumococcus arthritis has been so well dealt with in the papers of Leroux,¹ Cave,² Cole,³ and Herrick,⁴ that I wish simply to report an interesting case recently seen in my own practice, and to append seven other cases found in recent literature with those already reported or collected by the writers mentioned.

The first of these cases, Meunier's,⁵ although reported as far back as 1894, seems to have escaped the notice of all collectors except Pfisterer.⁶ This writer has reported two cases and has collected and tabulated a number of others. All of these, however, with the exception of Meunier's case, three of Lexer⁷ and his own, are included among those collected by the foregoing authors. Lexer's and Pfisterer's cases were all in

R. H., white, male, aged 15, is a poorly nourished over-worked child. Father is living and healthy, mother died of pulmonary tuberculosis and the family has a marked tuberculous diathesis. In the early part of February, 1902, the patient had an attack of pneumonia of the right lung, and was treated by Dr. G. B. Fadeley, of Falls Church, Va. On February 15 I saw him with Dr. Fadeley and found him convalescent, but suffering intense pain in the right knee which showed every sign of an extensive arthritis.

Inquiry elicited the information that for several months past he had had trouble with that leg, which according to his account had been weak, and at times painful, and there was present evident muscular atrophy. We had in fact the cardinal symptoms of incipient joint tuberculosis: pain, weakness, muscular spasm and atrophy, and it was clear that the boy prior to his attack of pneumonia had incipient tuberculosis of the knee-joint. Later this opinion was confirmed by finding tubercle bacilli in pus from the joint. On February 20 he entered the Alexandria Hospital under my care. His general condition was now so bad that I hesitated to do any radical operation, and determined to try simply draining the abscess cavity and to improve his general condition. By this time the pus had escaped from the joint cavity into the popliteal space and burrowed downward beneath the gastrocnemius muscle to a point just above the inner malleolus, and as it was discovered later, upward along the outer hamstring tendon for six inches. On February 21, under chloroform, the joint was punctured with a large trocar and the lower sinus opened at its extremity. An enormous quantity of pus was thus evacuated and the joint and sinus washed out. Following this there was at first marked relief of pain, but no general improvement in spite of daily irrigation of the abscess and tract. Treatment consisted of stimulants and generous diet. The temperature continued

No.	Observer.	Date.	Age.	Sex	Relation to pneumonia.	Seat of arthritis	Nature.	Result.	Complications.	Treatment and remarks.
61	Meunier.	1894	60	M.	Fourth day of pneumonia.	Right knee.	Suppurative.	(?)	Septicemia.	Aspiration. Arthrotomy. Amputation advised and refused. Left hospital. Pneumococci and streptococci in pus.
62	Lexer.	1897	1	(?)	Nine weeks after bronchopneumonia.	Knee (hip?)	Seropurulent.	R.	Two weeks after operation on knee abscess in upper third of thigh, probably from hip-joint.	Punctures. Pneumococci in pure culture from pus from knee and abscess.
63	Lexer.	1897	5 mos.	(?)	No pneumonia.	Knee.	Suppurative.	R.	.....	Pneumococci in pus.
64	Lexer.	1897	9 mos.	(?)	No pneumonia.	Shoulder.	Suppurative.	R.	.....	Pneumococci in pus.
65	Pfisterer.	1890	8 mos.	F.	Preceded bronchopneumonia.	Both wrists. Left hip.	Suppurative.	D.	Purulent meningitis, nephritis, otitis media duplex.	Pneumococci in pus and cerebrospinal fluid.
66	Pfisterer.	1900	13 mos.	M.	Tenth day of bronchopneumonia.	Hip.	Seropurulent.	R.	.....	Incision. Pneumococci in pus.
67	Sireday.	1902	14	F.	During an attack of pneumonia. Right lung.	A metacarpophalangeal joint.	Suppurative.	D.	Right diaphragmatic pleurisy.	Pneumococci grown from blood.
68	Slaughter.	1902	15	M.	During an attack of pneumonia. Right lung.	Right knee.	Suppurative.	R.	Preexisting tuberculosis of joint. General infection, septicopyemic in nature. Sanguinopurulent stools. Diffuse cellulitis of left lower extremity and stump.	Incision and drainage. Amputation. Pneumococci in pure culture from pus. Tubercle bacilli in pus from joint.

infants. The latest reported case is that of Sireday.⁸ These cases I have tabulated with my own, continuing the tabular form adopted by Cave and followed by Cole and Herrick. In Cave's table are 31 cases, 23 of which were collected by Leroux. Cole adds 11 more and Herrick 21, but as 3 cases (those of Nicolaysen, Flament, and Allen and Lull) are included by both of these authors, the whole number previously reported should be 60 instead of 63. I have therefore numbered the cases in my table 61 to 68 inclusive.

It may be of interest to mention two cases described by Bourcey,⁹ for these were almost certainly cases of pneumococcus arthritis, but as they occurred prior to the establishment of the etiologic relationship of *Diplococcus lanceolatus* to pneumonia they are not included in the table. One of these was a case of suppurative arthritis of the right shoulder occurring in a man of 25. It began on the seventh day preceding an attack of pneumonia, and was followed by recovery. It is stated that in the pus from the joint there were found diplococci in short chains. In the other, there occurred in a man of 64, on the first day of a pleurisy a serous arthritis of a joint of the right thumb. This case was complicated with nephritis and terminated in death. Diplococci in short chains were found in the fluid from the joint and pleural cavity. The date of Bourcey's paper is 1883.

The following is a detailed report of my case:

high and there was constantly considerable discharge from the sinus. The discharge from the joint soon ceased and the opening closed but there was no return of joint distention. The leg sinus was then opened at its upper extremity just behind the joint and the tract washed out daily. At this time the upper sinus was discovered. Amputation was determined upon as a last resort, and despite the fact that it did not seem possible that the patient could survive the operation, the extremity was removed at about the middle of the thigh in order to avoid the upper sinus. In the operation I was ably assisted by Dr. M. D. Delaney. Dr. A. A. Ritenour administered the ether. To our surprise the boy survived the operation, and after several weeks of hovering between life and death began slowly to improve. During these weeks there was diffuse cellulitis of the stump and of the left leg, considerable sloughing occurring in the stump. There was high temperature at all times, frequently rising as high as 105° in the afternoon, and at one time for several days sanguinopurulent stools were passed. His death was daily expected for many days, but finally inflammation subsided, sloughing ceased, temperature became normal and the boy recovered. The stump, however, did not heal entirely for several months.

In the pus from the joint were found both tubercle bacilli and diplococci. The diplococci were identical in appearance with *Diplococcus lanceolatus* both in the pus and in culture. Some cultures were kindly made for me by Dr. James Carroll, of the U. S. Army, and pneumococci in pure culture were obtained.

Examination of the knee-joint at the time of amputation showed that the articular cartilages were entirely destroyed, and the articular extremity of the tibia deeply eroded, presenting the appearance of advanced tuberculosis.

Many reported cases seem to demonstrate that the pneumococcus has a predilection for joints that are weakened by previous disease or injury, but this case is unique in being the first reported in which it attacked a tuberculous joint. The case is also unique because the boy survived so desperate an illness with such complications and a major operation. The result proved, however, that it would have been far better to have amputated in the beginning, for I feel sure that had this been done recovery would have occurred much earlier and the boy been saved much suffering. My experience in this case and the study of the reported cases incline me strongly to the opinion that immediate amputation is the proper procedure in pneumococcus inflammation of large joints, when the pus has escaped from the joint and sinuses formed, thus giving rise to extensive absorbing surfaces.

Of the 68 now reported cases, 27 patients recovered and 40 died and the result of 1 is unknown, a mortality rate of about 60%.

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FIRST EARLY ELECTIVE OPERATION FOR APPENDICITIS PERFORMED IN WARREN COUNTY, PENNSYLVANIA.

BY

J. NORMAN DAVIES, M.D.,
of Warren, Pa.

In *American Medicine* for March 14, 1903, in an article by Dr. W. M. Robertson, the author claims that "on January 21, 1902," he performed "the first early elective operation for appendicitis performed in this (Warren) county." Simply to correct the error, I would like to report the following case:

M. F., aged 9, was sent to the Emergency Hospital at Warren, Warren county, by Dr. H. A. Kitchen, and entered the service of my brother, Dr. George A. Davies. A diagnosis of appendicitis made by Dr. Kitchen was confirmed at the hospital. Operation was performed September 14, 1901, by Dr. George A. Davies, assisted by myself; the anesthetic was administered by Dr. F. G. Haines, Dr. John M. Davies in consultation. The appendix was removed, abdominal wound closed with three rows of catgut, and without drainage union took place in nine days—at first dressing. Patient left hospital a few days later, and has remained well.

The foregoing was not the first, nor was it the only "early elective operation for appendicitis performed in Warren county" prior to January 1, 1902.

EARLY OPERATION IN APPENDICITIS.

BY

THOMAS J. TURPIN, M.D.,
of Monterey, N. L., Mex.

To the Editor of *American Medicine*:—In the series of five cases of appendicitis reported by Dr. Robertson (*American Medicine*, March 14) the doctor makes a strong plea for early operation based upon the "rapid recovery of all the patients." The following cases from my own experience showing the other side of the shield may be of interest:

During the summer of 1897 I treated five patients for appendicitis. All were first attacks and all were severe cases. In each case I urged operation and in three a consultation of five physicians agreed that operation was imperative. All refused operation and I was given the option of treating them without operation or resigning the case. All were treated expectantly chiefly with calomel, saline cathartics, and ice. All recovered, and now after five years' observation there has been no second attack in any instance.

Surgical cases are much more generally reported than

medical and recoveries much oftener than fatal cases. It follows that a disproportionate number of favorable surgical cases are reported. I am far from thinking that all cases of appendicitis should be treated without operation but I believe that if we could get true statistics of all appendicitis cases we would not find such strong argument for operation as appears from Dr. Robertson's five cases and from hospital reports generally.

Every man who feels himself skillful wants to use the knife whenever he thinks it justifiable, but I believe there are thousands of physicians whose experience will indorse my conclusion that the great majority of patients having appendicitis will recover without operation and that a large proportion who have first attacks never have a second one. As to the exact percentage of recoveries with and without operation we are still a long way from being able to get it owing to the fact as before stated that surgeons report their cases while physicians do not.

"NEURICITY" NOT IDENTICAL WITH ELECTRICITY.

BY

G. W. DRAKE, M.D.,
of Hollins, Va.,

To the Editor of *American Medicine*:—Allow me through your valuable journal to express my dissent from the views of Loeb, Matthews, Houghton, O'Brien, and others as to the identity of nerve force and electricity.

Many years ago, in a paper read before the Chattanooga Medical Society on The Parallelism of the Uses of Water in Nature and in the Human Body, referring to Franklin's discovery and demonstration of the identity of lightning and electricity, I incidentally remarked that had he been a neurologist he might have gone further and discovered the identity of nerve force and electricity. Subsequently, I discarded the theory of the identity of nerve force and electricity as untenable.

Among the objections to the theory are the following:

The conductors of electricity are very numerous and vary much in their degrees of conductivity. Electricity may be conducted by long metallic wires over long distances, also by submarine cables, and through the air and ground without wires. It may be evolved by the chemic action of nonliving matter or by the friction of the same.

Nerve force or neuricity (a word coined by me) cannot be conducted by metallic wires, submarine cables, through the air, or through the ground. Neither can it be evolved by the chemic action or the friction of nonliving matter. It is always associated with living matter, and its conductors are the same. It is on account of its constant association with the neuron that the name neuricity was given this energy, to distinguish it from energies which are associated with other forms of matter outside and inside of the animal body. By identifying this energy with a specific name I hope that the study of the problem of its mode of action will receive a new impulse and the explanation of the functions of the nervous system be much simplified.

Electricity is evolved by chemic action, friction, heat, or the action of neuricity (the negative electric current often accompanying the current of neuricity). Neuricity is evolved by chemic, frictional, thermic, or electric stimuli.

The behavior of the two energies is different; conductors of electricity are nonconductors of neuricity.

Franklin demonstrated the identity of lightning and electricity by using a conductor of electricity to conduct lightning. Let those who claim that nerve force and electricity are identical try the experiment of using a conductor of electricity for the conduction of nerve force out of the living body into other substances, and attempt to apply it as a motive power of a non-living machine, or to substitute it for electricity in the electric lights.

The rate of movement of nerve force (neuricity) is 100 feet per second, and that of electricity is 1,000 miles per second.

If nerve force and electricity are identical then nerve force and lightning are identical, and sudden death may be the result of a stroke of neuricity in some vital part. I don't like this theory.

ORIGINAL ARTICLES

A PLEA FOR MORE RADICAL OPERATIONS IN MALIGNANT DISEASE OF THE TESTICLE.¹

BY
 CHARLES GREENE CUMSTON, M.D.,
 of Boston, Mass.,
 AND
 WILLIAM A. ROLFE, M.D.,
 of Boston, Mass.

Although the greater number of surgeons at the present day consider castration as a very simple operation and devoid of any great risk, they are nevertheless unanimous in admitting that in malignant tumors of the testicle its curative action is very far from what it should be, and although it may delay the progress of the growth, this delay is certainly of short duration. Sir James Paget considered removal of the testicle in cases of carcinoma of the organ of such little value that he believed 23 months was the ultimate limit of survival of the patient, and Curling in his classic treatise considers castration in these cases of such little value that he questions whether it is really of any use to submit the patient to it. In the *Traité de Chirurgie* published under the direction of Duplay and Reclus, it is stated that recurrence is sure to take place, and in some cases it is so rapid that it might be believed the operation hastens it. In the *Traité de Chirurgie* edited by LeDentu and Delbet, it is said by Sébileau that he has seen cases which led him to believe that castration

of the testicle has been in no way improved on, the authors only advising an incision of the scrotum and removal of the organ. In their very excellent treatise on "Genitourinary and Venereal Diseases," published in 1902, White and Martin make the following statement on page 907: "When the cord is extensively involved the incision should be extended up along Poupart's ligament as already described. It is deepened to the peritoneum, which is stripped up, allowing access to the glands of the pelvis. When the lymphatic

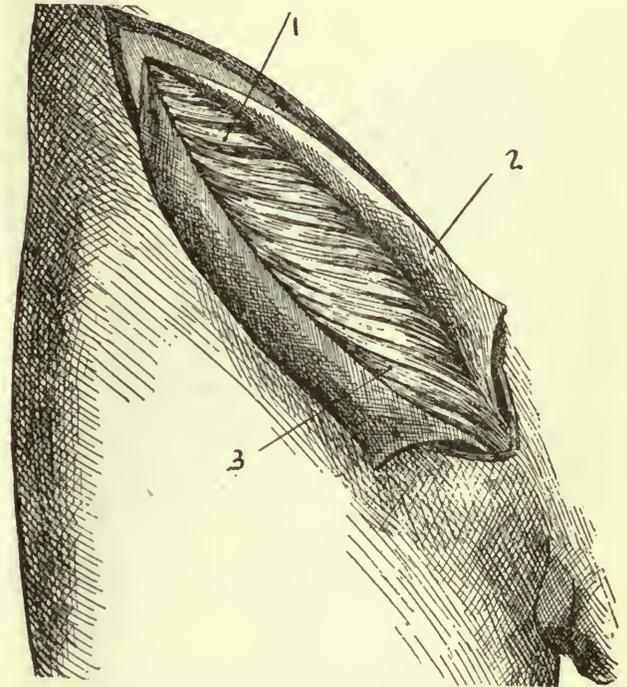


Fig. 2.—1, muscle. 2, fascial flap. 3, spermatic cord.

involvement extends upward beyond reach it may be attacked through a transperitoneal opening. The glands into which the vessels of the cord pass, completely surround the aorta. There is, moreover, one lying upon the external iliac artery which probably will be involved." We have quoted these authors purposely, because they have given the indications for a radical operation, although the technic is omitted.

In his very excellent monograph on "The Operative Surgery of Malignant Disease" Mr. Butlin comes to the following conclusions regarding castration:

Castration for malignant disease is an operation which may be performed with very small danger to life.

The operation, whether for sarcoma or carcinoma, cannot be said to be attended with large success so far as complete cure of the patient is concerned, but there is a great lack of information on this subject.

There is, however, evidence to show that it may be attended with permanent success, and there is still further evidence to show that the operation may be an excellent palliative measure even if it fails in its primary object—cure.

There is comparatively little fear of recurrence *in situ* unless the cord is thickened or the scrotum adherent at the time of the castration.

There is no prospect of permanent success for operations for recurrent disease unless the recurrence is seated in the scrotum.

Castration may be performed for malignant disease of both testes, if not with a reasonable prospect of permanent yet certainly of temporary relief.

The attention of pathologists and surgeons must now be directed to the extension of the disease to the lymphatic glands with a hope of devising an operation which may help to avert the occurrence of glandular affection and dissemination after the removal of the testis.

The inefficaciousness of castration has certainly nothing to do with the testicle itself, although Monod and Terrillon have put forward the theory that the

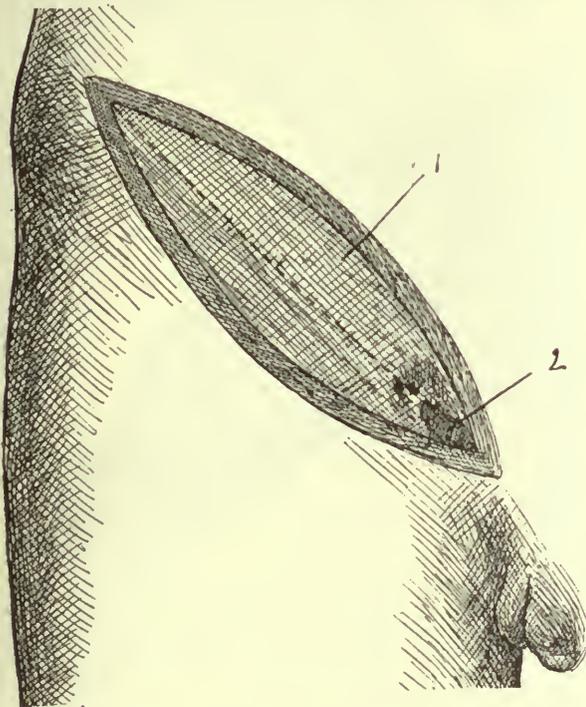


Fig. 1.—1, aponeurosis, showing line of incision. 2, external inguinal ring.

had increased the activity of the metastases in the glands, but he can in no way account for this satisfactorily.

In consulting a number of treatises on surgery which have appeared in the United States within the last five or six years, such as Jacobson's, Fuller's, Park's System of Surgery, a System of Surgery by Dennis, and many others, the technic of the operation for malignant dis-

¹Read by invitation at the annual meeting of the Manchester, (N. H.) Medical Society, February 18, 1903.

rapidity of recurrence is due to the great abundance of lymphatics in this gland. On the other hand, microscopic researches have proved that carcinoma and sarcoma of the testicle are composed of the same cell elements found in these neoplasms in other organs, and that these elements are always grouped in identically the same way, regardless of the organ in which they arise. The point to be attained when removing a carcinomatous testicle is to avoid a recurrence in the lymphatics, and there is nothing surprising in this, since

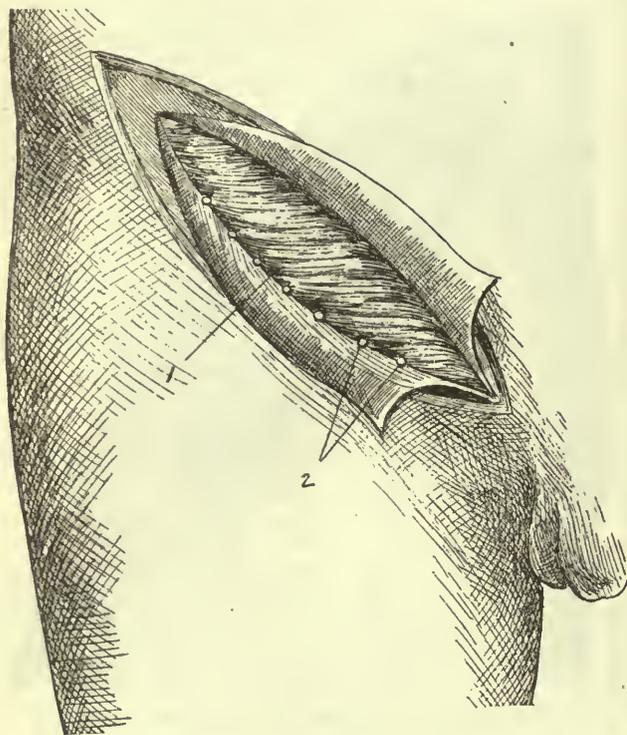


Fig. 3.—1, Poupart's ligament. 2, first layer of sutures uniting the muscle to Poupart's ligament.

secondary lymphatic infection is the cause of recurrence in all cases of carcinoma.

According to the classic works on anatomy, the lymphatics of the testicle empty into the lumbar glands; this is certainly an indefinite statement. In a very interesting article published some 18 months ago by Cunéo, the following conclusions are arrived at regarding the lymphatic territory of the testicle: (1) The lymphatics of the testicle empty into the right and left aortic glands; (2) in some subjects there is a lymphatic trunk which empties into a gland situated on the external iliac vein, immediately in front of the point where the ureter crosses this vessel; (3) in a full term fetus were found three small glands along the route followed by the lymphatics of the testicle in their passage into the iliac fossa.

Now, in the everyday surgery of malignant tumors of the breast and uterus, the surgeon is no longer content in simply removing the diseased structure, but large incisions are made in order to remove all the lymphatic glands, whether enlarged or not, which are connected with the lymphatics coming from the diseased organ. It is perfectly logical when operating for a carcinomatous testicle to be guided by the rule governing all operations for carcinoma, and consequently one should endeavor to remove all the lymphatic glands which are susceptible of becoming involved in malignant disease of the seminal gland. It is more than probable that if operators had more generally applied this principle fewer early recurrences would have been recorded. It is evident that at the present day we have not the pretension of radically curing carcinoma by operation in many cases, and it is

also evident that we cannot with impunity remove the enlarged lymph-nodes situated over the aorta, but it is most certain that as regards recurrence a technic may be employed by which the outlook for the patient is certainly better, and we will now describe a technic which we trust may prove of some value. Unfortunately we have only used it once, in the case of a man of 52, afflicted with a carcinoma of the right testicle. The operation was done 20 months ago, and up to date the patient has remained free of recurrence.

In describing the steps of the operation in the first place we would say that we follow Girard's technic for inguinal hernia. The skin incision commences about three centimeters above Poupart's ligament and parallel to it, commencing just a little below the external inguinal ring, and carried from three to four centimeters above the internal ring. It is useless and even bad practice to extend the incision too low, because by pushing the testicle upward it can be easily made to protrude from the lower part of the inguinal incision. So soon as the glistening surface of the external oblique is freely exposed by peeling off the fat it is incised from the external inguinal ring to a little above the internal ring, as is seen in Fig. 1. The fascia is then separated on both sides from the underlying structures to the extent of about four centimeters, so that the internal oblique muscle is freely exposed, and after pushing this aside the inguinal canal with the cord is freely exposed, as shown in Fig. 2. If a hernia is present it naturally should first be treated according to the ordinary rules.

After this incision the cord is easily dissected out of the canal up to the internal ring, and by splitting open the posterior wall of the canal the internal iliac fossa can at once be entered. Since the elements composing

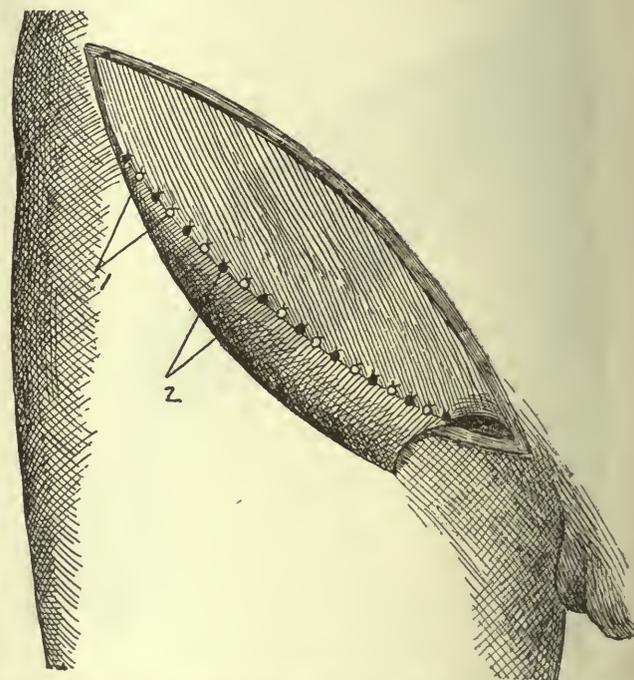


Fig. 4.—1, first layer of sutures uniting muscles to Poupart's ligament. 2, second layer of sutures uniting the internal flap of fascia to Poupart's ligament.

the cord become separated at the internal ring, the vas deferens dipping down toward the small pelvis, while the spermatic vessels pass over the anterior aspect of the psoas muscle to attain the lumbar region, one must naturally attend separately to the vas deferens and the spermatic vessels. After the vas and the vessels have been freely isolated, they should be separately ligated as far down as possible in the pelvis and then severed between two ligatures. The stump of the vas should be

cauterized with pure carbolic acid. The peripheral part of the vas deferens and the spermatic vessels is then isolated in the iliac fossa, and a search should be made for the lymphatic node which is situated on the external iliac vein at a point where the latter is crossed by the ureter, and should this be found enlarged it ought to be removed. The dissection of the cord in the inguinal canal is then continued from above downward, but the cord alone is not to be removed but all its envelopes as well, and if this is done carefully the three small lymphatic nodes described by Cunéo must necessarily be removed along with the rest. When the cord has been dissected out below the external ring of the inguinal canal, the testicle is pushed up out of the scrotum and easily extracted at the lower angle of the cutaneous incision.

It is now simply a question of restoring the parts. First, the internal oblique and transverse muscles are pulled over to Poupart's ligament and sutured there by four or five kangaroo stitches. These should be introduced through the thickness of the muscles and then united as near as possible to Poupart's ligament so that

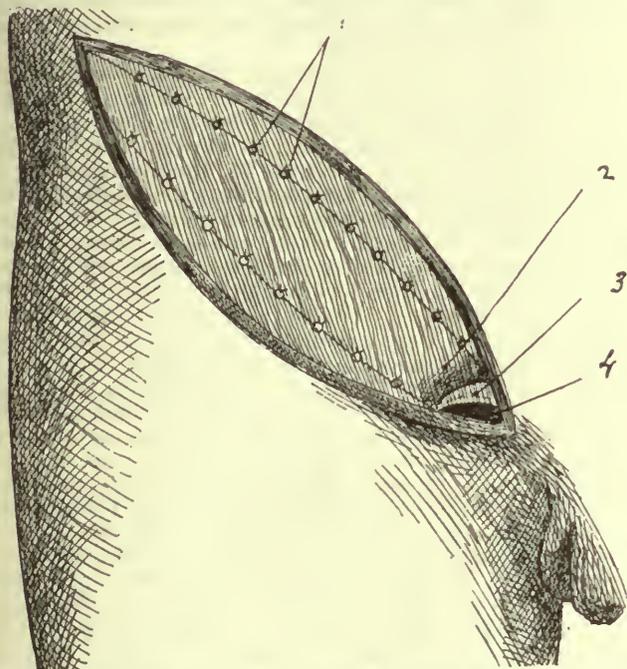


Fig. 5.—Third layer of sutures uniting external fascial flap overlapped on internal flap. 2, upper layer of fascia. 3, under layer of fascia. 4, the almost closed external inguinal ring.

the muscles completely obliterate the canal, since this can be done as there is no cord. This will be seen in Fig. 3.

At the external inguinal ring a suture is introduced so low down that it practically closes up the opening. After this stitch has been taken, the lower margin of the incised fascia is folded over externally, and the median or upper margin of the fascia is stitched to the under surface of Poupart's ligament, mattress sutures being preferred and placed about one and a half centimeters apart, as can be seen in Fig. 4. These are continued toward the lower part of the incision so as practically to close up the external ring. The external portion of the fascia is drawn over this layer of sutures overlapping them to the extent of about four centimeters, and its free border is sutured down to the underlying surface, here also using mattress sutures as in Fig. 5.

Covering the former inguinal canal, we consequently have three layers, one muscular, and two of fascia, thus giving an exceedingly firm abdominal wall, and we have selected this particular technic, because having no cord to deal with it is certainly under the circumstances

superior to the Bassini operation. We usually close the skin incision by buried catgut sutures in the fat, and the cutaneous line is brought together by intradermic catgut sutures.

BACTERIOLOGIC STUDIES OF THE SKIN AND THROAT IN CASES OF SCARLATINA.*

BY

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The material for the studies here recorded was obtained from the wards of the hospital of the Memorial Institute for Infectious Diseases, and from the infectious department of the Cook County Hospital. For courtesies in obtaining this material I am under many obligations to Drs. Frank Billings, J. B. Herrick, and W. L. Baum. I am also greatly indebted to Dr. L. Hektoen for suggestions and encouragement.

Plate cultures of glucose-agar, glycerin-agar, and earth-agar were made from the material upon the surface of the tonsils as early in the disease as possible, and from the skin both before and during desquamation. By inoculation from single colonies in these plates pure cultures were obtained and studied in detail. In each instance efforts were made to obtain pure cultures of all the forms of cocci present, and especially of those which grew in pairs. Single colonies were usually ignored, as were also those which were conspicuously chromogenic. In many instances the material from the tonsil or the cutaneous scales were rubbed over the surface of Loeffler's blood-serum and earth-agar, and when smear preparations from the resulting growth showed cocci, efforts were made to isolate them by means of plate cultures.

Cultures from the skin were made in 15 cases, in several of them repeated cultures being prepared at intervals, beginning with the stage of eruption and ending when desquamation was complete.

Before desquamation had begun the cultures were prepared as follows: The surface of the skin was first washed with alcohol, and after drying, the superficial epithelium was scraped away with a sterile scalpel. The fine scales thus obtained were taken up with a sterile platinum loop, moistened with sterile bouillon and introduced into nutrient media. The cultures from such material often yielded no growth, sometimes *Staphylococcus pyogenes albus* was obtained, and very rarely other varieties of cocci. The scales which were used in these studies were collected with sterile scalpel and forceps, placed in sterile test-tubes, and such as were required for cultures were removed from the tubes by means of a sterile platinum loop moistened with sterile bouillon. From the scales various bacteria were cultivated. Most often *Staphylococcus pyogenes albus* was obtained, being isolated in 10 cases. This was not surprising in view of the fact that the white staphylococcus is "a nearly, if not quite, constant inhabitant of the epidermis, lying both superficially and also deeper than can be reached by present methods of disinfection of the skin," as shown by Welch,¹ who appropriately designated it *Staphylococcus epidermidis albus*. The staphylococci isolated from these 10 cases corresponded in every particular with *Staphylococcus pyogenes albus*, and did not differ from cultures of the same organism isolated from the skin of healthy persons for the purpose of comparison. They turned milk strongly acid, liquefied gelatin, produced a milk-white growth upon agar and potato, and stained by Gram's method. It was not uncommon for the growth on agar to be quite tenacious. As pointed out by Welch, the liquefaction of gelatin and the production of acid in

* Read before the Chicago Pathological Society, February 9, 1903.

milk are apt to take place rather slowly. *Staphylococcus pyogenes aureus* was obtained in two cases.

Beside the staphylococci mentioned the cultures yielded various cocci and sarcinæ. There were several varieties of sarcinæ, and they were found in about one-fourth of the cases. Several of the cocci corresponded with those previously described, but no variety was found with any constancy. Streptococci were obtained in small numbers from scales taken from the skin of the abdomen in a single case. They could not be found in scales from the same patient at a later time, and it is probable that they had been transferred from the mouth to the skin. Raskin² found streptococci in the scales four times in 20 observations, but never in the intact skin. Gordon's³ examinations of the skin for the streptococcus were negative.

The results of our study agree with those of previous investigators of the bacterial flora of the human skin. Several observers have shown that micrococci of various species, including the pyogenic cocci, are very commonly encountered. That a large proportion of the bacteria are only upon the surface of the skin is shown by the very limited number found in the superficial epidermis after washing with alcohol. The great majority of cocci which can be cultivated from scarlatinal scales are probably derived from dust, clothing, etc.

In plate cultures made from a small amount of material from the surface of the tonsil, colonies of streptococci were always present in enormous numbers in comparison with the relatively few colonies of other bacteria. A series of plate cultures was prepared in the usual manner from the material upon the surface of the tonsils in 18 cases. The second plate of the series frequently contained 100 or 200 colonies of streptococci, and only a few or no colonies of other varieties. Because of the great number of streptococcus colonies it was often necessary to plate a small particle from the other colonies in order to get the bacteria composing them separated from the streptococci, whose minute colonies were contained within the larger ones. This procedure was sometimes repeated two or three times before certainly pure cultures could be obtained, and cultures were sometimes found to contain streptococci after every caution had been taken to eliminate them. In view of the great difficulty sometimes encountered in obtaining cultures free from streptococci one is tempted to believe that J. Seitz⁴ did not always have pure cultures when he described such extreme variations in the colonies of streptococci cultivated by him from the throat. In each of the 18 cases the number of streptococci present was enormous. The material in all was obtained early in the disease, usually as soon as the eruption was well developed and sometimes earlier.

These observations of the very frequent presence of streptococci in the throat are in full accord with the findings of former investigators. The earliest observers who noticed streptococci in the throat in cases of scarlatina were Croke, Loeffler, Fränkel and Freudenberg, and Heubner and Bahrtdt. Their studies have little more than historic interest since they relate to a very limited number of cases. In 1885 Klein⁵ described a streptococcus which he called *Streptococcus scarlatinae* and which he obtained from the teats of cows with an eruptive disease of the udder and also from the blood of persons with scarlatina. He believed this coccus to be the cause of both diseases and thought the infection was carried from cows to man in milk. Wurtz and Bourges in 1890 found streptococci constantly in the throat in scarlatina. In 1891 Kurth⁶ described *Streptococcus conglomeratus* which he found constantly present in the throat in cases of scarlatina and which he thought peculiar to the disease. The same year Tangl⁷ found streptococci in each of 7 cases. Booker⁸ examined 23 cases and found streptococci in all. In 1898 Gordon⁹ again brought forward the claims of Klein's streptococcus, which he identified with *Streptococcus conglom-*

eratus of Kurth. He obtains the streptococcus both from the throat and from the blood in fatal cases. Chabade (1899) found streptococci in a large number of cases. Charlton¹⁰ found streptococci in cultures from the tonsils in 65 out of 117 cases, and Baginsky and Sommerfeld¹¹ failed to find streptococci in only 6 out of 701 cases examined.

Hilbert¹² has shown that streptococci are constantly present in the throat, even in health. He used bouillon as a culture medium and his results do not indicate the numbers of streptococci present. In several cultures from the throats of healthy individuals we usually found streptococci, but in relatively small numbers.

The relationship which streptococci bear to scarlatina is still undecided. The majority of investigators have considered the streptococcus dangerous as a frequent cause of complicating secondary infections. A few, as Klein, Gordon, Baginsky, and Moser, are inclined to look upon the streptococci cultivated by themselves as bearing an important etiologic relation to the disease. At present the question must be left open until further study may have furnished a final solution. At some future time we hope to present to the society the results of some detailed studies of streptococci obtained from the throat in cases of scarlatina.

In these 18 cases of scarlatina, 25 pure cultures of cocci other than streptococci were isolated from the throat. In making inoculations from the plate cultures, colonies which exhibited distinct chromogenesis were discarded. Of the 25 cultures, 13 liquefied gelatin, 6 grew in gelatin at room temperature without producing liquefaction and 6 refused to grow in gelatin. Six of the cultures which liquefied gelatin and 9 of those which did not were recognized as sarcinæ. It was not always easy to decide whether certain cultures should be called sarcinæ or micrococci. In the 15 cultures designated as sarcinæ the cocci were arranged in groups of four upon some of the solid media, and in part of them there were regular or irregular bunches of packets in suitable media. In most of the cultures the individuals showed great variability in size. Through differences in their effects upon milk, in their growths upon potato, and in their reaction to Gram's staining method, it was possible to recognize 7 different varieties among these 15 cultures. Of the 6 cultures which did not grow in gelatin, 3 produced no change in milk (1 of them did not stain by Gram's method, while 2 stained). The other 3 which did not grow in gelatin produced acid in milk, 2 causing coagulation (1 stained by Gram's method and 2 did not). Of the remaining 10 cultures, 7 liquefied gelatin and 3 did not. In none of them did the individuals exhibit any special arrangement. Among these 10 cultures only a few were duplicates, there being at least 7 different varieties.

Several times cultures were obtained which possessed the tough properties described by Hlava¹³ in his *Leuconostoc hominis*, but they were never in large numbers, nor were they present with any constancy. *Staphylococcus pyogenes albus* was recognized three times and *Staphylococcus pyogenes aureus* twice.

In obtaining material for cultures from the throat, especially in young children who offer resistance, it is very difficult to avoid touching the tongue with the swab. Several cultures were made from the surface of the tongue in cases of scarlatina and in healthy individuals to learn what forms of bacteria were especially liable to gain entrance to cultures from this source. In all such cultures it was found that large diplococci and cocci arranged in groups of four made up the major part of the bacteria which grew.

Observers who have made extensive studies of the bacteria found in the mouth have demonstrated a large number of cocci, including the pyogenic cocci in this location even in health, and the results here related differ in no way from those previously obtained. In the throat large numbers of bacteria may easily gain lodg-

ment from the air and food, and probably most of those observed have such an origin. In a few instances cultures from the skin could be recognized as identical with those from the throat.*

These observations have led to the following conclusions:

1. The bacteria obtained from cultures from the skin, epidermic scales and the surface of the tonsil in cases of scarlatina are the same as those found in the same locations in health, and no one of them is constantly present except the streptococcus in the throat.

2. Because of the numerous cocci which grow in such cultures, and which appear in groups of two and four or bunches of the same under the microscope, it is impossible to identify them, except by a complete study in pure culture.

3. Cultures made by inexperienced persons or by those who do not fully appreciate the importance of avoiding the tongue are especially apt to contain large diplococci or sarcinae.

4. The streptococcus is present upon the tonsil of scarlatinal patients in enormous numbers in almost all cases.

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THE TREATMENT OF INSOMNIA.

BY

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There are several theories as to the causation of natural sleep; the older physiologists endeavored to localize the cause in a particular organ as the thyroid gland or the arachnoid plexus. Purkinje supposed that an afflux of blood to the base of the brain compressed the bundles of the corona radiata, interrupting the communication of the brain with the external world; cerebral congestion was an old theory which no doubt originated by a comparison of coma and sleep. Girondeau argued that the lymphatic spaces of the brain were filled with lymph during sleep compressing the vessels and thus reducing the circulation. Somner believed sleep was the result of reduced oxygen in the brain. Hynsius has shown that absorption is more active during sleep than in the waking state but that the accumulation of reserve albumin is retarded, which he explains by acids arresting the diffusion and exosmosis of albumin, fatigue causing lactic acid and other products of retrogressive metamorphosis, while alkalies accelerate osmosis. Ernera, of Brussels, regards sleep as an auto-intoxication from the accumulation of leukomains in the blood which are retained by the cerebral centers and have a narcotic action producing sleep; the leukomains

* On May 8, 1899, Class (*Trans. Chicago Pathological Society*, 1897-1899, iii, 525) read a paper before this society upon *Diplococcus scarlatina*, which he considers the specific agent in scarlatina. During our investigations this organism has been kept constantly in mind, and we have been unable to identify any single organism as answering to the entire description of Dr. Class and his associate, Dr. Jaques. It has appeared to us that the remarkable variability of the organism, as it has been described, which makes it "difficult to place it in any class of bacteria," may be explained, in part at least, by impure cultures. The published descriptions, however, leave no doubt that *Diplococcus scarlatina* is not a streptococcus such as has been described by Klein, Gordon, Baginsky, and Sommerfeld and others. Chariton (*Montcal Med. Jour.*, October, 1902) has also been unable to confirm Class's findings, but he gives no details regarding the studies which led him to this result.

formed during activity are oxidized and eliminated during sleep; it is claimed that blood from a fatigued dog injected into a normal one will produce sleep; Bouchard holds that the urine secreted during sleep is more toxic than that secreted during the day. This theory is very attractive, but has received little experimental support, the leukomains with narcotic effect have not yet been isolated and would presumably be ideal hypnotics if admitted to the materia medica. Rabl Y. Ruckardt is responsible for the hypothesis of the neurospongium which advances the theory that the psychic processes are due to the rapid play of the ameboid protoplasmic prolongations of the nerves, sleep being produced by the neurospongium extending between these prolongations and preventing them extending over one another. Lepine and Duval advocate similar theories. Ramón y Cajal believes the neuroglia has ameboid characteristics which enable it to act as an isolator of the nervous current. In relaxation neuroglia pseudopodia extend and intervene between the cells and their protoplasmic processes and the nerve threads so that the nerve currents are intercepted.

The theory generally accepted is that fatigue of the vasomotor center produces arterial dilation with consequent anemia of the brain. Professor Howell, of Johns Hopkins, shows in his experimental work that the immediate cause of sleep is the dilation of the peripheral arteries causing a reduction in the mean arterial pressure, consequently withdrawing blood from the cortex cerebri and at the same time increasing the proportion of venous to arterial blood so that not only the blood-pressure in the brain is reduced but the bulk of arterial blood passing through the organ, thus reducing the metabolism of the brain cells. Leonard Hill is of the opinion, based on experiments, that reduction of blood-pressure is not an actual factor in the condition of sleep, as he found that the mean blood-pressure was the same while in the recumbent position before going to sleep as it was during deep sleep. He considers that the reduced bulk of blood passing through the brain is owing to the increased proportion of venous blood and is the actual factor which produces sleep. Both Hill and Howell agree that the vasomotor system center is the point most concerned in the production of sleep. In his experiments on sensory nerves in curarised animals, Howell has shown that the vasomotor center is capable of fatigue and that consequently the continuous work of the center during waking hours (all our sensations and emotions cause activity of the center) must produce a condition of cell exhaustion which gradually causes dilation of the arterioles with loss of arterial tone, so that on taking the erect position from the recumbent the blood-pressure falls instead of rising 10 mm. to 20 mm. Hg. showing that the power of the vasomotor system to overcome the effect of gravity has been lost.

Sleep is deepest during the first two hours, and then as the center recovers the arterioles gradually contract, reducing the proportion of venous to arterial blood, and increasing the bulk of blood circulating in the brain; when the arteriolar contraction and the proportion of venous to arterial blood are normal, the subject awakes.

The force and rate of the heart-beat is decreased by the reduced quantity of arterial blood passing through the coronary arteries; the heart remaining longer in diastole receives a greater amount of nourishment and does considerably less work, consequently recuperates during sleep. The period of sleep is therefore the result of a systemic loss and resumption of tone of the vasomotor center.

Howell suggests another factor in the production of sleep, viz., the fatigue of the psychic portions of the brain, which are particularly active during the waking state, causing them to lose their reactive power which will be further decreased on the reduction of the blood-supply, when they fall more readily below the standard of consciousness.

During natural sleep the eyelids are closed to exclude light and to avoid visual sensation, the eyeballs are turned upward, the voluntary muscles are relaxed so that the body is in a state of complete repose, respiration becomes slower, the amount of inspired air becomes less, so much so according to Mosso that it may fall to one liter instead of seven as in the waking state. Respiration also changes its character; instead of being abdominal it becomes almost entirely thoracic or costal, the action of the diaphragm is weakened, while inspiration is prolonged, occupying five-sixths of the respiratory period instead of four-fifths, the respiratory pause is absent and the depth is increased.

The gaseous exchange is also modified, there being a decrease in the elimination of CO_2 from 52% during the day to 42% during sleep, while there is an increase in the absorption of oxygen. The necessity of oxygen for recuperation from fatigue is well shown by the experiments of I. Joteyko in Richet's laboratory. He found that if the isolated gastrocnemius of a dog be fatigued by being alternately tetanized for, say five minutes, and allowed to rest for five minutes, after some time, the intensity of the stimulus remaining constant, the contraction curve begins to fall, until finally the stimulation no longer produces any contraction, and the muscle remains at rest in a slightly contracted condition. If the muscle be left to itself and kept moist for a considerable time, contractions nearly equal to those before the fatigue can be induced anew with stimulus of the same strength. One of the factors in the recovery is the presence of oxygen. Joteyko proved that by excluding oxygen after complete fatigue, the muscle cannot again be put into activity, showing that in fatigue it is absolutely necessary for the muscle to receive oxygen.

During sleep the weakening and slowing of the cardiac action is marked. Berichardt found that in a child 21 days old, during the waking state the pulse was 140, while during sleep it was 121; from 6 to 21 months it was 128 waking, and 112 during sleep. Besides the peripheral arterial dilation there is a fall in temperature of about $.2^\circ$. The surface vessels begin to dilate in the evening and reach their maximum during the first hour of sleep. Martin measured the different parts of the body and found that during sleep the chest became three-fourths inch smaller, while after a sleepless night it was enlarged five-sixths inch and the abdomen half inch, showing that during sleep there is continued loss of peripheral arteriolar tonicity. The parts usually resume their waking dimensions after six to seven hours' sleep.

From the dilation of the surface vessels it follows that the sweat and sebaceous glands are more active during sleep, which may account for the peculiar odor of the sleeping-room and for the greasy, moist condition of the skin which exists on waking in the morning. There is a decreased function of the various organs of the body as well as of the brain during sleep. In four cases in which the urine secreted during the sleeping and waking hours was collected separately, I found the following quantities per hour:

	Elimination during sleep.				Elimination during waking.			
	I.	II.	III.	IV.	I.	II.	III.	IV.
Urine, per hour.....	44cc.	31cc.	27cc.	32cc.	66cc.	46cc.	42cc.	52cc.
Nitrogen, per hour.	0.462	0.383	0.587	0.439	0.486	0.452	0.765	0.73
Carbon in organic combination, per hour.....	0.414	0.334	0.32	0.38	0.516	0.35	0.409	0.586
Carbon in inorganic combination, per hour.....	0.0098	0.0049	0.005	0.0042	0.0116	0.0032	0.0097	0.008
Total carbon, per hour.....	0.513	0.339	0.324	0.385	0.528	0.358	0.411	0.594
Carbon }	1.2	0.88	0.57	0.87	1.08	0.79	0.58	0.8
Nitrogen }								
Organic carbon }	62.7	67.3	63.6	90.8	45.51	42.2	42.1	72.4
Inorganic carbon }								

Mendel and Marro claim that more phosphoric acid is eliminated during sleep, especially earthy phosphates, while alkali phosphates are increased during the waking hours owing to brain activity. The elimination of phosphoric acid is influenced by too many causes for these observations to have much weight. Both the nitrogen and carbon elimination is less during sleep, while the factor $\frac{C}{N}$ shows but little variation. The relation of carbon in organic combination to carbon in inorganic combination is less during sleep by about one-third. This would seem to show that less alkali is eliminated during sleep, and that the alkalinity of the blood is reduced.

Of blood changes we know very little. Keyes found a decrease in the number of red corpuscles after several nights of insomnia, while Byford found that every sleepless night accelerates the blood flow, suggesting it is owing to the decreased oxygen-carrying power of the blood, the increased circulation being compensatory.

In regard to the nervous system, some writers assert that sensibility becomes more intense, others maintain that it is deadened. These differences of opinion are probably due to the methods of investigation, those who find sensibility deadened have observed conscious sensation not sensibility, while those who say sensibility is increased have observed reflex acts. Dr. Noyes, experimenting with a dement, arranged that the knee-tendon be tapped at regular intervals of five seconds. When the patient was asleep and undisturbed the knee-jerk gradually disappeared, but the mere sound of a person walking across the floor was sufficient to stimulate a series of jerks, which gradually subsided, the tap of a pencil again starting the reaction. Reflexes are undoubtedly active during sleep. Upon tickling the foot it is withdrawn; the cremasteric, abdominal, and tendon reflexes, and the pupil reaction are also nearly as active as in the waking state, except in the first hour or two, when sleep is the deepest. Tarchanoff found that the cerebral cortex in puppies ceased to react readily to electric stimuli, but the spinal cord and the sensory nerves were active; sensations of pain were deadened to consciousness. In other words, the nerves transmit the sensations of pain but the sleeping animal does not perceive them.

That the sensory nerves are fully awake during sleep is shown by the increase in the volume of the brain on external stimulation by sound, light or tactile impressions. The voluntary muscles are also awake, as a sleeper will change his position in bed without awaking.

To summarize, there are three main factors in the production of sleep: (1) Diminution of irritability caused by fatigue of portions of the cortical area; (2) voluntary withdrawal of sensory and mental stimuli involved in the preparations for sleep; (3) diminished blood supply to the brain owing to relaxation of tone in the arteries from fatigue of the vasomotor center and the consequent reduction in the pressure and bulk of blood in the brain. If anemia of the brain were the sole cause of sleep syncope would be sleep, but in syncope there is loss of consciousness due to anemia, but there is not sleep.

The nervous theories of sleep are defective because they do not point to a fundamental cause. Creighton Browne's remark, that the arteries were made for the brain and not the brain for the arteries, is very apt, as the amount of blood going to the brain is regulated by the functional activity of the nervous tissue. It is very evident from the foregoing that during sleep consciousness is arrested, so that sleep is the resting time of consciousness, but the arrest of consciousness is not necessarily sleep.

Girondeau declared that sleep was a useless, foolish, harmful practice, but as yet no one has been able to cure himself of the habit, and experiments show that loss of sleep is much more harmful than loss of food. In the

Iowa University, wherein some experiments were made, men were deprived of sleep for about 90 hours; in one case hallucinations occurred, which disappeared after sleep. In all there was a steady increase of weight with a decrease in grip and pull force; acuteness of vision was increased, dropping to below normal after sleep; memory became defective, and power of attention impaired; in one case the temperature fell 3° below normal.

When the ability to sleep is weakened, sleep becomes light and fugitive. As a rule broken sleep occurs in persons with an irritable vasomotor system, who blush easily and in whom the pulse quickens on slight provocation, and also in those of emotional temperament who are easily provoked to grief or laughter. These patients will say that they have not slept a wink all night, that they have heard the clock strike every hour, but if watched it will be found that they sleep lightly at intervals during the night. Complete insomnia rarely occurs, and when it does death takes place in eight or ten days.

Mental overwork produces insomnia probably owing to overdilation of the cerebral vessels, which fail to contract through temporary paralyses. Insomnia the result of physical overwork is probably due in part to the same cause and in part to the increased action of the heart, which fails to subside as rapidly as the pressure. Oliver has shown that under normal conditions the blood-pressure returns to normal much more rapidly than the pulse.

Emotions cause sleeplessness by raising the blood-pressure, the arterioles contracting. In anemia insomnia is due to want of tonicity of the vessels, the blood which gravitates to the lower extremities in the erect position flows to the brain on lying down; these patients may complain that while standing or sitting they are sleepy, but on lying down they become wide awake. In these cases a little food in the stomach with strychnin or digitalis will often give a good night's rest.

In mania and melancholia insomnia is very marked and difficult to treat. In an article on "Blood-pressure and its Relation to Insanity" I showed that in mania there was an increased volume of blood passing through the brain with but slight or no increased intracranial pressure, producing increased mental activity with dilation of the cerebral arteries to such an extent and for such a length of time that they lose their tonicity and are unable to contract even when the heart action is reduced. In simple melancholia there is a decreased volume of blood passing through the brain, but also an increased intracranial pressure; the proportion of venous to arterial blood being increased, lessened mental activity and depression is produced. In melancholia agitata there is an increased volume of blood through the brain with increased pressure, producing mental activity with depression. It is evident that these diseases require different treatment to bring about the conditions necessary to normal sleep.

In order to compare more easily the conditions of normal sleep and the causes of insomnia with the physiologic action of hypnotics the following summary will be of advantage:

The conditions of sleep are: 1. Dilation of the peripheral and abdominal vessels. 2. Increased proportion of venous to arterial blood. 3. Slowing and weakening of the heart's action. 4. Reduced quantity of blood circulating through the brain. 5. Reduced blood-pressure. 6. Decreased elimination of CO₂. 7. Increased absorption of oxygen. 8. Exclusion of external stimuli which produce activity of the vasomotor center. 9. In sleep consciousness is lost; the vasomotor system recuperates. 10. The spinal cord does not sleep and only portions of the brain, though the reaction to external stimuli is reduced.

The causes of insomnia will naturally be the opposite of the above conditions: 1. Unusual irritability of the vasomotor system. 2. Excessive physical work

which stimulates the heart to such an extent that it fails to subside to normal. 3. Excessive mental work which produces dilation of the cerebral vessels for such a length of time that they become paralyzed, losing their normal tone. 4. Anxiety, worry, intense joy, which stimulate the vasomotor nerves, contracting the arterioles, and which may produce dilation of the right heart. 5. Anemia in which the vessels have lost their tonicity.

The question as to whether hypnotics produce normal sleep is of very great importance considering the liberal manner in which they are prescribed by the physician and used by the laity without supervision.

Opium is probably most used even when there is no pain, and it certainly does not produce the conditions necessary for normal sleep. It has a specially depressing action on the respiratory center. It stimulates the heart causing the heart muscles to dilate more during diastole and to contract more during systole, increasing the amount of blood forced through the circulation. It contracts the arterioles especially in the splanchnic area, and this contraction may be so great as forcibly to dilate the vessels of the skin. The cerebral faculties are at first stimulated by the increased blood supply, it then blunts the perceptive and the sensory centers and impairs the conductivity of the afferent nerves. It is thus evident that instead of producing the conditions for normal sleep opium causes unconsciousness by intoxication which may or may not be followed by sleep; the centers of consciousness are not at rest but poisoned. As the drug is eliminated by the intestines with great rapidity (morphin given hypodermically is found in the stomach two and one-half minutes after injection) the patient may or may not sleep after its effect has worn off. In insomnia from loss of tone of the vessels, opium may produce sleep, but strychnin and digitalis are more certain. An occasional dose of opium is practically harmless, and the beneficial effect of the drug in neurasthenic melancholia is well known, but if it is going to be of value the favorable action is soon evident. The custom in some institutions of keeping patients on opium for months, raising or lowering the dose according to indications, cannot but be harmful, as long-continued use of the drug permanently blunts the perceptive and sensory centers.

Paraldehyd produces a condition resembling sleep and is described as being perfectly harmless. It is said to be antispasmodic, diuretic, but not diaphoretic, consequently it does not dilate the arteries of the skin; it also strengthens, though it slows the heart. I have seen a victim of the paraldehyd habit, who, upon failure to get his dose was thrown into an intensely nervous condition resembling mania. Gradual reduction of the drug was impossible as the patient missed the odor and knew at once when the dose began to get low, finally the drug was stopped altogether and after a week of maniacal excitement he recovered. Another patient took a very large dose with suicidal intent or through ignorance. He lay for two days in a comatose condition and could only be aroused with difficulty; the heart action was very weak and for the first 24 hours it was doubtful if he could survive; he ultimately recovered. A third instance was an alcoholic, who had been taking a nightly dose for some weeks; he developed a mild attack of acute uremia with edema; on stopping the drug without any treatment the elimination of urea rose to 84 grams in 24 hours, and the total quantity of urine to 2,500 cc. In a few days the edema disappeared.

Chloral produces effects which are more likely to produce natural sleep; it depresses the heart, dilates the peripheral vessels, lowers arterial tension, but decreases oxidation and lowers temperature. It seems to have a selective action on the brain cells, producing sopor, which may, however, be due to the cerebral anemia. In some cases, probably of anemia with want of tone of the vessels, it produced headache and insomnia. It is also said to increase the fluidity of the blood and to crenate the red corpuscles. Although its physiologic action

comes near producing the circulatory conditions of normal sleep it must act as a poison, for the chloral habit soon shatters the constitution.

Bromids reduce blood-pressure and diminish the caliber of the vessels, showing that their action must be to reduce the output of the heart and not to dilate the vessels, they also reduce respiration and slow and weaken the heart, being a direct nerve poison, producing sluggish reflexes and defective coordination.

Hyoscin hydrobromate acts upon the spinal and cerebral cortex, having little direct effect upon the circulation. Its prolonged use is apt to derange the mental faculties, and may be responsible for the mental impairment which so often follows the so-called gold-cure for alcoholism.

Sulfonal and trional are probably more used than any other hypnotics, both by the profession and the laity. Potter, quoting Squibb, says that if it were not for the very evident advantage of sulfonal, when used with care and under medical supervision, it would probably either be excluded from practice, or its sale restricted by legislative authority. It produces its hypnotic effect by direct action on the brain cells and upon the red corpuscles by dissolving lecithin. A dose of 1.3 grams (20 grs.) is invariably followed by a large amount of hematoporphyrin in the urine, showing a marked destructive power on the erythrocytes.

The other hypnotics on the market have practically the same effects as those mentioned; that is, they produce sleep by intoxication, and are therefore poisonous. The physiologic action of the bromids, and of chloral, come nearest to producing normal hypnotic conditions, but their toxic effects are well known. I have seen several insane patients slowly succumb whom, if sedatives had not been used so freely, I believe might at least have been saved from death. I have also observed a patient who remained in an active maniacal condition for four months; no sedatives or very few were given, and the patient apparently slept but very little during that time, yet complete recovery ensued.

There are many mechanical and physical methods, which, with attention to details, will obviate the use of hypnotics, or at least enable the patient to sleep with much smaller doses than are usually given. Kraepelin, in discussing some of these methods, says that if the patient does not sleep after their intelligent application it is improbable that he will sleep with drugs.

The hygiene of insomnia is a matter of very great importance, and the following details should be carefully attended to before recourse is had to drugs: The bedroom should be large and well ventilated, as it is necessary to keep up the maximum quantity of oxygen in the inspired air. To attain this the carbonic acid gas eliminated must be removed as rapidly as possible and fresh air admitted. To attain this, it is best, when the bed can be so placed as to prevent draughts, to keep the window open at night; a common expedient in Europe is to remove one or two panes of glass and substitute moderately fine wire gauze. As the object to be attained is to increase the peripheral circulation, the body should be kept warm, in certain cases an extra wrap around the abdomen and hot water bottles to the feet will have a very good effect. The head and neck should be exposed, so as to decrease the circulation, and the temperature of the room should be about 60° F., unless there is some special reason for keeping it higher. In the modern artificially heated bedroom these conditions are rarely observed, with the result that the sleeper rises in the morning with a tired, suffocated feeling.

The influence of light on metabolism is well known. Fabini and Ronchi have shown that much less CO₂ is eliminated in the dark while the patient is awake than in daylight. This has been confirmed by experiments on animals reported by Moleschott, Platen, Seloni, and Piacenti. Platen found further that animals whose eyes

were closed with diachylon plaster eliminated a reduced quantity of carbon dioxide. Light increases external stimuli, therefore the metabolism stimulating consciousness is directly antagonistic to sleep.

Another point of considerable importance is to reduce the mental activity for at least one or two hours before going to bed; the patient should abstain from study, reading, or playing any game which requires mental exertion or excitement, in order to decrease the blood flow through the brain as well as the heart's action. The evening meal should be eaten at least four hours before retiring, and neither tea nor coffee should be taken, chocolate being a good substitute. At bed time a glass of hot milk with a sandwich or a few crackers will, by stimulating the stomach, withdraw the blood from the brain to the abdomen; a glass of hot whisky and water is often a very effective and acceptable hypnotic.

A bath immediately before retiring is often very helpful. The bath-room should be about 65° to 70° F., and the patient should first douche the head and face with water at 100° F., then entering the bath immerse the whole body except the head and neck; the temperature of the bath should be 98° to 100° (if the water is below 96° or above 105°, the peripheral vessels will contract with resultant hyperemia of the brain instead of anemia); five or six pounds of common salt dissolved in the bath is beneficial. The patient should remain in the bath from 10 to 20 minutes, until the pulse-rate falls, and then should be lightly rubbed down and put to bed with as little exertion as possible; a warm bottle to the feet after the patient is in bed or a bandage around the abdomen will often be found of value. A tablet of nitroglycerin, or better, erythrol tetranitrate is a good addition given after the patient is in bed. Sir William Broadbent advises a hot water bottle to the back of the neck as tending to produce local hyperemia; standing in cold water and then rubbing the feet with a rough towel is also recommended. In severe cases the wet or dry pack is of great benefit; the head should be kept cool with a Leiter coil, this being much more satisfactory than the ice-cap, and not so severe.

In cases of neurasthenia in which loss of arterial tone is a marked condition, and in anemic conditions in which the mean and maximum pressure is low and there is a reversed postural change of pressure, small doses of digitalis will often be sufficient to produce natural and quiet sleep; opium in small doses sometimes acts well in these cases.

In acute mania with low mean and maximum blood-pressure, heart stimulants are indicated; but in chronic mania when there is very high mean and maximum pressure, they are useless, and opium is especially counterindicated. In these patients the cerebral vessels are dilated to their utmost capacity, the pulse is rapid and the heart strong, the rapidity of the circulation being enormously increased. Opium in such cases contracts the abdominal vessels, forces more blood through the brain, as it continually flows in the channels of least resistance, while at the same time the heart force is still further increased; Schott baths combined with small doses of bromid, chloral, or nitroglycerin will usually calm the patient and produce sleep. If he can be kept in the bath for any length of time without struggling or exertion, it will usually prove sufficient without drugs; often the administration of 0.6 mg. ($\frac{1}{100}$ gr.) hyoscin hydrobromate, with the bromid before the bath, will make him amenable. If the bath cannot be given without struggling, it had better be dispensed with; but it is rare that the patient does not appreciate the bath and appear to find comfort while in the tub.

It is not my intention to argue for the abolition of hypnotics; on the contrary, there are some cases in which they are absolutely necessary; but in my opinion it is much more rational and better to endeavor to produce the conditions necessary to natural sleep than to give a poison which produces unconsciousness and not

sleep, and which must be detrimental to the patient. Before prescribing a hypnotic, the physician should make up his mind what is the cause of the insomnia, and not, as is too often done, prescribe without any attempt at diagnosis of the physical cause.

THE OCULAR COMPLICATIONS OF VARIOLA.¹

BY

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This communication is based upon a series of observations made in the course of the epidemic of variola that visited Philadelphia in the years 1901 and 1902. In addition to the opportunities for study obtained elsewhere on earlier occasions, I was repeatedly called into consultation by Drs. William M. Welch and Jay F. Schamberg at the Municipal Hospital. To the courtesy of these gentlemen I am indebted for the facilities afforded for a personal study of the cases under their care and for other data which have enabled me to present a complete report of the ocular complications found in variola.

Variola is a disease with which the ophthalmic surgeon of the present day only rarely comes in contact, for since Jenner's discovery it is no longer the general scourge it was, and the destructive effects on the ocular tissues are less than in former times. Then, too, early recognition of the disease and therapy of the ocular lesions have been insisted upon in recent years with the result that fewer cases are seen to progress to the degree so commonly noted in past years.

In spite of this, ocular affections are quite usual in variola, attacking almost every portion of the visual apparatus. They appear oftentimes in the acute stages of the disease; again, they may not appear until convalescence, and they are frequently found for the first time as a sequel.

In the analysis of over 2,000 cases at the Municipal Hospital of Philadelphia, there were 36 instances of corneal ulcer, 17 of which were followed by perforation with destruction of one eyeball, and 15 were cured without perforation. Of these cases 15 were in unvaccinated individuals, in 6 others vaccinated at periods more or less remote the lesions were less severe. Pustulation of the lid borders was a common affection; conjunctivitis was frequently found with it and was also found independently; especially to be noted were 10 cases of iritis.

The report of the ocular lesions occurring in variola is necessarily incomplete scientifically, because of the difficulty in studying satisfactorily the eyes of infected persons and the impossibility of keeping track of the individuals after their discharge from the hospital. This incompleteness is increased by the fact that in several cases in which continued observation has found intraocular lesions, it is almost impossible to determine whether the conditions noted are due to the specific variolous infection, or whether they were present prior to the onset of the exanthem.

In taking up the systematic consideration of the action of variola on the parts of the eye, we find that the skin of the lids is commonly a site of the pustular eruption. So much swelling of the tissues may accompany the eruption that the eyes cannot be opened for several days. In such cases severe conjunctivitis is usual and often leads to corneal ulceration. The edges of the lids are liable to ulceration and the subsequent cicatrization distorts them, so that styes, misplaced cilia, eversion of the lids, adhesion of the lids, or occlusion of the meibomian ducts, etc., may result. The lids, like other portions of the skin, may be, after the subsidence of the eruption, the seat of abscesses which produce various

deformities requiring operation later. As to the mucous membrane of the lacrimal passages, pustules may also form there and give rise to acute, and later chronic inflammation of the canal and duct. On the orbital borders periostitis with caries occurs but rarely.

Passing on to the conjunctiva, we find that as in other febrile diseases it is commonly affected. Inflammation develops about the fifth day of the eruption; the conjunctiva appears congested and occasionally presents a catarrhal inflammation which is usually of moderate severity and of brief duration, yielding in a few days to treatment. An exception to this appeared in a young man recently under treatment, in whom severe conjunctivitis began on the seventh day and in spite of careful treatment persisted over a month.

The intensity of the ophthalmia is related directly to that of the pustular eruption in general, and more particularly to that of the eruption on the face and eyelids. On the conjunctiva, pustules form but rarely; among the 2,000 patients with variola examined by us in 1901 to 1902, they were noticed in only two or three instances. When they do occur, these pustules much resemble in appearance and course the phlyctenular eruption observed in strumous children. They are the size of small lentils, elevated but slightly, and usually situated midway between the corneal margin and the inner and outer canthus. They appear sometimes at the limbus, and when there frequently cause ulceration of the cornea. On the tarsal conjunctiva pustules may be found at the inner fold and on the caruncle, but never at the fornix. In these cases the conjunctival inflammation markedly resembles that of gonorrhoeal infection; the inflammation is always severe and is accompanied by profuse secretion and chemosis. Subconjunctival ecchymosis may occur and may produce intense chemosis in hemorrhagic variola. The bacteriologic examination of the conjunctival secretions showed the presence of no specific or hitherto undescribed organisms, but there were present in abundance staphylococci, streptococci, and pneumococci.

The cornea, according to other observers, is not subjected to the specific lesions of variola, and our experience in the treatment of over 7,000 patients leads us to accept this conclusion. Ulceration of the cornea does occur, but it is usually independent of the general process, being rather a consequence of the conjunctival affection. And now, just as in past times, it is the most fruitful cause of blindness as a sequel of variola.

The corneal complications may arise in two ways: First, either without pustules on the conjunctiva or by pustulation, especially when this is at the limbus; second, during the stage of desiccation when the contagion is transmitted from some broken-down pustules—as, for instance, those of the skin of the eyelids.

The corneal inflammation may be only a slight superficial haze confined to the corneal conjunctiva or Bowman's membrane, or it may extend rapidly and involve the entire membrane. Commonly, near the margin of the cornea is seen a small phlyctenular bleb, filled with clear fluid, the thin and delicate covering of which is soon macerated by the increased conjunctival discharge and the vesicle is ruptured, exposing an area of necrotic tissue of greyish color. The symptoms of pain and redness, although usually marked, vary in intensity and duration. As the ulcerated surface spreads the several layers of the cornea are involved until the membrane is perforated, and then the aqueous humor escapes and prolapse of the iris follows. At this time the painful symptoms abate. In bad cases pus forms in the anterior chamber, or the crystalline lens and the vitreous humor may be extruded, panophthalmitis developing from a general suppuration of the eyeball, accompanied by great pain, with marked bulging of the lids. Fortunately, the majority of cases present a milder form of keratitis. In this there is only a circumscribed superficial inflammation, which heals promptly and leaves the

¹ Read before the Philadelphia College of Physicians, February 4, 1903.

eye damaged only by the formation of an opacity as the result of the cicatrization of the necrosed area. These scars cause marked irregular astigmatism, which greatly interferes with the acuteness of sight.

In severe cases of confluent variola rapid destruction of the cornea may take place as early as the eighth day. It is usually a forerunner of fatal collapse. In some instances both eyes are affected. As an example of this, four patients in our own wards sank rapidly after the destruction of both eyes at an early stage of the general disease. In these cases it was noted that the ulceration was preceded by a greyish infiltration of the bulbar subconjunctival tissues; this chemosis rapidly increased, rising above the cornea and surrounding it, choking off its circulation. Immediate destruction of the cornea followed—a true keratomalacia. In certain instances the chemosis is so great as to produce an edema of the subconjunctival and subcutaneous tissues, even to such an extent as to make it almost impossible for the lids to be opened.

It was our experience to find the ulceration of the cornea less extensive in size and degree in the case of those who had been vaccinated; consequently the healing was more prompt and the sequels were less damaging to the integrity of the eyeball.

Parenchymatous keratitis after variola has been reported by but few observers. We observed two cases. The first was in a young man with confluent variola who developed about the seventeenth day a general haziness of the left cornea. This gradually improved, leaving a slight opacity behind it. About two weeks later an ulcer developed upon this site without, however, producing serious complications. The second was in a young woman, aged 19, heretofore of apparent robust health. With her marked corneal haze was noticed in the third week of the general disease. Her convalescence was prompt, yet on discharge from the hospital there was noticed well-defined interstitial infiltration and iridocyclitis associated with it. For two months she has been under treatment and her progress toward recovery has been rapid.

The uveal tract is not so frequently affected as the cornea. In our examinations we noted ten cases of iritis, not plastic in form, but of the serous type; this condition was especially marked in hemorrhagic variola. Other observers have noted iritis developing after the subsidence of the general symptoms. Slight pericorneal injection has been sometimes noticed in the first week, accompanied by lachrimation, photophobia, tenderness, and a small immobile pupil. Although this ciliary irritation may be an independent affection, it is usually a symptom of corneal or iritic disease. It appears to be more frequent in the milder cases, and may persist for a considerable time after the termination of the attack of variola. Choroiditis was revealed only by the presence of opacities in the anterior or posterior part of the vitreous. We have had the opportunity of studying the ocular conditions of a vigorous young man for several weeks after his discharge from the hospital; in each eye were numerous floating vitreous opacities, which rapidly lessened as he regained strength.

In none of the cases examined did we find circumscribed choroidal inflammation, nor did we see posterior polar cataract. We can report no cases of glaucoma due to variola, nor any cases of retinitis or neuroretinitis. But all these have been reported in the literature of variola by other observers.

While renal disease in the course of the variolous attacks was commonly observed, yet it did not progress far enough so that we were able to record any real cases of albuminuric retinitis. And patients with pronounced uremia sank into a coma so rapidly that it was impossible to ascertain whether or not the uremic condition had affected the retinal sheet, although it probably had. In hemorrhagic variola there is no reason to doubt the occurrence of hemorrhages into the retinal sheet and

very probably hemorrhages into the optic nerve may occur. We have not been able to find any such cases reported as actually observed, but Knies is of the opinion that such hemorrhages must have been the cause of some of the affections described as neuritis with and without stasis, and with and without termination in atrophy of the optic nerve.

Meningitis as an undoubted sequel is rarely found, but we have come in contact with cases of meningitis for which no logical cause could be found except a far distant attack of variola.

ANGIONEUROTIC PURPURA.*

BY

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There still exists considerable confusion in the classification of the various forms of the hemorrhagic diathesis, and this confusion is largely due to the uncertain etiology and pathology of these conditions. The subject has recently been brought to my attention by the difficulty of an exact diagnosis in a somewhat unique case.

The hemorrhagic diathesis may be either congenital or acquired. The congenital form, or hemophilia, is seldom difficult of recognition, for in the majority of cases the history shows a marked hereditary tendency, which, together with persistent bleeding from insufficient causes and occasional joint involvement, form a syndrome which can scarcely be misinterpreted. But the acquired forms, as manifested in the several varieties of purpura, scurvy, and in association with numerous infections and toxic disorders, may give rise to considerable difficulty in diagnosis.

Etiology.—The deficient pathologic knowledge of these affections necessitates an unsatisfactory etiology. Johnson¹ divides the causative factors into three general classes: infectious, toxic, and vasomotor. The work of W. Koch, Kolb, Babes, Giovannini, and Gärtner suggests very strongly an infectious origin in many cases as bacilli have been found in those suffering from the diseases, which are pathogenic to animals and cause in them a condition characterized by hemorrhages. It has been further suggested that the hemorrhages are produced by changes in the vessel walls, due to a localization of the bacteria themselves, and the consequent effects of the elaborated toxins.

Breton² concludes that in some cases of toxic origin the source is an autointoxication arising from the intestinal tract. Osler is inclined to recognize a relationship between Henoch's purpura and angioneurotic edema. Syers³ considers the condition allied to scorbutus and due in many cases to poor, unhygienic conditions, and insufficient and improper food. Henoch has suggested the vasomotor origin of purpura in which there is first a paralytic distention of the small vessels, followed by stasis, hemorrhage, or edema. Such an irritation or paralysis of the vasomotor nerves may be either central, peripheral or reflex in origin.

Pathology.—The exact pathology of this condition is unknown. Cassel, Riehl, and Wilson have described an endarteritis occurring in the smaller bloodvessels. This is undoubtedly dependent upon some alteration in the blood itself. Cheyne, Martin de Gimaud and others have described emboli and thrombi in some of the grave and undoubtedly infectious cases. However, nothing definite in the form of characteristic pathologic lesions has been described.

The case at hand is one which presents some remarkably unique features and which upon close observation and study has emphasized to me the close relationship between Henoch's purpura and angioneurotic edema—as suggested by Osler—and leads me to suggest a diagnosis,

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based upon the apparent etiology in this case, of *angio-neurotic purpura*.

CASE.—Hattie D., aged 15, was admitted to the Orphans' Home five years ago. Her maternal grandmother lived to the age of 72. The history of the other grandparents is unknown. Her mother died at 45 of pulmonary tuberculosis. Father died at 50 of disease of the heart and kidneys. The patient is one of six children, all the others being alive and in good health. She was reared in a desperately poor family. She cannot remember when she did not have profuse hemorrhages from the nose and mouth. During the last five years she has had whoopingcough, scarlet fever and measles with apparently good recovery. Two years ago she had a tooth extracted and the cavity oozed and bled for over two weeks—resisting all efforts to stop it. Other injuries, such as scratches and cuts, do not manifest any excessive hemorrhage. Menses appeared for two days at the age of 9 and then ceased until nine months ago, when they reappeared and she flowed for two days. She has had no periods since that time. There is very faulty sexual development—partial development having occurred only during the past six months.

Since coming to the home five years ago the patient has had several attacks each year, in which the entire body becomes covered with purpuric spots, varying in size from petechiæ to large ecchymoses the size of the palm. These are most abundant over the abdomen and limbs, although no area is exempt. Beneath the eyes a heavy effusion of blood often appears, suggestive of a vicarious menstruation. The limbs and face become edematous.

The last attack began Christmas night, succeeding as a climax the excitement and emotion of the day. For weeks previous to this time the patient had been almost covered with purpuric areas, while the intervening spaces were a pale, creamy white. Just before the external hemorrhages began there was considerable nausea and vomiting with severe colicky pains in the stomach—gastric crises, considerable dizziness, and much bloating of the abdomen. Temperature rose to 104.5°-105°. Pulse and respirations increased and suddenly epistaxis, profuse and intractable, began. Hemorrhage then followed from the lips and mucous membrane of the oral cavity. Fresh blood mixed with a frothy mucus was raised from the lungs and vomited from the stomach. Fresh blood was also passed from the rectum. The spots gradually faded and disappeared completely in four days. Anemic heart murmurs were present and the patient was greatly prostrated. All efforts at feeding were futile and vomiting and retching persisted almost continuously. On January 22, when the patient came under my close observation, the temperature still persisted over 102.5°; pulse 142; respirations 60. Entire body was a cold, creamy white. Spleen was considerably enlarged. There were no purpuric spots or edema present. The mucous membrane of lips showed many hemorrhagic spots. Efforts at nutrition were almost vain, due to continued emesis. Several examinations of the urine revealed no albumin, only a slight excess of urea and uric acid. Blood examination, January 29: Reds, 1,376,000; whites, 8,340; hemoglobin, 20%. Stained specimen showed a moderate poikilocytosis, some endoglobular degeneration, oligochromia, microcytes, macrocytes, few normoblasts, and several megaloblasts in each specimen examined—the picture of a pernicious anemia. The coagulability of the blood was increased, clotting almost immediately upon exposure to the air.

This history undoubtedly suggests purpura hæmorrhagica and Henoch's purpura. The symptom complex, however, is not characteristic. It may, in general, be summarized as follows: (1) Relapses or recurrences extending over several years; (2) cutaneous lesions of a clearly purpuric nature; (3) gastric crises, intestinal crises, pain, vomiting, and diarrhea; (4) marked general hyperesthesia with an angioneurotic edema of extremities and face; (5) hemorrhages from the mucous membranes; (6) the blood picture of a pernicious anemia.

In many ways this case resembles the purpura described by Henoch—but the cutaneous lesions are clearly those of a purpura either simple or hemorrhagic, and not in the least an erythema multiforme. There has been at no time the slightest symptoms of joint involvement. The marked vasomotor disturbances would in a way remove the case from Henoch's type. It has, too, a marked similarity to purpura hæmorrhagica, yet presents certain marked differences: (a) its recurrent nature over a period of many years; (b) the marked gastrointestinal crises; (c) the pronounced nervous disturbances manifested in the edema and hyperesthesia. Bruce and Galloway⁴ have described a form of factitious purpura in which any irritation of the skin, such as might be caused

by drawing the finger-nail over it, produced a white line which almost immediately became pink, and later, intensely purpuric.

To summarize, then, the apparent etiology in this case, there was from earliest childhood the most unhygienic surroundings and poor and improper food, which during the developmental period undoubtedly caused a disturbed metabolism. There was probably some pre-disposition to a hemorrhagic diathesis as manifested by the frequent and profuse epistaxis of early childhood. Disturbed nutrition and metabolism affected the composition of the blood and the activities of the blood-forming organs. The altered composition of the blood produced changes in the bloodvessel walls, such as an endarteritis or anemic degeneration. The disturbed metabolism affecting the nervous system, either through malnutrition of the nerve tissue or through autointoxication, produced a vasomotor neurosis. The fact that the various hemorrhages were almost invariably precipitated by intense excitement or emotion points strongly to a vasomotor factor. Whether the blood in the purpuric spots is in a condition of stasis due to a paralysis of the vasomotor nerves, or whether it passes per rhexin or per diapedesin into the surrounding tissues, it is perfectly evident there is present a phase of angioneurosis. The blood changes strongly suggest disease of the blood-forming organs, especially the bone marrow. But whether the condition is idiopathic there or whether it is secondary to the long-continued and excessive loss of blood, and the consequent heroic efforts at regeneration, must needs remain an interesting problem. The factitious edema which may be produced during the periods of purpuric eruption—before the occurrence of hemorrhages—and the transient hyperesthesia, strongly suggest an angioneurosis of a cumulative and temporary character, perhaps due to the cumulative increase of metabolic products leading to an autointoxication.

The angioneurotic character of this condition seems especially apparent in this case, and the fact that the element appears more or less strongly in cases reported by Bruce, Galloway, Couty, and Henoch, leads me to venture a diagnosis of angioneurotic purpura—probably of toxic origin, possibly due to autointoxication.

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LIMITATIONS OF THE DIMETHYLAMIDOAZOBENZOL TEST FOR FREE HCl IN THE STOMACH CONTENTS.

BY

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The use of dimethylamidoazobenzol as advocated by Topfer as an indicator for the determination of the free hydrochloric acid of the gastric contents has been much criticised as to its accuracy and usefulness in clinical work. Much theorizing has been done and many contradictory statements made by various writers.

Dimethyl is a yellowish powder soluble in alcohol and is used in a 0.5% alcoholic solution or is used in the form of test-papers made by pouring the solution on white filter paper and allowing it to dry. It is ordinarily yellow but turns red in the presence of a free mineral acid. The volumetric test is made by using the dye as an indicator in a measured specimen of gastric filtrate and titrating with a decinormal solution of sodium hydroxid until the color changes. Töpfer claims that

dimethyl reacts only to free mineral acids and acid salts and in this Friedenwald¹ agrees with him. M. I. Knapp² and Platt³ have both recently published articles declaring that dimethyl reacts to other substances than mineral acids. Einhorn⁴ has undoubtedly proved that lactic acid, even in the quantities sometimes found in the gastric juice, will give the typical reaction with this indicator. In regard to this, however, Hemmeter⁵ says: "It is true that in the presence of lactic acid amounting to 0.2% or more in the gastric juice this test yields a red color resembling that due to inorganic acids; but the objection is more theoretic than real, as the presence of such an amount of organic acid seldom occurs in the stomach, and in the presence of proteids and peptones, mucin, etc., still stronger solutions of the organic acids are required to produce the characteristic reaction." Van Valzah and Nesbit⁶ practically arrive at the same conclusion.

That this method is not absolutely accurate I do not deny, but what we want to know is whether it is applicable to clinical work or not; will it serve our purpose for rapid volumetric analysis of the gastric juice, or will we have to look further for some other indicator? Within the limitations defined in the conclusions laid down at the end of this article, dimethylamidoazobenzol will act perfectly satisfactorily as an indicator for free HCl.

Almost all of the writers on the use of dimethyl have left out one of the most important factors in the making of a diagnosis, namely, *the physical examination of the abdomen of the patient*. In every case our conclusions will be modified by the size and location of the stomach, as well as by the tests for its peristaltic function. Knapp² says that dimethyl will react to free organic acids. That is so only when they exist in large quantities, and if on examination we find the size and position of the stomach normal and its peristaltic power unimpaired showing no retention of food, certainly we may suppose that very little organic acids are present, and then our dimethyl will answer every requirement.

On the other hand, suppose we find, on examination, the stomach dilated with retention of food beyond the usual time; then we would suspect the presence of organic acids and could use Gunzburg's or Boas' reagents to determine whether our dimethyl reaction was caused by organic or inorganic acids.

The reaction obtained from any chemical test of any kind must be corroborated by the physical examination of the patient. If albumin appears in the urine we should examine our patient for the other symptoms and signs of nephritis, and so we should examine our patient physically in all diseases of the stomach, and not try to make our diagnosis in the laboratory from the gastric analysis alone.

The following conclusions may then be drawn in regard to the use of dimethylamidoazobenzol as an indicator for free hydrochloric acid:

1. If the test for lactic acid is positive, Gunzburg's or Boas' reagents, or some other method, should be used to determine whether our dimethyl reaction is due to lactic acid or to free HCl.

2. If the stomach is normal both as to size and position and the peristaltic function is unimpaired, then dimethyl will give fairly accurate results.

3. If the size and position of the stomach are not normal (gastroectasis or gastropnoia), or if the peristaltic function is delayed, then Gunzburg's or Boas' tests should be first performed to test positively whether free HCl is causing the reaction, or whether it is caused by organic acids, before proceeding to titration with dimethyl.

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SPECIAL ARTICLES

INFECTION AS A FACTOR IN TUBERCULOSIS.

BY

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A most interesting backward swing of the pendulum of medical thought upon the tuberculosis problem has recently become noticeable. Up to the publication of Koch's epoch-making discovery and conviction of the bacillus, we had necessarily concerned ourselves almost solely with but one of the two great factors in any problem of infection—the soil. The discovery impelled us at once toward the other extreme—the almost exclusive study of the seed.

The gain which has ensued can hardly be overestimated, definite conceptions of the disease and its varying processes and distribution in the body, accurateness and promptness in diagnosis, effectiveness in guarding against its spread, all have become for the first time possible. But with all these advances upon the pathologic and botanical side of the problem, the study of the bacillus alone has been singularly barren of therapeutic or even hygienic results. Indeed, it would be hardly too much to say that in our actual treatment of the tuberculous, whether in the private consulting-room or the hospital ward, we practically ignore the bacillus, except as a means of diagnosis and as a possible source of infection to others, reluctantly as we have been driven to do so. And even in these regards its therapeutic value is rapidly declining, for the clinician who waits until he can clinch his diagnosis of tuberculosis by the sputum test has lost the most valuable weeks or months in the whole history of the disease and nearly half his chances of effecting a cure. Enormously valuable though it is as a means of corroboration and of verification with mathematic accuracy, the man who cannot make a diagnosis of tuberculosis without without his microscope is unfit to practise medicine.

The ignominious failure of every germicide from Bergeron's hydrogen disulfid to creasote, the bitter disappointment of fond hopes raised by announcement of every new modification of tuberculin, the "innocuous desuetude" into which the whole family of "antis" and serums has fallen, one after another, have at last started the pendulum upon its return swing, and again the study of the soil is assuming a proper relative, if not a dominant, importance. The more readily since the only method of treatment which has proved of the least permanent value, which will cure alike in the absence or in spite of the presence of drugs, which like charity, both never faileth and covereth a multitude of polypharmaceutical sins, the great elemental open air and overfeeding treatment, owes its victories solely to its effect upon the resisting power of the soil.

A most accelerating tap was given to this return movement of the pendulum by Koch's bold pronouncement of two years ago, the echoes of which are still resounding round the world.

I may perhaps be pardoned for confessing to a special interest in Koch's announcement for the reason that I had been led to a precisely similar conclusion, nearly two years before, from a comparative study of tubercle in the mammals and birds of the London Zoological Society's Gardens, upon grounds described in my monograph¹ on comparative pathology, published late in 1900. It was naturally no small gratification to a mere tyro in the pathologic field to have his tentative conclusions confirmed by the great master of the subject and discoverer of the bacillus in question, but Koch's announcement was far less of a surprise than the storm of protest and shrieks of dismay with which it was received by the medical world. The identity, or even close relationship, of human and bovine tubercle bacilli had been a matter of grave doubt and a debatable ground of research to all pathologists who had had opportunities of observation of both types of the disease, for at least five years past, ever since the masterly and original researches of Theobald Smith, to whom indeed the credit of the discovery of the nonidentity of the two species and of their consequent pathologic processes is really due rather than to Koch. His

second paper, in 1898, is far the ablest and most convincing document upon the subject that has yet appeared.

Indeed, the most astonishing thing about the pronouncement is the calmness with which the great man either ignored or barely referred to all who had anticipated him in his discovery, and the superb *non sequitur* by which he reached his practical conclusion—a conclusion which Adami has justly termed “little less than criminal”—that meat and milk inspection might hereafter be dispensed with.

Both of these show, however, foibles characteristic of the master, a marvel of logic and insight in his pathology, hopelessly at sea in his therapeutics, superbly right as to the bacillus, lamentably mistaken as to tuberculin, right as to the widespread influence of the hematizoon malarie, disastrously at fault as to the quinin-causation of blackwater fever.

I refer purposely to this aspect of the problem at the very outset, as it cannot be made too clear that even those of us who entertain grave doubts as to the communicability of bovine tuberculosis to human beings are utterly at variance with Koch in his astounding practical conclusion from this premise.

Now that the first fiery battle has in a measure abated and nearly all the great guns have been heard, it may not be without interest to sum up very briefly the result of all this artillery.

The responses naturally come from those classes of observers—the pure veterinarians, the pure human pathologists, and the comparative pathologists—who have had practical experience, both clinical and pathologic, among both men and animals. The first class is almost unanimously and hotly opposed to Koch's view; the second in the main opposed, and the third, which, if I may be pardoned for saying so, is alone fully qualified to judge, either in doubt, or in more or less substantial accord with it.

The first and most significant result is that the two observers who alone possess the naturally and necessarily rare distinction of being recognized authorities in both bovine and human tuberculosis, Adami and Theobald Smith, either confess grave doubts as to the communicability of bovine tuberculosis to man, or regard it as a rare and unusual occurrence. I may seem to be too strictly limiting this class of authorities and attaching too much relative weight to their opinions, since all pure human pathologists are of course familiar with the lesions of experimental tuberculosis in several species of animals, and all veterinarians see occasional cases in other than the bovine group. My reasons will be fully explained later, but may be briefly phrased here, in that the human pathologists deal solely with the inoculated and not with the naturally acquired disease in animals, a point of gravest and most fundamental importance in this problem; that they can observe only pathologic and not clinical symptoms, the early stages of “natural” invasion being “short-circuited” and the later aborted by killing the animal just as soon as the lesions are sufficiently advanced to make a sure diagnosis possible.

Veterinarians, on the other hand, are almost as completely restricted to bovine tuberculosis as we are to human, all other domestic animals together furnishing less than 5% of the cases they see, and of course they see nothing professionally of the human disease. They are also almost as seriously handicapped in the study of the complete clinical picture of the disease as are experimental pathologists, since the diagnosis is difficult to make in the early stages and the “patient” is usually promptly slaughtered as soon as the disease is clearly developed.

For instance, I have been trying for years to find out from my numerous and most courteously helpful veterinarian friends what the average duration of the untreated disease would be in cattle, and can get no data adequate to base even a fairly probable estimate upon.

And the problem I respectfully but firmly submit, with all possible recognition of the light which has been and still will be thrown upon it by bacteriology, is *clinical* and not *bacteriologic*: “Is bovine tuberculosis communicated to human beings, and if so, how frequently?”

Now as to the testimony of the pure pathologists, or to speak more accurately, the bacteriologists, the gist of their contributions is, first, that they can, as is well known, inoculate nearly all the animals usually used for experimental pur-

poses with either human or bovine bacilli, and that of the two the bovine appear slightly the more virulent and rapid in their action. In this general result there is substantial agreement, but when we descend to particulars innumerable exceptions crop up at once. Hardly any two species of animals are found to possess the same degree of susceptibility either to the different bacilli or to the same bacillus. Some, like the pig and kitten, can be inoculated by feeding with infectious material from either source (Nocard, Galtier, Peuch, *et al.*), though this is only with viscera or sputum; milk or meat, even in large amounts from condemned carcasses reeking with tuberculosis, being eaten by both these species with impunity. Others like rabbits and calves can be inoculated only with considerable difficulty by feeding. Next come guineapigs, rabbits, calves, and adult cats, which can be inoculated rarely through food, or through filling their cages with sputum-dust, but yield readily (except the last) to subcutaneous or intraperitoneal injections (Nocard, Straus, Gamaleia, *et al.*). Last stand the horse, ass, dog, sheep, goat, and deer, which very rarely contract the disease through food or inhalation, resist subcutaneous, intraperitoneal, and even intraocular injections in 95% of the cases, and yield only to the intravenous injection of huge amounts of infectious material or cultures.

From which one fact, most comforting to us as clinicians and human physicians, stands out clearly, and that is, that while almost any animal can be made tuberculous by flooding its blood-stream with bacilli, a considerable percentage will resist direct inoculation with even large doses and *only a small minority can be infected through their food-supply, or respiratory passages*. Which last, of course, are practically the sole methods of infection to be considered seriously in our own species. Experiments with direct inoculation have no bearing whatever upon this question, for when the bacilli have once penetrated skin or mucous membrane they have broken down an animal's strongest natural barrier. Even the feeble guineapig, which might have been specially created for laboratory purposes, so abjectly susceptible is he to every form and strength of tubercle bacillus,—bar only the avian—never contracts the disease under natural conditions, even in pens under laboratory tables, and is practically impossible of infection through food or sputum dust.

Of direct evidence upon the problem proper they can of course furnish nothing, experimentation upon the actual transference of bovine bacilli to human beings being out of the question upon moral grounds.

For this we are obliged to turn to the third class of observers, the veterinarians. Their testimony is almost unanimously opposed to both the view and the practical conclusions of Koch. In their protest against the latter I cordially and entirely unite, as have also Adami and Smith. First, on account of the glaring *non sequitur* fallacy involved in the position that because human tuberculosis is not communicable to bovines, therefore bovine tuberculosis is not communicable to human beings. Second, because, as I two years ago stated, “We should not tolerate for a moment the use as human food of either the meat or milk of animals suffering from *any* serious disease, nor can we afford to run any risk which is so clearly avoidable.” Indeed, the experiments of Rabinovitsch have since shown that milk from cows with tuberculous udders can produce serious toxic symptoms in both kittens and guineapigs after the complete removal of its contained bacilli by filtration. Third, because the stamping out of tuberculosis in cattle is of almost as great importance and value to agriculturists as the eradication of the disease in our own species would be to the State. Our most rigid and thorough slaughter-house, dairy, and shipping-yards inspections and tests for tuberculosis, with all their apparent loss by condemnation and slaughter, are an abundantly paying investment from a commercial point of view alone, even apart from their sanitary value. This largely accounts for the note of dismay in the veterinarian protest, since inasmuch as nearly all these inspections and safeguards are based upon—and I believe for legal reasons almost necessarily and solely so—the police power of the State, its right to protect human life and health, they see themselves in danger of losing all control of this terrible scourge the moment any serious doubt is thrown upon its danger to human health.

The selfish and unintelligent element among farmers, butchers, and dairymen will of course jump at any chance to have the obnoxious laws repealed or declared unconstitutional, as they certainly would be if Koch's dictum is accepted, not necessarily by scientific men, but by the legislatures and the courts. Of all this Koch must have been perfectly aware, and it is this utter recklessness of the grave dangers to which he was exposing sanitary progress and the public health which justifies Adami's characterization "little less than criminal."

But their testimony as to the actual communicability of bovine tuberculosis to man deserves most careful scrutiny, both on account of its importance and from the fact that it is practically the only evidence which we possess bearing directly upon the question.

This evidence is of three main classes: First, general statements of parallelism, such as Brush's alleged coincidence of tuberculosis with the keeping of dairy cattle, all over the civilized and uncivilized world. The coincidence is surprisingly close and exclusive, and Brush makes out a most plausible defense, but it seems finally to reduce itself mainly to the fact that tuberculosis is rare or unheard of among wild tribes of hunters and nomadic herdsmen, or even civilized ones like the gauchos of the Pampas, who do not milk their cattle, which introduces all the factors of the open-air cure; although there are some cases which cannot be thus explained, as, for instance, its comparative rarity among the Chinese, who use no cow's milk and very little beef. Second and most important, cases in which such communication has actually occurred. Third, the alleged increase of intestinal tuberculosis in children since the wider modern consumptions of cow's milk, while at the same time the disease has been decreasing among adults.

Under the second head quite an array of instances have now been presented by a succession of veterinary authorities headed by Macfadyean, of London (Royal Veterinary College), and Salmon, chief of our Bureau of Animal Industry, and rapidly followed by Ravenel, Repp, Delepine, Holton, Cattle, and others. Each one of these reports from five to twenty cases of alleged transference of the disease by milk.

The first thing which strikes any one who has been watching the literature of comparative pathology for the past decade is that nearly all these cases are old and familiar friends, classic instances which are to be found in all the textbooks; and the more of these recent anti-Kochian reports he peruses the more familiar the case-names become. To make perfectly sure that my memory was not playing me false I have carefully tabulated all the cases reported by the above observers and others since Koch's dictum, cutting out duplicates—or more correctly, triplicates or quintuplicates—and find that the actual total is 37. As this question has been before the medical and veterinary professions for at least 25 years, and several of the most frequently quoted cases date back 20 years, this most inadequate number is really significant. *Thirty-seven* alleged cases in 20 years from the whole civilized world! Granting the validity of every case, human tuberculosis of bovine origin is a rarer disease than leprosy! A disease which numbers but two victims a year is certainly not a serious menace to civilization. It is only fair to add that while of course these figures can by no means be regarded as representing the whole or even the proportional risk of infection from bovine sources, yet in view of the fact that veterinarians have been most alert and watchful for all cases of human disease of this origin, especially since more than half of them have been devoting themselves chiefly to meat and milk inspection—a service of priceless value to the race and which is far from being appreciated as it deserves—and that at least half of these 37 cases are open to most serious doubt of their authenticity,* when carefully studied they do furnish a rough index of its probable frequency.

I see no reason to anticipate that such cases will become any more frequent in the future, for although on the one hand our own profession will be more keenly alert, yet on the other

*Since the above was written Koch has reported that on careful reinvestigation of the most striking apparent instance, that of Olivier, in which five girls in one boarding-school died of tuberculosis and one of the school cows was found tuberculous, it was found that *none of the milk of the diseased cow had been given to the pupils, but had been consumed by the servants, none of whom developed tuberculosis.*

the bacilli from such cases will have to undergo the test proposed by Smith and Koch, of inoculation into cattle. This seems to me a fair requirement in cases of such great importance, although as Adami suggests, their failure to infect cattle would not necessarily disprove their bovine origin, as in the adjustment to their human environment they might reasonably be supposed to have lost some of their original virulence for bovines. Yet it does not seem likely that they would have lost it entirely, and they ought to display a greater pathogenicity for cattle than undoubted human cultures. Indeed this requirement has been recently met in a most interesting and important case, ably planned and reported by Ravenel.

In addition to these 37 instances of supposed infection through milk by, so to speak, natural channels, the 10 reports tabulate a total of 17 cases of the communication of bovine tubercle through wounds of the skin, chiefly in veterinarians at autopsies, butchers or milkers. Here, again, the number is exceedingly small, an average of less than one case a year for the past two decades. This danger could of course apply to only a very limited class of our population in any case. And upon careful inspection of the cases this danger shrinks to even infinitesimal proportions. In 12 of these 17 cases only local or cutaneous symptoms resulted. In 9 of them a mere nodule or tuberculous mass at the site of injury, which gave rise to no general infection whatever and was completely cured by excision; in other words, a simple transplantation of foreign bacilli, familiar in all our laboratories. In the other three more or less extensive lupus resulted, which yielded completely to local curetting or excision. In only 4 of the 17 did pulmonary involvement and death result. So that our apparent and only proved fatality from bovine tuberculosis by inoculation is 4 cases in 20 years, or 1 death in 5 years. This comes exceedingly near what the French term *un quantité négligeable*.

The total number of cases thus collected by the believers in communicability is 54 in 20 years, and while, as I have stated, this can by no means be taken as representing the total risk, yet I might add that it stands for not merely all that the ablest opponents of Koch have been able to discover—but also as the outcome of a fairly careful watch which I have kept personally upon both veterinary and human medical literature for seven years past. Other cases have no doubt been reported which have escaped me, and I have gathered reports either through the literature or personally from veterinarian and medical friends of at least as many more, in which the evidence on investigation proved utterly inadequate even to indicate a bovine source, yet the above number represents the sum total of cases from the literature of 20 years in which there was even a reasonable probability of bovine origin. It may also be added that Bovaird, after a careful search through the medical literature of the last 15 years, has been able to find only 22 reasonably authenticated cases of alleged infection through milk. In not one even of these cases, as Adami also points out, could the easy possibility of infection from human sources be excluded on account of isolation or other conditions.

Now, what evidence have we to offer in rebuttal of this gravest section of the indictment against the bovine bacillus?

First. In reply to Brush's general charge against the dairy cow we have the broad and consoling fact that while the census returns of every civilized country in the world show an increase in the amounts of meat, milk, butter, and cream consumed per capita of from 200% to 400% in the past 30 years, the mortality from tuberculosis during the same period has declined from 30% to 45%.

Second. Every attempt to connect in any definite way tuberculosis with either meat or milk supply, whether by Royal commission, as in England and Denmark, by veterinary inspection boards, as in France and Germany, has failed utterly. Increased use of meat and milk has, on the contrary, in every class, country, age or condition, been found associated with a decreased deathrate from tuberculosis. In fact, as I have elsewhere³ summed up the evidence, even the leading veterinary authorities, Macfadyean for England, Nocard for France, and Bang for Denmark, admit that the danger from the use of the meat of tuberculous cattle is comparatively small, on account of cooking, immunity of muscle fiber from tuberculous foci, resistance of carnivorous

digestive tract of man, etc. In the words of Nocard,⁴ "Although tuberculosis can be transmitted through the digestive tract . . . ingestion only succeeds in giving tuberculosis when the ingested material is very rich in bacilli."

Third. Although tuberculosis has been proved to be present in from 2% to 52% (Schleswig-Holstein) of dairy cattle, nowhere (outside of insane asylums and cloisters) does it reach in human beings a prevalence of much more than one-tenth of this degree, viz., from 2 to 5 per 1,000 living. Nor does the highest bovine prevalence coincide in any way with the highest human deathrate.

Fourth. We have now on record a large number of instances in which a dairy herd or single cow, on being tested and slaughtered, has been found simply riddled with tuberculosis, without any greater prevalence among the family, institution, or customers consuming the infected milk, and in many cases having consumed it for months or even years, than in the surrounding community. Who of the English royal household was found to be tuberculous when the prize herd of Alderneys at Windsor was slaughtered and shown to be reeking with tuberculosis of years' standing? Clifford Allbutt relates his own acute apprehension when his favorite Alderney, whose milk mixed with that of others had been used by his own family and farm group of 20, including 10 children, for a long period, developed a cough and was found to be in an advanced stage of tuberculosis, with an affected udder and swarms of bacilli in her milk! And yet finally, as he says, "no one was a penny the worse, except myself for the loss of my pedigreed cow." I have had two similar cases in my own experience.

Surely if milk is at all a frequent source of infection we should have found by this time far more striking coincidences between infected herds and infected families. The only such coincidences which I have found reported have been in two insane asylums, but in neither case was the human deathrate above the frightful tuberculous mortality which unfortunately is the rule in the majority of such institutions. The deathrate from tuberculosis among the chronic insane not infrequently reaches 25% and even 60% of all causes.

Lastly, while direct experimentation upon the human subject except with full consent of the victim is inadmissible and we have not yet had time to hear conclusively from the two members of our profession who have pluckily offered themselves as martyrs in this cause, a small but very interesting series of cases, which bear absolutely directly upon the question have recently been furnished by Baumgarten. He reports that nearly 20 years ago, when he was assistant to Rokitsansky, the old master in pathology was led to regard with some favor the theory then under discussion, that there was an antagonism between the cancerous and the tuberculous processes. He accordingly instructed Baumgarten to inject with tuberculous material a number of patients with inoperable and hopelessly advanced carcinoma. To avoid possible complications from other human infections the virus was obtained from bovine sources. Six patients were inoculated with large doses of this virus, by injection, both into the neighborhood of the growth and into other parts of the body, in some cases several times in succession. But as no effect whatever was produced upon the growth of the cancers, the procedure was soon abandoned. Not one of these patients developed any symptoms, either local or general, of tuberculosis. And one could hardly have selected subjects in whom the general powers of resistance to infection would be likely to be more completely broken down than these poor, old, practically moribund victims of advanced carcinoma.

Six cases are, of course, far too few to base any conclusions on, but they are certainly entitled to be balanced against the 17 instances which alone have resulted positively out of the thousands of accidental inoculations, which must have occurred in 20 years among the whole body of veterinarians, butchers and dairymen.

But although both veterinarians and commissions are agreed in the reassuring and cheering conclusion that the actual danger from infected meat is not so serious as was feared, indeed is slight, they are still inclined to regard milk as a source of considerable danger.

The 37 actual reported cases of infection from this source

have already been considered, but there is a further basis for their contention, and this brings us to the last class of evidences adduced in favor of human infection from bovine sources. This is the alleged increased mortality from intestinal tuberculosis in children under 1 year of age, viz., at the chief milk-drinking period.

This contention was first raised by the distinguished sanitarian, Sir Richard Thorne-Thorne in his Harben Lectures for 1899. His statement was a striking one and attracted wide attention, but not, I fear, of character likely to be very gratifying to its author. It was that while the deathrate per 1,000 from tuberculosis had decreased in England and Wales 39.1% in 45 years among all ages, that among children under 5 years had decreased only 3%, while under 1 year it had increased 27.7%, and that this increase was in the form of intestinal tuberculosis. The statement was simply riddled to a shell within a month.

In the first place, Sir Richard, with a sad lack of pathologic information, had taken *tabes mesenterica* of the Registrar's returns as intestinal tuberculosis. As Still, Donkin, and Carr, the leading pediatricists of London, showed in rapid succession, *tabes mesenterica* is an ancient name made to cover chiefly a chronic mucoenteritis with enlargement of the mesenteric glands and typical "pot-belly," which has a fearful fatality among the children of the London poor, but of which we see most mercifully little in this land of cheap and abundant food and good wages, and is not tuberculosis at all. Furthermore, these gentlemen, supported by Sherman, of Edinburgh; Coleman, Guthrie, and other pediatricists, reported an aggregate of nearly 700 autopsies upon the bodies of children dead of tuberculosis, which showed less than 20% of cases of the intestinal form, nor could they find any evidence of an increase in tuberculosis mortality among children at any age.

But worse was to follow. American, French and German observers took up the question, and their results have been recently collected and analyzed with great industry and skill by Bovaird, of New York,⁵ with the following showings as to the frequency of intestinal tuberculosis in children:

	Total cases of tuberculosis in children (autopsies).	Percent of intestinal form.
German (Kossel, Haushalter, etc.).....	236	4%
French (Comby, d'Espine).....	128	.....
American (Northrup, Holt, Bovaird).....	369	1%
English.....	748	18%

That is to say, in every country in the world, except England, intestinal tuberculosis is one of the rarest forms of the disease in children, and even in England it occurs in less than one-fifth of all cases.

The extraordinary discrepancy between the English and all other statistics cannot be entered into here; suffice it to say that I believe it chiefly depends upon the meaning attached to the term "intestinal tuberculosis," the English observers applying it to every case in which the intestine or its lymph nodes are seriously involved, and the American and Continental observers more justly restricting it to those cases in which the primary infection has apparently occurred through the food-tube.

However, even at that reported level, if the frequency of milk infection is to be proved by the frequency of intestinal tuberculosis in children, as Thorne asserted, and Salmon, Repp, and veterinarian observers generally, except Macfadyean, have eagerly echoed, the argument not only collapses but becomes a positive boomerang.

On the other hand, it must be said that the mere occurrence of the chief theater of infection in a particular organ or region of the body is by no means conclusive evidence of its entry by that port. No matter by what channel tubercle bacilli enter the body they will make their chief and fatal lodgment in the lung in the vast majority of cases. The lung is a point of least resistance in the entire body, as my experience both among domestic animals and in the London Zoological Gardens convinced me years ago. As shown five years ago by Theobald Smith, and by many observers since, animals are definitely

infected through food or by peritoneal inoculation will ultimately die of pulmonary tuberculosis, with no appreciable trace of intestinal infection except a few infected glands. So the fact that 65% to 75% of fatal tuberculosis in children is in the lung by no means proves that the infection did not in many cases enter in the food.

However, although the original lesion in the mucous membranes has entirely disappeared there will nearly always upon careful search be found one or more infected foci along the mesenteric lymph chain through which the bacilli reached the general circulation and the lung. And cases in which there are isolated foci of this sort, in the intestinal lymph nodes, are very rare, outside of England at least.

With the contention that human tuberculosis can be communicated to cattle I have no quarrel, first, because it is universally admitted by bacteriologists and veterinarians, even by Ravenel, the warmest and one of the ablest champions of intercommunicability, to be both difficult and probably rare; and second, because I hold that the question of the possibility of infection of any particular species by any particular bacillus stands absolutely upon its own merits and must be settled by actual evidence as to that special fact. *A priori* reasoning and analogy are of no weight whatever, and cannot even establish a reasonable probability.

Who, for instance, on *a priori* grounds would have imagined that the feeble sheep, with their low resisting powers and a mortality so high that "to die like sheep" has passed into a proverb, would absolutely resist inoculation with every form of the bacillus, except in rare exceptions by intravenous injection? Or that the most generally susceptible of known animals, the guineapig, would resist the avian bacillus, while his near relative, the rabbit, succumbed to it. And a germ which has been passed through 10 generations of rabbits has no more effect upon a bird than one which has lived an equal length of time in the tissues of guineapigs.

If the human germ be practically innocuous to cattle, as Koch maintains, this proves absolutely nothing, and throws no light upon the virulence of the bovine bacillus for human beings. If, on the other hand, infection of cattle by the human germ is, as claimed by the veterinarians, difficult, but reasonably possible, this is equally inadequate to prove or even suggest a reasonable probability of the infection of man by the cattle germ.

In fine, a careful consideration of the evidence bearing upon the actual communication, which has and can occur of bovine tuberculosis to the human subject, leads us to the same general conclusion as the laboratory results of the inoculation of various animals with the three type forms—human, avian, and bovine, viz., that tubercle bacilli which have become specifically adjusted to the tissues of a particular host have, as a rule, lost practically all their virulence for other species through the natural channels of infection.

Nor, it must be remembered, is the tubercle bacillus alone or singular in this respect. On the contrary in fact, were it as universally communicable as we have been led to suppose, it would be the great and striking exception among parasites, both vegetable and animal. Physicians, who are not working naturalists, have often little idea of how strictly exclusive in their habits most parasites are. Even among the animal forms and such high and independent types as the insects they die if transferred to the bodies of even closely allied species. The flea of the dog will not live for more than a few hours or days upon man, nor will the flea of the hen survive long on either the human or canine skin. It was one of the old cherished proofs of the multiple origin of the human race that the fleas and bedbugs of certain South American tribes would not live upon the skins of Europeans.

Almost any domestic animal and every wild one which has been studied "helminthologically" has its own private species of tapeworm or roundworm which can live in no other species of host.

I have prepared a list of the (23) infectious diseases most common among domestic animals and man. Of these only 1 (rabies) is readily communicable to 3 or more species, only 3 (anthrax, tetanus, and foot-and-mouth disease) are readily communicable to 2 species and with difficulty to several others, 1 (diphtheria) is rarely communicable to the cat and dog, 4

(smallpox, glanders, influenza, actinomycosis) rage furiously through 1 species, and in isolated instances infect one or more others, while 19 practically never attack any member of a species other than the one they originate in, although this class includes such deadly and active infections as yellow fever, cholera, typhoid, pleuropneumonia, and syphilis.

If tuberculosis be readily communicable among seven different species of mammals, as is claimed, it is a most striking and surprising anomaly among diseases.

So far as the three so-called species of tubercle bacilli—the human, the bovine, and the avian—are concerned it is now pretty generally agreed among bacteriologists that they are all three varieties or modifications of one common form, although there are some who still hold out for the specificity of the avian. Bird tuberculosis is much more difficult to inoculate upon mammals than either of the mammalian varieties, while birds are almost absolutely immune to either of these latter. And yet, as Nocard's ingenious experiments showed several years ago, mammalian bacilli can be raised to a pitch making them virulent for birds, by introducing them into the peritoneal cavity of the latter enclosed in a collodion capsule so as to be affected by the temperature and fluids of the body, but protected from the leukocytes. A stay of six months, or passage thus protected through four or five successive hosts, will render them capable of finding a foothold in the tissues and infecting the whole body when inoculated naked.

The question simply is whether their differentiation and adjustment to the conditions present in certain hosts has not rendered them practically harmless for all others. This is certainly true and admitted as regards the avian bacillus, collodion capsules not being found in a state of nature, and in my judgment the overwhelming balance of such evidence as we possess points in the same direction as regards the bovine for human beings. Infection by the natural and ordinary channels is possible, but requiring the cooperation of so many favoring conditions as to be highly improbable and exceedingly rare. At least this is as far as the evidence hitherto adduced would justify us in holding. Adami and Smith arrive at practically the same conclusion. Further data may carry us further, and we must await their accumulation by the slow process of time, lacking the power to make the direct test. Even negative results upon single volunteer subjects would prove little either way.

This brings us to the interesting question, Which one, if any, of these three is to be regarded as nearest to the type of the common ancestor? As no one of them has any substantial advantage over the other two, either as to wider prevalence, greater virulence, or greater range of culture media or temperature viability, neither form has any valid claim to more primitive qualities, still less to being the ancestral form, as some veterinary pathologists have claimed for the bovine.

The little that we know of tubercle bacilli in cold-blooded animals is either negative or of an exceedingly limited character, at most indicating a modified, attenuated form of some avian or human germ.

In short, our search for the primitive ancestor of the tubercle bacillus would appear to be directing itself outside of the animal body, and possibly toward some organisms widely different from the bacillary form. This is the most interesting, and to my mind, the most important problem before bacteriologists today, and is exciting wide attention.

Investigators seem to be grouping themselves along two main lines of research. One, headed by Metchnikoff, Fischel, and Hueppe, regard the tubercle bacillus as not a bacillus at all in the strict sense, but one of the stages in the development of a pleomorphic mold. The name of Metchnikoff alone is enough to command respectful attention for this view, which is based upon the curious branching tendency, approaching the formation of a mycelium, seen in cultures of the bacillus under certain conditions, its remarkable "shyness" of growth and narrowness of limitation to certain mediums and within extremely narrow ranges of temperature, making its existence, except in spore form, outside of the body, a practical impossibility; and the remarkable association of the disease with dampness of subsoil, dark and ill-ventilated rooms, and overconfinement.

The other group, represented by Möller, Lubarsch, Petri, Rabinovitch, and Kenyon, are trying to trace a possible connection between *B. tuberculosis* and certain acid-resisting bacilli of almost identical shape and growth-habits, which swarm upon timothy and other forms of meadow-grasses (*Phleum*, *Bromus*, and *Alopecurus*), and hence are known as the "grass bacilli." These are so strikingly similar to the tubercle bacillus in shape, reaction to stains, methods of growth on culture-mediums that the latest work upon them by most competent critics (Abbott and Gildersleeve⁶) can discover only three means of distinguishing them: that they can be decolorized by slightly weaker acids, can grow at a lower temperature and do not produce typical tuberculous infection upon inoculation into animals. The first distinction is probably simply a question of a larger or smaller percentage of fatty matters in the outer layers of the organisms. The second, it must be remembered, is but little more than can be said of the injection of any foreign bacillus, *e. g.*, an avian tubercle germ into a mammal, or vice versa.

All observers find that these grass-bacilli and dung-bacilli, on injection into animals, produce nodules which are sometimes difficult to distinguish from tuberculosis, but that general infection seldom occurs. The organisms can be recovered from the nodules, and Möller and Kenyon are reported to be now engaged in determining whether any increase in virulence can be produced by passing them through a series of animals, and to have already obtained some interesting results.

Their presence upon cultivated grasses gives them, of course, a very wide opportunity of distribution and Abbott and Gildersleeve found no less than 30 or more forms in stable manure, in the intestinal contents and smegma about the vulva and anus of normal man, horses, cows, dogs, guinea-pigs, and white rats; in the saliva of nontuberculous individuals, and in butter. If inoculated in pure culture into the peritoneal cavity only a few scattered nodules resulted, but if accompanied by a little sterilized butter a fibropurulent peritonitis follows. Intravenous inoculation is usually followed by a free formation of nodules, histologically resembling true tubercles, in the viscera. In short, the only important character they seem to lack is that of producing a general infection, and even this is forthcoming if some of the media in which they are found be injected with them.

Their action is a curiously close parallel to that of the human bacillus when injected into bovines, which also in pure cultures produces only scattered nodules or purely local reactions, more extensive results if pus or caseous matter accompany it, but genuine generalized infection rarely in any combination. The only apparent difference between the grass bacillus in mammals and the avian or human bacillus in bovines appears to be one of degree of virulence.

Abbott and Gildersleeve agree with Möller in regarding the botanical relationship of the acid-resisting bacilli—which probably all fall under two species—with *B. tuberculosis* and the ray-fungi of actinomycosis as unquestionable, and that the term "bacillus" is not a correct designation for any of them, but that the whole group should be called actinomycetes. It will at once be evident, if prolonged "saturating," repeated infections, with successive generations of grass bacilli might possibly give rise in susceptible individuals to tuberculosis, what an interesting light is at once thrown upon Brush's contention as to the dairy. Wherever the dairy cow goes tame grasses follow. Also if *B. tuberculosis* passes through an intermediate stage on grasses before it can again infect, this ought to be a factor in the puzzle of the immunity of high altitudes and deserts, in neither of which tame grasses will grow. With settlement and irrigation immunity is lost.

What makes the study of the grass and butter bacilli of such interest and importance is, that our knowledge of the precise process and paths of infection in human tuberculosis is so imperfect and unsatisfactory.

We know certainly that introduction of one case into a community, institution, or family, is likely to be followed by others, but as to the period of incubation, the vehicle of contagion, the process or port of entry of the invasion of the body of the next victim, we are completely in the dark. In no case do more than a small percentage of those exposed to infection

contract the disease, and the period of incubation is often so prolonged—in some cases covering many years—that the question is already raised from several quarters, whether the bacillus may not require some intermediate host, like the mosquito in malaria and yellow fever, and the rat in bubonic plague, or have to pass through a saprophytic stage outside of any animal body before it can again attack a human subject.

In this connection it is interesting to note that Straus, Nocard, and Theobald Smith have all called attention to the fact that certain cultures of fully virulent tubercle bacilli readily adapt themselves to a saprophytic habit of growth, and in a number of generations come to be able to grow on media and at temperatures which they were quite incapable of when first isolated. And as the last observer has shown, bacilli isolated from different cases of tuberculosis, especially "scrofulous" glands and skin lesions, show marked variations in virulence.

On the one hand we have the classic series of cases of alleged transmission from husband to wife and wife to husband, collected by the Collective Investigation Committees of the British Medical Association in 1883, 158 instances; by the Berlin Medical Society, 40 cases; and by the Medical Society of the Paris Hospitals, 107 instances—a total of 305.

These figures certainly establish the danger of communication under these circumstances, but they have two grave defects. They give us no information as to the total number of persons who had lost a husband or wife by tuberculosis from among whom these cases were selected, nor do they give the length of time elapsing between the primary case and the death of the survivor.

When we remember that these figures represent the total number of coincidences of this sort occurring in the experience of, at moderate estimates, from 500 to 1,000 physicians—the British list was based upon 267 affirmative replies—making less than one instance to each physician interrogated, and that nearly any physician can number from 5 to 25 patients who have lost a husband or wife by tuberculosis, the probable percentage of infection in such cases is not shown to be very large. Lists which do not give the total number of patients exposed to such contact-infection are of no value whatever as a basis for conclusions.

In the only series of cases which I have been able to discover in which this was done, that of Prevost, the actual mortality by tubercle among the total number of survivors of such marriages was found to be no higher than that of the rest of the community. The whole question is in urgent need of further investigation upon broader lines.

Again, we have the wellknown and statistically abundantly attested fact that tuberculosis tends to "run in families," which at one time was attributed solely to heredity, now chiefly to contagion. But even here our knowledge is of the vaguest and most confused description. So many other possible factors enter into the problem. First, there is the possibility of the common inheritance of a weak constitution and vulnerable organization, not specially so toward tuberculosis, but of low powers of resistance to any unfavorable influence. Then we have the exceedingly potent influences of housing, of food, of bodily habits, and occupation all in common.

Lastly, the data so far collected are imperfect and incomplete. They are usually concerned solely with positive instances, or consist of a list of tuberculous individuals with the percentage of "family history" of the disease, without any statement as to the total size of the family groups under consideration in each case. When one in seven of the entire community die of the disease, it is obvious that any family group of seven or over is liable to contain one case of tuberculosis. Statements of total number of cases observed, or of descendants of tuberculous couples, are as urgently needed here as in the conjugal infections.

Next, we hear loudly trumpeted from time to time, usually in the public press, or by health officers and politico-scientists, the warning that tuberculosis is rapidly increasing and spreading among the previously healthy inhabitants of some of the great health resorts or in the neighborhood of some sanatoriums. I have taken some pains to investigate reports of this description, and have not succeeded in finding one yet which was supported

by facts. The facts have been carefully gone into and the statements utterly disproved by Gordinier, for Colorado Springs; Aeby, for Davos; Trudeau and Baldwin, for Saranac Lake; Detweiler, for Falkenstein, and a physician of the English colony for Mentone.

Lastly, since the report of Cornet in 1874 it has been repeatedly alleged that the deathrate among nurses from this disease is extremely high. Nurses in the Paris hospitals and nursing sisterhoods were shown to have a mortality by tuberculosis of from 30% to 63% of all deaths. But such reports fail to state what has since been discovered, that the deathrate by tuberculosis is equally high in the nonnursing sisterhoods, nor will any one who has seen the scandalous conditions as to light, ventilation and dirt which prevailed even 15 years ago in the Parisian hospitals—one of the most famous being a converted warehouse—wonder at any deathrate which might prevail among the nurses.

On the other hand we have the fact that not a single death from tuberculosis has occurred among the nurses or internes of the great Brompton Hospital for Consumptives in 60 years. Not one in the famous sanatoriums at Falkenstein and Goerbersdorf, nor one in the 15 years of the Saranac Lake Sanitarium of Trudeau. Where nurses are allowed to live under civilized and clean conditions they are in no danger of infection.

The same may be said of the high mortality in prisons and insane asylums, both of which reach as high levels as the nursing sisterhoods; infection is necessary, but confinement and overcrowding are the really effective factors in its success.

In fine, the general balance of such evidence as we possess up to this date upon the role of infection in tuberculosis seems to me to point clearly toward the view, that while the introduction of infectious material is necessary, the most potent factors in determining the question of the development of the disease are those of the soil, *viz.*, *resisting power and environment*.

The three chief environmental factors are now well known, housing—including lighting, ventilation and overcrowding—food and occupation. Upon these three factors is based our only known or successful treatment of the disease.

Upon the side of the resisting power of the subject our chief desideratum is a group of criterions for its early detection before a bacteriologic diagnosis is possible, to apply our open air treatment at a stage when it will cure 90%.

There was a considerable amount of truth in the old views as to the habitus phthisicalis, as Galton and Mahomed have confirmed by composite photography, only unfortunately many of the "warning" features were signs of the actual presence of the disease.

What we need are characters which can if possible be relied upon to indicate low powers of resistance, in advance of actual disease. There are of course many of these, but some include the entire physiognomy and most are too vague for accurate description or appreciation.

One, however, I believe we have which is definite, significant and congenital. This is a high Chest Index. By chest index I mean the relation between the anteroposterior and transverse diameters of the chest at the level of the nipples.

Contrary to general impression, I believe this to be high in tuberculosis, in other words, that the chest of the consumptive is not flat, but round or deep. Since calling the attention of the profession to this fact five years ago I have accumulated measurements of nearly 400 tuberculous chests on both sides of the Atlantic, with the result that 85% show a higher index or rounder chest than normal. The average for the entire series is 80, while the normal index is 70 to 72.

This shape of chest is simply the persistence of the fetal—Index 100—and child (85 to 90) forms of chest. The chest of a patient over 16 years which does not show a flattening of at least 80, ought to be regarded as suspicious, and the patient put to an open air life at once.

I am also finding it a valuable and reliable sign in very early stages of the disease: if the index is above 77, give the patient the benefit of the doubt and send him to the woods.

Guard against infection by every possible means. Meat and milk inspection, tuberculin tests, destruction of sputum, notification of cases, prevention of expectoration in public, all are

of highest value and worth to the public health and well ten times their cost and trouble. But at least twice as potent, in my judgment, in the eradication of tuberculosis will be light and airy rooms, good food, short hours of indoor work, and above all a reversion to our vigorous, happy, ancestral life in the open air and for children in the tree-tops, flattening and expanding the chest, reddening the blood, hardening the muscles, and making life once more really worth living.

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CIVIL SANITARIUM AT BAGUIO, BENGUET.

From the report of the Secretary of the Interior of the Philippine Islands to the commission we extract the following details:

During the past year it has been possible to conduct some practical experiments as to the effect of the Benguet climate upon sick or debilitated persons. The opportunity presented itself to acquire a considerable tract of land with two houses upon it, owned by Mr. Otto Scheerer. The position of this land with reference to the probable future site of government buildings at Baguio was such as to make it seem desirable that the government should purchase it before further improvements were made upon it. One of the houses was assigned to the Governor of the province as his official residence. The other, containing a dining-room, a kitchen, and three bedrooms, with a total capacity of eight beds, was taken for a hospital. With considerable difficulty the necessary furniture and hospital supplies were sent up over the Naguillian trail, and the institution was opened with a personnel consisting of an



acting superintendent, a nurse, a hospital steward, and the necessary servants. Later another nurse was added.

Plans were prepared for a new building to accommodate 60 beds, and to be constructed in such a way that the old building would form a part of it. The construction of six cottages, to be occupied by the families of civil officers and employes in need of recuperation, was also provided for. Work upon the projected improvements was begun immediately. Progress has necessarily been slow, as lumber could be had only by felling pine trees and sawing them up by hand, while it was necessary to take other supplies in over the Naguillian trail.

Very sick persons could not have endured the long, rough trip over the trail, but it has been possible to send a limited number of malaria patients and persons convalescing from dysentery and other wasting diseases. Thus far 43 persons have been admitted to the sanatorium. A few of these were in good health and were members of the families of the real patients. Approximately four-fifths of those admitted sought relief from general debility, induced by the tropic climate or by wasting diseases, and in nearly every instance they reacted promptly to the bracing air and rapidly improved. We now know positively what we had every theoretic reason to believe would prove true: that convalescents gain rapidly in weight, strength, and color at Baguio, and are soon restored to vigorous health. In some instances slight discomfort is felt during the

first few days owing to the change in altitude, but this soon passes away.

The first estimate of the time required to complete the cottages and the addition to the sanatorium building proved inaccurate. Owing to strikes among the workmen, cholera, bad transportation, the extraordinary rainfall during the month of August (54 inches), and scarcity of labor, progress was much slower than had been anticipated. The force of nurses and hospital attendants, based on this estimate, proved unnecessarily large, and it became evident that if patients, even when convalescent, were to be sent to Baguio there must be a physician and surgeon there to attend them. Act No. 429 was accordingly adopted, reducing the original force to one nurse, one hospital steward, one cook, and two native servants, and providing for the appointment of an attending physician and surgeon.

Many of the persons who have been at Baguio are anxious to secure building lots there in order that they may erect cot-



tages and send their families to Benguet during the hot season. The establishment of homes where the families of civil officers and employes can at any time, and at small expense, get the beneficial effects of a bracing climate will greatly add to the stability of the civil service, and I urge the surveying of a town site on government land and the sale of building lots in the near future, in order that it may be possible for those who desire to do so to build at Baguio. When this can be done many persons who now hesitate to bring their families to the Philippines will feel perfectly safe in sending for them.

For further details in regard to the work of the Civil Sanitarium, reference is made to the first annual report of the attending physician and surgeon.

Sanatorium for Consumptives.—The *Baltimore News* says that the trustees of the Hospital for Consumptives at Towson are making plans for the establishment of a branch of the hospital at some place in the Blue Ridge Mountains, and a friend of the hospital has promised to give \$25,000 toward the project if a like sum can be raised by the trustees. The plan will probably take definite shape within the near future, and a small farmhouse will be rented for this summer for use as a kitchen and dining-room, while the patients will sleep in tents. The site has not been decided upon as yet. The trustees of the hospital have secured the cooperation of the Quarter Club in the movement, and that organization has raised about \$3,000, which will be devoted to the furthering of the plans for the mountain hospital. It is believed that this sum can be raised, and plans are being formulated accordingly.

Yellow Fever and Mosquitos.—Assistant Surgeon Grubbs, in charge of the Gulf quarantine station, has settled the question as to what extent and under what circumstances mosquitos infected with yellow fever germs can be carried by vessels. From June to November last he inspected vessels arriving from ports where the presence of the stegomyia render them liable to infection. Of the 82 vessels from possibly yellow fever ports, 65 had no mosquitos on board at any time during the voyage, 5 had the insects on board at port of departure, 9 reported the appearance en route of culex or harmless mosquitos, and 3 brought stegomyia to the station. All 3 of the last group were from Vera Cruz, a yellow fever port, and the voyages lasted on an average 17 days. Surgeon Grubbs gives the mosquito history of each of the 3 and reaches these conclusions: First, that mosquitos can come aboard a vessel under favorable conditions when the vessel is not over 15 miles from shore; second, that stegomyia can be carried from Mexican or West Indian ports to those of our Gulf States; third, that they can board a vessel lying at anchor a half mile or less from shore, being conveyed by the open lighters used or flying aboard, and, finally, that a vessel moored a short distance from land may become infected with yellow fever, our old beliefs to the contrary notwithstanding.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

[April 11, 1903. Vol. XL, No. 15.]

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2. The External Preparations and Their Therapy. CARL S. N. HALLBERG.
3. General Puerperal Septicemia Treated by Intraabdominal Irrigation with Normal Saline Solution: Recovery. JAMES H. BURTENSHAW.
4. Fistula Between the Gallbladder and the Stomach. A. BARR SNIVELY.
5. Light in the Treatment of Lupus and Other Chronic Skin Affections. J. W. KIME.
6. Therapy of Dysentery. WILLIAM ROBERTS.
7. Postoperative Pulmonary Complications. REUBEN PETERSON.
8. Iodoform Dermatitis. W. A. BRYAN.
9. Cell Implantation in the Production of Tumors. LEO LOEB.
10. Report of a Case of Typhoid Perforation, with General Peritoneal Infection and Five Other Consecutive Cases of General Suppurative Peritonitis: All Recovered. J. B. MURPHY.
11. Functional Tests of Hearing: Some of the Principles on Which They are Based. WILLIAM LINCOLN BALLENGER.
12. The Treatment of Traumatic Gangrene of the Extremities. VAN BUREN KNOTT.
13. Poisoned Wounds by the Implements of Warfare. LOUIS A. LA GARDE.

1.—Operation for Ptosis.—F. Allport gives a schematic drawing which demonstrates the steps in Panas' operation more clearly than the original drawings. The latter show the double threads in the eyebrow coming out of the same hole whereas they should emerge from separate holes. The outermost of the five sutures should be inserted in the spaces between the skin flaps, including the tissues of the lid, except the skin and tarsal cartilage, the loop being on the conjunctival surface. He makes his incision straighter than those shown in Panas' lines, and scarifies and denudes the lower middle flap before dissecting it and drawing it up under the upper flap, which he calls the bridge flap, in order that the surfaces may adhere, leaving no pocket to collect debris. The lumpy appearance usually left by the operation is minimized by making the bridge flap as narrow and as thin as possible. Puckering at the corners of the lid is remedied by trimming the side flaps to a point. [H.M.]

2.—External Preparations.—C. S. N. Hallberg points out that fats are the best vehicle for rectal suppositories, because of the alkalinity of the secretions, but water-soluble substances should be used in the urethra and vagina, as their secretions are normally acid. Glycerogelatin probably answers best. Commercial rubber plasters lack penetrative properties in any considerable degree, and should not be used with drugs like belladonna when endermatic effects are sought. The oleates, as represented by lead plaster, penetrate into but not through the skin, and thus do not produce any systemic results. For diadermatic or systemic effects the vehicle for plasters should be animal fat, as lard or suet with waxes, or preferably mixtures of these with lanolin, like the plaster-mulls of Unna. While the natural oleates, oleopalmitates and stearates in which the acids are linked with glycerol, penetrate through the skin, the artificial compounds with metal and alkali bases are not absorbed through external use. Agents such as belladonna, camphor, etc., in volatile liquids, are more effective when applied by means of an occlusive dressing than in oil or soap solutions. Collodion is indicated when lasting effects are desired over small areas. Mulls permit evaporation, thus preventing maceration of the skin, which usually occurs from more occlusive dressings. A 1% water solution of the alkaloidal salts permit germ growth, while 10% solutions are easily kept sterile. The U. S. P. should contain a formula for sterilization of hypodermic and other injections, collyria, etc., which the physician could specify in prescribing. It should also give directions for the purification of commercial gauze. [H.M.]

3.—Intraabdominal Irrigations in Puerperal Septicemia.—J. H. Burtenshaw uses the normal saline solution of Locke containing sodium, calcium, and potassium chloride, and kept at 110° F. In the case reported the kidneys began to functionate immediately after the irrigation was begun, or he would have discontinued it at once. Intravenous infusions would have influenced the general systemic infection as favorably, but with regard to the attendant peritonitis it was the local action which cut short the inflammatory process and prevented

adhesion formation. The streptococcic infection spreading from the uterus by means of the lymphatics and the solution being absorbed by the latter the toxin was attenuated almost at its origin. The heat caused contraction of the arteries and disappearance of the inflammation. On account of its action in laking the corpuscles and its toxicity toward cellular activities the 0.6% salt solution commonly regarded as normal should not be employed. [H.M.]

4.—Fistula Between the Gallbladder and Stomach.—

A. B. Snively finds only four operative cases reported in literature, but many unrecognized cases have probably existed since in general there are no symptoms except those of cholecystitis or cholelithiasis. Small stones might pass through the pylorus to the stomach. Vomiting of a large stone justifies the suspicion of fistula. He reports a new case. [H.M.]

5.—Light Treatment in Lupus.—J. W. Kime uses a modification of the ray filter employed in photography with an 18-inch focus. At the focal point it is intensely hot, but in some cases nothing short of this will arouse reparative action. With a beam of sunshine one foot in diameter falling through the office window the instrument is ready for use. The surface is freed from crusts and washed with water without antiseptics. The light is moved over the surface coagulating the albumin in the tissues until it is of a smoky white color. This takes but a few minutes and should be done by the physician, who can then turn the treatment over to the nurse, who seats the patient so that the true focal point is avoided and continues the application 20 minutes longer. A wet dressing is applied and removed by the nurse the following morning when she gives another 20 minutes' treatment, repeating it on the second day and on the third the physician again applies the strong light to any part which seems to be lagging behind in its response to the irritation. The parts should be thoroughly cleansed twice daily. A solution of copper is used to absorb the nonchemic rays. [H.M.]

6.—Therapy of Dysentery.—W. Roberts writes to reemphasize the value of ipecac in large doses in dysentery, and to recommend its use in the form of pills dipped in liquid salol, which does not dissolve until the bowel is reached, thus avoiding nausea and vomiting. It is probably more of a specific than any other remedy. Its advantages are its simplicity, safety, certainty, and rapidity with conservatism of the constitutional powers and abbreviation of convalescence, decrease in frequency of recurrence and of abscess of the liver, and diminution in mortality. [H.M.]

7.—Postoperative Pulmonary Complications.—R. Peterson reports two cases of pneumonia, three of pleurisy, and one of bronchitis occurring in 14 months' service. Such pneumonia may be infectious or due to inhalation. Bronchopneumonia is apt to follow operations on the pharynx or larynx, and the administration of an anesthetic in the extremes of life. The writer's experience does not agree with Prescott's as to the relative infrequency of lobar pneumonia. He uses the best Squibb's ether, and takes particular care to avoid chilling the patient during operation, and he modifies the Trendelenburg position by partially elevating the head of the table after the intestines have been removed from and held away from the pelvis by packs. Pneumonia is more apt to occur after abdominal than other operations, especially if ether is employed. There is undoubtedly a hypostatic form of pneumonia which develops usually at the base of the lungs of a patient with peritonitis or other forms of sepsis. Pleurisy has often been overlooked on account of the pain having been ascribed to a reflex from below. Since at certain times of the year the grip germ is present, the writer avoids operation in the presence of even a slight cold. [H.M.]

8.—Iodoform Dermatitis.—W. A. Bryan describes a local toxic action appearing on surfaces surrounding the wound to which it has been applied. The redness produced is obscured by numerous small vesicles increasing in area, sometimes extending several inches from the focus. The vesicles nearest the focus are the largest. When broken the liberation of serum is more profuse than in any other lesions ever seen by the writer. On removal of the cuticle the true skin appears red, raw, edematous, uneven, and filled with pockets of serum. The chief symptom is intolerable itching. It is incessant and

described as a burning pain, with tenderness and irritability, and great care must be used in removing the dressings. Iodoform seems to produce its effect by spreading through the cellular tissues of the skin; iodine by acting only on the surface. Aristol produces the same lesion. Peroxid of hydrogen should be used to remove every particle of the iodoform. After daily cleansing 5% carbolized vaselin or an aqueous solution should be applied. It is well to immerse the part in an astringent solution in hot water from 10 to 30 minutes at each dressing. Dry dressings, if used, must be frequently renewed. Duration under treatment is from one to four weeks. [H.M.]

9.—See *American Medicine*, Vol. III, No. 25, p. 1063.

10.—Typhoid Perforation with Peritoneal Infection.—

General suppurative peritonitis is not necessarily fatal. In streptococcus infection denudation and consequently toxic absorption occurs earlier than with infection from the staphylococcus or colon bacillus. In the past diagnosis was based on collapse. At present it is based on pain, nausea, vomiting, localized tenderness, circumscribed flatness on piano percussion, elevation of temperature and hyperleukocytosis, in the order mentioned. Operation should be performed as soon as these are manifest. If postponed until collapse occurs the case will end fatally. If done early the "peritoneal shingles" will be found intact, thus preventing absorption. Reduction of pressure lessens absorption, as is shown after draining an abscess while not entirely emptying it. The upper half of the peritoneal cavity absorbs more rapidly than the lower, hence the writer, J. B. Murphy, keeps patients in a semisitting position in order that the pus may settle in the pelvis. He administers antistreptococcic serum and unguentum crede and sometimes gives saline transfusions. Excessive manipulation, sponging and irrigation are responsible for many fatalities. [H.M.]

11.—See *American Medicine*, Vol. III, No. 25, p. 1059.

12.—Treatment of Traumatic Gangrene of the Extremities.—

V. B. Knott refers to the frequency with which gangrene continues after amputation, making a second operation necessary. The dissection of the soft parts into suitable flaps interferes with the blood supply in parts the vitality of which is already low. The suture tension also interferes with the flap nutrition. He therefore makes a circular amputation, cutting through soft tissues and bone at the same level, ligating all the vessels carefully, and including no perivascular tissue in the bite of either forceps or ligature. The wound should be dressed two to four times daily with gauze saturated in salt solution. After 7 to 10 days, if the wound is clean and the patient's condition favorable, the classical circular amputation may be made by dissecting up the flap already outlined, and sawing the bone at the proper level. By this method the source of infection is removed and we may be able to amputate at a lower level than by the old method. The freest possible drainage is provided for a sufficiently long time, and there is less shock to an enfeebled patient. [H.M.]

Boston Medical and Surgical Journal.

April 9, 1908. [Vol. CXLVIII, No. 15.]

1. Dry Hot Air as a Therapeutic Agent, with Demonstration of the Body Treatment. CLARENCE EDWARD SKINNER.
2. The Role of Atmospheric Pressure in the Hip-Joint. SEABURY W. ALLEN.
3. The Doctor in the Navy. A. J. NUTE.

1.—Dry Hot Air as a Therapeutic Agent.—C. E. Skinner notes that in judging of the efficiency of hot air in rheumatism the error of diagnosing as rheumatism conditions of an entirely different nature must be remembered. He advises the use of some salicyl compound with the heat. The application of the latter results in immediate relief of pain, shortening of the duration, lessening liability of cardiac involvement, lessening amount of drug ingestion required. When properly applied there are no vicious after effects. Sprains treated within 4 or 5 hours of their occurrence are entirely relieved in from 2 to 4 days. Heat should be reapplied as often as the pain returns. Hot air alone will cure many cases of arthritis deformans and in conjunction with other remedies restore the majority to useful and comfortable lives. From 6 to 12 months is usually required for a cure. Hot air will relieve pleuritis at once and

pneumonic consolidation in 2 to 5 days. Local septic infection responds most kindly in nephritis, dropsy, respiratory oppression, mental somnolence, and cardiac disturbance diminish during the first treatment. In some cases perfect health has been restored. The writer lists many other diseases in which its value has been demonstrated. Local treatment acts by stimulating cell metabolism through increased temperature and by reflex acceleration of nutrition through the nerve endings in the skin. In local bacterial disease its action is inhibitive, the germs becoming more susceptible to attack by stimulated leukocytosis. The copious perspiration induced aids in eliminating the toxin. Sometimes reflexes in distant parts result from local treatment. The action of body or general treatment is reflex through the spinal sympathetic. White corpuscles are increased from 15% to 50%, red from 10% to 20%, the urine from 25% to 100%, urea from 15% to 60%. Its administration is agreeable to the patient. Its action is in line with that of the Turkish bath, electricity, massage, etc. The writer describes the technic of application. [H.M.]

2.—Atmospheric Pressure in the Hip-joint.—S. W. Allen quotes various authorities who subscribe to the opinion of the Brothers Weber, who in 1836 demonstrated to their own satisfaction that atmospheric pressure plays an important and distinct role in maintaining the head of the femur in the acetabulum. The author, not satisfied with the accepted correctness of this view, performed experiments on seven suspended cadavers. Three pins were driven into the bones adjacent to the hip-joint—one into the anterior superior spine, one into the iliac crest vertically above the trochanter, and one into the great trochanter, thus making a triangle, two legs of which should show variation in length with any separation of the bones entering into the articulation. Trephining the innominate within the pelvis and thus letting air into the joint caused no separation of the bones. Then the muscles about the joint were severed with a like result. Cutting the posterior half of the capsular ligament caused slight separation and a consequent lengthening of the legs of the triangle; still more so on cutting the anterior half of the capsule. But by far the most pronounced separation occurred on severing the cotyloid ligament. The author's conclusions are that atmospheric pressure is of no appreciable influence in maintaining the bones in contact, but that it is accomplished primarily by the cotyloid ligament, and secondarily by the capsular ligament. Of course, complete separation cannot take place until the ligamentum teres is severed. [A.B.C.]

3.—Medical Men in the United States Navy.—A. J. Nute gives a general summary of the requirements for medical men entering the United States Navy. Examinations are now held at Washington instead of at Brooklyn, as formerly. About 10 days are devoted to the examination, which begins with a rather rigid physical examination. The theoretical examination is partly written and partly oral and the examining board can use its full discretion as to the extent of the medical subjects covered, number of questions, time consumed, etc. Receiving his certificate of appointment the young officer is ordered to report at the Navy Medical School at Washington for a six months' course preparatory to active duty. He has no positive rank, but is ranked as a staff officer. He starts in at a salary of from \$1,400 to \$1,650, and his pay is gradually increased. Should he continue in the service he is retired at the age of 62 on three-fourths pay for the remainder of his life. The service is easy, the pay far better than in many European countries, and the medical officer is always well supplied with medical literature, apparatus, etc. [A.B.C.]

Medical Record.

April 11, 1903. [Vol. 63, No. 15.]

1. The Technic of Nephropexy, with Special Reference to a Method of Attaching the Kidney as Nearly as Possible in Its Normal Position. RAMÓN GUITÉRAS.
2. Intranasal Obstruction and Its Treatment. H. HOYLE BUTTS.
3. Cases of Morphinism in Which the Drug was Immediately Withdrawn. MARGARET S. HALLECK.
4. Bronchopneumonia. JOSEPH N. STUDY.
5. The X-ray and the Finsen Light in the Treatment of Lupus. A. D. ROCKWELL.
6. The Treatment of Ring-worm. GEORGE THOMAS JACKSON.

1.—The Technic of Nephropexy.—Ramón Guitéras contributes a valuable article, its subdivisions being: The incision, the part of the kidney used in the fixation, the material used in the fixation, the part of the parietes used in the fixation, the author's technic, and the principles of nephropexy. Under the latter he says: 1. The kidney should be fixed in as nearly its normal position as possible. 2. It should be fixed in such a manner that it subsequently does not (a) sink in the vertical plane, and (b) rotate on the vertical axis. 3. The kidney may, however, be allowed to turn to a certain extent on its horizontal axis, such a rotation being normal with each respiratory act, according to Küster. 4. The permanence of the fixation should not be made dependent on sutures, no matter what suture material be employed, but upon firm adhesions between the kidney parenchyma and the lumbar wall. 5. The material used for suture should be one that holds long enough to allow adhesions to form and yet is ultimately absorbed without injury to the parts. (Chromicized gut is the only material that corresponds to these requirements.) 6. The operation should be as simple as possible; should include as few stitches as possible, and should take the least possible amount of time. [A.B.C.]

2.—Intranasal Obstruction and Its Treatment.—H. H. Butts, under this heading, discusses acute passive hyperemia, foreign bodies, rhinitis hypertrophica, echondrosis and exostosis of the nasal septum, deflections of the cartilaginous septum, irregularities of the bony septum, abscess of the septum, nasal myxomata, etc. Under the subject of treatment for nasal spurs he says: For the guidance of those who, through inexperience, are in doubt as to when they should operate, the following rules are laid down: (1) When a septal spur seriously impairs the respiratory function of a nasal fossa, it should be removed; (2) when a septal spur impedes the drainage from an accessory sinus or a nasal fossa, it should be removed; (3) when a septal spur is in contact with opposing structures, it should be removed. [A.B.C.]

3.—Morphinism.—M. S. Halleck reports five cases of immediate withdrawal of the drug in which only strychnin, hyoscin, and codein with laxatives were administered with quick and practically painless recovery. The strychnin stimulates all the functions depressed by the morphin, and nausea, restlessness, insomnia, and pain are cared for by the hyoscin and codein. [H.M.]

5.—Röntgen Rays and Finsen Light in the Treatment of Lupus.—A. D. Rockwell says that the actinic rays, which are the only efficient rays of light in the treatment of malignant or tuberculous skin affections, possess one great advantage over the Röntgen ray: they are more benign in action. On the other hand, there seems to be no question that the curative effects of the Röntgen ray in lupus and other skin affections follow more rapidly than those of light, while with improved technic Röntgen ray burns may in time become an almost negligible quantity. The Röntgen rays and the actinic rays of light do not differ so much in kind as in degree—in the frequency and intensity of their vibrations. Their therapeutic effects are therefore very much the same. They cure the same diseases. The author makes reference to a case of lupus vulgaris successfully treated up to a certain limit with the Finsen light. Further treatment resulting in no improvement, a change was made to the Röntgen rays, when complete recovery took place. He suggests that there may be many instances in which this would prove true, and *vice versa*. [A.B.C.]

6.—Treatment of Ring-worm.—G. T. Jackson has found an ointment of 1 dram or more of iodine crystals in 1 ounce of goose grease a most effective remedy in ring-worm of the hairy regions. It must be applied twice daily until a little swelling occurs, and then once daily. In two or three weeks the hair falls out. Epilation is not necessary. If there is too much reaction it should be suspended for a few days and a 3% salicylated oil used. A cure requires only three weeks. The goose grease must be genuine, and this is expensive. In obstinate cases the writer has had good results from half a dram to a dram of croton oil to an ounce of sulfur ointment. [H.M.]

New York Medical Journal.

April 4, 1903. [VOL. LXXVII, No. 14.]

1. Terminal Coma in Diabetes. ARTHUR R. ELLIOTT.
2. Syphilitic Pseudotabes: Report of a Case; the Differential Diagnosis of Tabes. JOSEPH COLLINS. (Concluded.)
3. Practical Points on Intubation of the Larynx for Croup, with a Report of Thirty-six Cases. FIELDING LEWIS TAYLOR. (To be continued.)
4. The Practical Recognition of the Tubercle Bacillus in the Sputum. CHARLES B. FITZPATRICK.
5. The Jews as Immigrants—from a Medical Standpoint. MAURICE FISHBERG.

1.—Terminal Coma in Diabetes.—A. R. Elliott reports four fatal cases of diabetes, which illustrate in an interesting manner some of the different varieties of the terminal coma in this disease. The first was a well-marked case of diabetic collapse, the diabetic heart coma of Von Schmitz, induced by myocardial degenerative change, probably fatty in character, under the influence of the depraved diabetic nutrition. In the second case a nephritis complicated the diabetes. After a few days' treatment the patient neglected the dietetic and other hygienic precautions, the kidneys later became thoroughly irritated, starting into activity the latent nephritis, which, under the influence of further congestion gave rise to profound uremia. The third case was that of a man, aged 76, who became diabetic at the age of 55. The glycosuria proved amenable to dietetic treatment for years, when it gradually became less controllable, and signs of nephritis increased. Diabetic coma followed. This gradually improved until the diabetic toxemia entirely disappeared. A few days later he died of uremic toxemia. In the fourth case an injury to the central nervous system served to aggravate the diabetes and converted a previously mild disease into a fatal one. Prophylaxis is of the first importance in the treatment of diabetic coma. The author believes that the rigidity of the diet should be relaxed, that he should have as much bread, green vegetables, and potatoes as he likes, providing his wants be not too immoderate. He should be protected against all disturbing nervous influences, from fatigue and cold, and elimination should be stimulated. Sodium bicarbonate in doses which do not interfere with gastric digestion should be administered at this stage. When the prodromes of coma appear, the patient must be put to bed, stimulants given, and the bowels thoroughly evacuated. Alkalies should then be given in enormous doses, and normal salt solution charged with sodium bicarbonate may be used freely by bowel and subcutaneously. Oxygen may be administered. [C.A.O.]

2.—Syphilitic Pseudotabes.—A case is reported by Joseph Collins in which the symptoms and signs of tabes were typical but in which the pathologic lesions of the cord and meninges were characteristic of syphilis. The facts of the case are given in detail, as are also the pathologic changes made out in microscopic examination. He also considers the differential diagnosis of genuine tabes and syphilitic pseudotabes and multiple neuritis, tabes and flat feet, tabes and multiple sclerosis, and tabes and paresis. [C.A.O.]

4.—Sputum Examination.—C. B. Fitzpatrick outlines the following method: Spread a moderately thin layer of sputum on the slide or cover glass. The smear is allowed to dry in the air or in an oven at a temperature of about 50° C. It is then passed three times through the flame. The preparation is next placed in a fresh solution of the Ehrlich aniline-fuchsin. If the smear has been made upon a cover glass, a watch glass full of the aniline-fuchsin solution is taken, and the preparation is floated upon it with the smeared surface facing downward. The watch glass is then held over a flame until the solution begins to boil. It is then allowed to stand for one minute. If the preparation is upon a glass slide, the slide should be covered as a whole with the solution and the smeared surface should be separated from direct contact with the bottom of the receptacle by a layer of the coloring solution. The solution when used in this way is also heated until it begins to boil, and is then allowed to stand for one minute. The smear is next removed from the fuchsin solution and washed off in running water; then placed for about one minute in a decolorizing solution made up of three parts of hydrochloric acid and 97 parts of 70% alcohol. The smear is then washed off in running water and covered with the Loeffler alkaline solution of methylene-blue.

This contrast stain is allowed to remain on the smear one or two minutes, or until the preparation becomes a distinct blue. It is then washed off and the smear dried with filter paper and passed rapidly through the flame several times. The examination of this preparation will show the tubercle bacillus, when it is present, as a minute red or pink rod. [C.A.O.]

Medical News.

April 11, 1903. [Vol. 82, No. 15.]

1. Some Problems in the Major Surgery of the Kidneys, with a Report of Cases. JOSEPH A. BLAKE.
2. An Operation for Paronychia, or "Run-round." SINCLAIR TOUSEY.
3. The Geographic Distribution of Uncinariasis in the United States. WILLIAM RIDGELY STONE.
4. Lung Surgery: Historical and Experimental. BENJAMIN MERRILL RICKETS.
5. Report of a Case of One-sided Dislocation of the Mandible: Reduced by a Novel Manipulation. FRANK WOODBURY.
6. Eye Affections Complicating and Resulting from Rheumatism. RALPH OPDYKE.

1.—Surgery of the Kidneys.—J. A. Blake confines himself to the treatment of surgical conditions of the kidney, dwelling for the most part on the relative merits of nephrectomy and nephrotomy in suppurative conditions and in advanced calculous diseases of the kidney. He enumerates as coming under this classification pyonephrosis, infected hydronephrosis, pyelonephritis, and calculous disease with suppuration. On the whole the author agrees with Johnson, whose conclusions are that primary nephrectomy, in any of these conditions, is the safest, and that nephrotomy gives a much higher mortality. Isreal's statistics agree in the main with the experience of the author and Johnson. The writer reports a series of nine cases: Four were cases of pyonephrosis, all treated by nephrectomy, with one death; three were cases of infected hydronephrosis, nephrectomy being performed in two cases with resulting cures, and nephrotomy in one case with a permanent resulting urinary sinus; one was a case of acute pyelonephritis with puerperal sepsis, a nephrectomy effecting a cure; and one was a case of multiple renal calculi with suppuration, a nephrectomy resulting in recovery. [A.B.C.]

2.—Treatment of Paronychia.—S. Tousey asserts that it is radically wrong to make an incision through the flesh of the finger into the pus sac at the root of the nail. The infection and pus are in the groove in which the root of the nail is lodged, and the proper route for reaching it is by merely separating the attachment of the cuticle from the dorsal surface of the nail to permit the escape of pus, and a proper disinfection of the pus sac. It may be necessary to cut across and remove the root of the nail. By this method the only instrument needed is a small knife to push back the adherent cuticle. No anesthetic is necessary, and no blood should be drawn. In cases of long standing, in which pus has burrowed under the nail, it may be necessary to remove entirely that appendage. [A.B.C.]

3.—Uncinariasis.—W. R. Stone thinks the literature of the disease will soon increase, since these parasites abound in our new insular possessions. The disease is found in our Southern States, where whites and blacks indulge in clay eating. It is to be looked for in the new subways, in which so many Italian laborers are employed. But 38 undoubted cases have been reported in this country, and 18 were infected outside. Building of the Isthmian canal will swell the numbers. The writer describes the two varieties infesting man. Great care should be exercised in identifying them. [H.M.]

4.—Lung Surgery: Historical and Experimental.—B. M. Ricketts deals almost exclusively with the literature of the subject, and the article, while valuable from a historical standpoint, contributes but little from a clinical standpoint. Some of the writer's conclusions with reference to surgery of the lung, apparently based upon the experimental work of others, are: Hermetically closing the chest is irrational, unscientific and dangerous; hemorrhage when due to pulmonary tuberculosis should not be allowed to become fatal without opening the chest wall and control measures inaugurated; bleeding of the lung from any cause will in many cases cease when the lung is allowed to contract upon itself with an open chest wall; abscess of any character and at any location in the lung should be found and opened; any portion of or a complete lung may be

removed surgically; puncture of a lung from any cause resulting in hemorrhage should be treated by opening the chest wall and by suture-ligature, forceps or compression controlled. [A.B.C.]

5.—Unilateral Dislocation of the Mandible Reduced by a New Method.—Frank Woodbury reports the case. A girl of 20, in an effort to bite an apple produced a unilateral dislocation of the mandible. The author tried the usual methods of reduction and failed in every instance. He then seized the ramus and angle of the bone in his left hand, placing his thumb in front of the coronoid process. While pressing the bone downward and backward he instructed the patient to gently open and close the mouth several times. Then at a time when the mouth was nearly closed he struck the chin a sudden gentle blow with the knuckles of the half-closed right hand. The dislocated condyle instantly went into place with an audible "click." The author is of opinion that in unilateral dislocation this is a method which will usually prove effective, but it is probably of less value in bilateral dislocation. [A.B.C.]

6.—Eye Affections from Rheumatism.—R. Opdyke shows that an inflammation of almost any of the tissues in and about the eye may result from an attack of acute articular rheumatism, these structures frequently exhibiting a peculiar susceptibility and quickly responding to rheumatic remedies. He discusses the manifestations in conjunctivitis, chalazia, hordeola, lacrimal disease, lithiasis conjunctiva, keratitis, scleral disease, iritis, cyclitis, neuritis, and involvement of the external muscles. [H.M.]

Philadelphia Medical Journal.

April 11, 1903. [Vol. xi, No. 15.]

1. Some Remarks on the Treatment of Croupous Pneumonia. C. S. BRADFUTE.
2. The Diagnosis and Treatment of Incipient Pulmonary Tuberculosis. H. EDWIN LEWIS.
3. A Plea for the Use of Less Drugs in the Treatment of Typhoid Fever. J. K. P. BOWEN.
4. The Postorbital Limbus: A Formation Occasionally Met With at the Base of the Human Brain. EDWARD ANTHONY SPITZKA.

1.—The Treatment of Croupous Pneumonia.—C. S. Bradfute expresses the following conclusions regarding pneumonia, each of which is detailed: Pneumonia is a self-limited disease, and tends to recovery without medication; it has been observed in common with other infectious diseases; that the virulence of the pneumococcus appears to vary at different times and under different circumstances; pneumonia is rare in normal individuals; inflammation of the pulmonary structures, answering to the clinical condition of pneumonia is not always produced by the pneumococcus alone; pneumonia is not a systemic disease, but a localized infection characterized by secondary systemic disturbances, the general systemic involvement being due, primarily, to exaggerated reflex influences, and secondarily to toxemia; while the morbid condition to be met is similar, simple and free from obscurity, the indications for therapeutic measures are complex; in the present state of our knowledge the therapy of pneumonia is purely symptomatic, but not in the old sense. The treatment is based upon these views. Free purgation should be obtained in the beginning of the attack with calomel. Cocain, strychnia, ammonium, and alcohol are the principal drugs to be employed during the attack. The control of the temperature is imperative, the best means of accomplishing reduction being by the means of cold compresses after the method of Baruch, of New York. Alcohol is to be employed as a food, and not as a stimulant. [F.C.H.]

2.—The Diagnosis and Treatment of Incipient Tuberculosis.—Edwin Lewis predicts that in the near future there will be a law enacted, declaring a physician negligent who neglects to use due care and vigilance in determining tuberculosis. The early diagnosis of incipient tuberculosis cannot be made from one symptom alone, the principal facts are obtained by a careful inquiry in regard to the temperature, pulse, cough, weight, digestion, physical condition of the chest and the repeated examinations of the sputum. Interrogation of the temperature is one of the most valuable aids to diagnosis. Not that its absence precludes tuberculosis, but that an unaccountable rise of temperature, 1° to 3°, some time during each 24

hours is pretty certain to indicate the presence of a tuberculous process. Two minor symptoms of value are a more or less marked and extreme dilation of the pupil, and a tendency to horseness without apparent cause, ranging from slight huskiness to complete aphonia. The treatment consists in fresh air; attention to the diet; strychnin in doses larger than ordinarily administered is the most valuable drug; arsenic comes next, in the form of Fowler's solution; atropin, agaricin and picrotoxin are each efficient in relieving night-sweats, but the average patient is markedly improved by an alcohol bath and rub down at bedtime. [F.C.H.]

3.—A Plea for the Use of Fewer Drugs in Typhoid Fever.—J. K. P. Bowen concludes the treatment of typhoid fever as follows: Rest; cleanliness; one to three pints of buttermilk daily; no drugs as a routine, except for external antiseptics and for mouth and nose and some complications; calomel in the beginning; castor-oil for meteorism, necrosis and ulceration; diluted hydrochloric acid if the tongue is soft and flabby; morphin and atropin for sleeplessness in some cases, and strychnin may be indicated especially in convalescence. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN A. O. J. KELLY

EDITORIAL COMMENT

Carcinomatous Gastrocolic Fistula.—While perforation of the stomach in cancer is not uncommon, it rarely occurs into the free peritoneal cavity since prior to the perforation the stomach usually becomes adherent to one of the neighboring viscera, such as the liver, the spleen, the pancreas, the gallbladder, or the transverse colon. If the perforation takes place into the colon a gastrocolic fistula is formed. Two interesting cases of such fistulas, verified at autopsy, are reported by Ph. Koch.¹ The diagnosis is, as a rule, comparatively easy; but other conditions may, at times, closely simulate it. The fistula may exist without characteristic signs, but this is rare. The most frequent symptom is fecal vomiting. Another symptom, which, however, is not mentioned in many of the reports of cases of gastrocolic fistula, is lientery. It is possible that the absence of reference to the presence of undigested food in the stools is in some instances due to an insufficient study of the feces. Diarrhea is the rule, and the vomitus and dejecta are identical. Symptoms of minor importance are thirst, a fecal odor to the breath, and fecal-smelling eructations. The sudden cessation of vomiting is also significant. Various objective signs may aid in the diagnosis. Among these are: (1) A chemical examination of the stools for hydrochloric acid; (2) insufflation of the stomach, which leads to the prompt discharge of flatus per rectum; (3) insufflation of the rectum, which causes distention of the sigmoid flexure, then of the descending colon, next of the stomach, and last of the cecum; (4) the introduction under high pressure of colored fluids into the rectum, which will be followed by their rapid evacuation through the mouth; (5) the passage of water in a cool state from the rectum, after lavage, the coolness of the fluid being appreciable to the patient. In the differential diagnosis a number of conditions must be considered: 1. Intestinal obstruction. In this there is usually meteorism, visible and palpable peristalsis, profound collapse, and obstinate constipation, with fecal vomiting; while in gastrocolic fistula the abdomen is soft and presents no visible peristalsis; the profound collapse is generally absent, and diarrhea persists. 2. Acute peritonitis. The pains in this are very severe. The abdominal walls are hard, distended, and tender. The vomit is usually bilious, and the temperature is elevated. 3. Carcinoma of the pylorus, converting the latter into a stiff, unclosable tube of uniform caliber. This may, in a very marked degree, simulate gastrocolic

¹ Arch. f. Verdauungskrankheiten, Bd. ix, Hft. 1, 1903.

fistula. The writer has seen such a case. At the autopsy a large cancerous growth was found encircling the pylorus, converting it into a patulous canal. A similar case was recently reported to the Pathological Society of Philadelphia by Dr. D. L. Edsall. 4. Hysteria may simulate a gastrocolic fistula. The treatment of the condition is entirely palliative, and consists in the use of morphin. In exceptional instances the establishment of an artificial anus and the partial resection of the stomach and colon may be indicated.

REVIEW OF LITERATURE

Microorganisms in the Water of Public Swimming Baths.—E. E. Glynn¹ gives the results of a series of observations on the microorganisms present in the water of the various Liverpool swimming baths at different periods of the day. Experiments showed that the multiplication of bacteria in the water during the day is slight and that practically all the increase is obtained from the bodies of the bathers. Taking the average of five observations on separate days and the number of bathers as a basis it was found that from each person there had been removed approximately the colossal sum of 4,000,000,000 germs. These figures are for first-class baths frequented by the better class of people. For the second-class baths the number is about one-half more. Streptococci were never found; *Staphylococcus albus*, three varieties, were present in large numbers; *B. coli* was present in the bath at the end of the day, being always absent in clean water. Glynn gives reasons for concluding that danger of contracting typhoid fever from the baths is very slight. He suggests a method by which to avoid the introduction of many organisms that are carried into the water by the bathers, who first walk in the corridor where people wearing shoes are allowed. The ideal bath would have two corridors, an inner one between the bath and the boxes and a second one outside the boxes, the latter being open back and front. In the inner corridor only barefooted people would be allowed and in the outer only those wearing shoes. [A.G.E.]

Concerning Biologic Overexertion of the Organism in the Artificial Nourishment of Nurslings as Compared with the Nourishment with Mother's Milk.—A. Wasserman's² article proves that if two children are given equal amounts, one of artificial the other of mother's milk, the one which is breastfed will thrive more and quicker than the other. This is due to the difference in albumens. The albumens of the artificial food must be changed first into homologous albumens, and to do this certain ferments are necessary, the production of which uses up some of the calories of the milk. The production of these ferments he proves by the following experiments: Two guineapigs are injected intraabdominally, one with goat's milk, the other with guineapig milk, in each case this is followed with an injection of typhoid fever bacilli. In the former case ferments (Ehrlich's complements, Buchner's alexins) to convert goat albumens into homologous albumens are secreted; they destroy the typhoid bacilli, but in producing this ferment considerable energy is wasted. In the latter case the albumen is already homologous, no ferment is needed, and the animal dies of typhoid infection. The older the child grows the less energy is necessary to produce the ferments, and the better the child will thrive on artificial food. He also states that the blood-serum of breastfed children possesses more bactericidal power than that of artificially fed children. [E.L.]

The Action of Adrenalin on the Animal Organism.—P. P. Belaventz³ has studied the physiologic action of adrenalin on animals, chiefly dogs and rabbits. The hydrochlorid of adrenalin was employed. The drug was given by intravenous injections, in doses varying from a total of 2 decimilligrams up to 1 milligram for every kilogram of the animal's weight. The former dose, when injected into the aural vein of a rabbit, causes in a few seconds severe vascular spasm, both ears becoming extremely pale and cold. This spasm lasts on the average 1 to 2 hours, and is more pronounced on the injected

side. No general effects are produced by such small dosage. By increasing the dose up to $\frac{1}{2}$ milligram for each kilo of weight other symptoms were observed: dyspnea, dilated pupils, and paresis. One milligram per kilo produced extreme dyspnea, convulsions, incontinence of urine and feces, maximal dilation of the pupils, and death. The same results followed the injection of adrenalin beneath the skin, the fatal dose being about 10 times larger. The influence exerted by adrenalin on blood-pressure and on respiration was also studied, and the conclusions are summarized as follow: 1. Adrenalin raises blood-pressure by stimulating the heart and constricting the vessels. 2. The vascular spasm is due to a direct action on the vessel-walls. 3. Adrenalin at first irritates and then paralyzes the vagus center, without affecting the peripheral ends. 4. In small quantities adrenalin increases gaseous metabolism, i. e., the amount of oxygen absorbed and the amount of carbonic acid thrown off are both increased. Large quantities of the drug bring about a markedly diminished gaseous metabolism, accompanied by fall of temperature. 5. Adrenalin causes death by paralysis of the respiratory center. 6. The nervous system is depressed by the drug. 7. Caution is imperative in employing adrenalin intravenously or subcutaneously, a frequent pulse being a contraindication to further injections. [L.J.]

Complications and Results of Dental Infections.—The paper by C. A. Hamann¹ sets forth some of the results of infections starting in or about the teeth, only the surgical complications of dental caries being considered. Among the frequent complications is pyorrhea alveolaris, a chronic suppurative condition that can hardly be other than injurious to the general health. Hamann has seen intense ulcerative stomatitis, diffuse submaxillary suppuration, and thrombosis of the cavernous sinus originate from this affection. He believes many cases of so-called cryptogenetic septicemia are to be attributed to it. The occurrence of diabetes mellitus with pyorrhea is believed to be only a coincidence. Three cases of thrombosis of the cavernous sinus have been seen by Hamann. The venous connection between the teeth and peridental structures and this sinus is traced. One case of osteomyelitis of the jaw following dental caries has been observed by the writer. The main consequences of infection from the teeth are stated in conclusion as: (1) Tuberculosis of the cervical glands; (2) general septicemia; (3) Ludwig's angina; (4) thrombosis of the cavernous sinus; (5) osteomyelitis of the maxillary bones. [A.G.E.]

Transmission of Bovine Tuberculosis to Man Through Accidental Inoculation; Reinoculation to Calf.—C. Spronk and K. Hoefnagel² report the case of a flayer of 63, who accidentally injured the little finger of his right hand 20 months before while skinning a tuberculous cow. The wound healed but remained tender, and later became inflamed and cracked open. Examination now shows the presence of a cutaneous tubercle with corresponding infiltrations; the glands at the elbow are enlarged and painful, there is slight dullness over the back part of the right upper lobe, and moist rales. No tubercle bacilli can be found in sputum; the tuberculous nodule and glands were excised; guineapigs inoculated with parts of these developed general tuberculosis, the foci of which contained numerous tubercle bacilli; but few of these were found in the nodule and gland. An emulsion of spleen from the guineapig was injected into the neck of a healthy calf. A granuloma formed at the point of injection; at the autopsy, two months later, in addition to the local tuberculosis, general infection of the pleura and lungs, bronchial and mediastinal glands were found, thus proving that the man was infected with tubercle bacilli of bovine origin. The authors express it as their opinion that it takes several passages through the human body before the bovine bacillus becomes identical with the human, and that infection, the result of tuberculous milk, meat, etc., is much more common than Koch and Baumgarten are willing to admit. [E.L.]

Xylol in the Treatment of Smallpox.—T. K. Wisniewski,³ discouraged by the failure of vaccinations with cowpox to influence favorably the course of smallpox, resorted to

¹ Pediatrics, March, 1903.

² Deutsche medicinische Wochenschrift, January 1, 1903.

³ Russki Vrach, February 15, 1903.

¹ Wisconsin Medical Journal, March, 1903

² La Semaine Médicale, 1902, Vol. xxii, p. 341.

³ Russki Vrach, February 8, 1903.

xylo given by the mouth. The results surpassed all expectations. Six cases were treated, beginning on the second, third, or even fourth day after the eruption, and in all six suppuration did not take place. Where discrete vesicles had already begun to turn into pustules the process was promptly arrested. As a result, no scars remained in any case. Furthermore, the disease either ran a completely afebrile course or the fever was irregular and short in duration, never lasting longer than four days after the treatment had been inaugurated. Xylo was administered in 15-drop doses, 4 to 6 times daily, in claret. It was readily taken and produced no undesirable collateral effects. [L.J.]

Paratyphoid Fever.—Paratyphoid fever, according to L. F. Jermain,¹ does not constitute a clinical entity. Three cases lately under his care are believed to have been this affection. All were in young adults, and all recovered. The average duration of the febrile stage was 16 days. No complications appeared, but in one there was a distinct relapse. In each case three serum tests with typhoid bacilli were made at different stages, but in no instance was a positive reaction obtained. In two of them no cultures of paratyphoid or paracolon bacilli were at hand to demonstrate the serum reaction, but in the last one a positive reaction to Gwyn's paracolon bacillus was obtained. No cultures of the bacillus could be obtained from the blood, but this was probably due to the fact that the temperature of the patient had been normal for several days when the inoculation was made. The symptoms were marked malaise, headache, anorexia, chills with fever, prostration, and in two cases mild bronchitis. General abdominal tenderness and pain were marked in all three cases. The spleen was palpable in all, and quite tender in one. A rash that resembled that of typhoid fever was present in one. The temperature was irregularly remittent and disappeared by lysis. The pulse never exceeded 100 per minute, even with a temperature of 104.5°. No albumin was found in the urine. [A.G.E.]

The Etiology and Terminology of Septic Diseases; with Reference to the Value of Bacteriologic Blood Examinations in Surgery.—Canon² advises bacteriologic blood examinations in all cases of surgical infection, especially in cases in which amputations seem indicated, in puerperal septicemia, cholelithiasis, and instances where biologic remedies are to be used; only by knowing the infecting microorganism can we be certain which serum to inject. The picture of a general infection is brought about in the following manner: Pus organisms and their toxins enter the blood from the local focus. The blood possessing bactericidal power kills the organisms. This continues for a variable length of time, but as the bactericidal power is weakened, the organisms live longer and longer until at last they are even able to thrive in the blood. The weaker the germicidal power of the blood, the more likely the success of cultivating organisms from the blood, and the more likely the appearance of metastatic foci. If the toxins are very powerful death may occur before bacteria are demonstrable in the blood; it must be remembered, however, that the proliferation of the cocci and their destruction are more important in producing septic conditions than the toxins. The separation of sepsis into bacteremia and toxemia is therefore in the main incorrect. The latter may hold in cases of strangulated hernia, intestinal obstruction, etc., but as a rule the word sepsis expresses the condition much better. The term pyemia may be used in conditions where metastases exist. [E.L.]

Embolism of Aorta in Typhoid Fever.—Among the numerous and varied conditions complicating typhoid fever embolism of the aorta is an extremely rare occurrence. Z. F. Orloffsky³ records an example in a man of 22, who was seized on the fifteenth day of typhoid fever with chilliness and deep cyanosis, accompanied by a frequent pulse (150). Subcutaneous camphor injections restored the failing heart action, but a relapse took place, and was followed by the sudden appearance of pain and paresthesia in both legs. The next day brought complete flaccid paralysis of the legs, with complete loss of all reflexes and anesthesia. Both legs, excepting the toes, were cyanosed, and on the left ecchymoses marked the course of the

saphenous vein. The femoral artery could not be felt to beat in either groin. Abdomen bloated and painful, especially below the navel, along the linea alba near the promontory. Spleen painful. Heart-sounds muffled but not arrhythmic. Two days later death supervened. The autopsy revealed thrombi in the lower aorta, in both iliac, the left common pudic, left femoral, left profunda femoris, and left renal arteries. Infarctions of spleen and left kidney. Mural thrombus in left ventricle. The author proposes the following explanation: The patient having shown signs of myocarditis and possibly also aortitis, it is reasonable to surmise that during the collapse thrombi were formed in the diseased heart; when the organ recovered its energy, one of these thrombi was swept down by the blood-stream and became firmly lodged in the aorta. The condition had been diagnosed *intra vitam*. [L.J.]

Disturbances in Health Produced by Atmospheric and Technical Electricity.—Jellinek¹ discusses the conditions which make an electric current more or less dangerous, laying especial emphasis on the strength of the current, and the resistance offered it by the injured individual. A current of 500 volts is usually dangerous to life, but one of 95 has proved fatal, while other individuals have not been injured by 4,000 volts. The harder and dryer the skin the more resistance to the current. If the current is strong, even a unipolar contact is injurious to health. The local symptoms of electric injuries are burns, singeing of hair, ecchymoses and extravasations, perforation, and separation of superficial tissues, and "lightning figures" on the skin. The latter are absent after technical electric injuries. A number of illustrations of the latter are given. Lightning burns, in his opinion, are not due so much to the action of the lightning flame as to the effect of the electricity, which diffuses itself through the tissues. Occasionally no local symptoms are noted; not even at the immediate point of contact. The general symptoms depend on the amount of psychic disturbances and organic changes produced by the electric shock. Thus paralyzes may be purely functional and disappear within a short time, or due to lesions of the central nervous system and become permanent. Death due to electric shocks are explained fully by anatomic changes in brain and spinal cord; they consist of extravasations of blood into gray matter of brain or cord, or into central canal, of destruction of ganglion cells of the anterior horns, of laceration of the finest capillaries, of cell changes, etc. Histologic examinations of other organs have thus far been without result. Diagnosis of electric shock being the cause of death can be made only in recent cases. [E.L.]

GENERAL SURGERY

A. B. CRAIG MARTIN B. TINKER C. A. ORR

REVIEW OF LITERATURE

Taste Fibers and Their Independence of the Trigeminal Nerve.—The article on this subject by Harvey Cushing² is based on deductions from 13 cases of Gasserian ganglion extirpation and details taste experiments made before and after operation on the patients. The object of the communication is to negate the possibility of taste transmission by way of the trigeminal nerve rather than to advocate any other course for such fibers. Cushing says, however, that the generally accepted statement to the effect that an intracranial lesion of the facial nerve is unaccompanied by loss of taste seems to be made on rather slight evidence and should be given the further confirmation, if possible, of experimental observations. The conclusions reached by Cushing are: (1) The perception of taste is unaffected on the posterior portion of the tongue and never permanently or completely lost on its anterior two-thirds after removal of the Gasserian ganglion; (2) a temporary abolition or lessening of the acuity of taste may be found to exist over the anterior and anesthetic portion of the tongue for some days after the operation; (3) this temporary loss of function may possibly be occasioned by some interference with chorda transmission brought about by a mechanical or toxic disturbance

¹ Wisconsin Medical Journal, March, 1903.

² Deutsche Zeitschrift für Chirurgie, Vol. Ixj, p. 93.

³ Russki Vrach, February 8, 1903.

¹ Wiener klinische Wochenschrift, November 13, 1902.

² Johns Hopkins Hospital Bulletin, March-April, 1903.

due to degeneration of the N. lingualis; (4) a lesion of the trigeminal nerve may be associated with disturbance of taste over the chorda territory without the necessary inference that the nerve is a path for gustatory impulses; (5) the N. trigeminus in all probability does not convey taste fibers to the brain either from the anterior or posterior portion of the tongue. [A.G.E.]

Prolapse of the Bowel Treated by Injection of Paraffin.—Stephen Paget¹ reports the case. A man of 65 years eight years ago had undergone excision of the rectum for carcinoma. Since then there was prolapse of the bowel. The author tried the submucous injection of paraffin around the prolapsed bowel. Two rather large masses some $\frac{3}{4}$ inches in height were skilfully placed immediately beneath the mucous membrane and had the effect of preventing subsequent prolapse. Numerous punctures were not made for fear of injuring the veins. The prolapsed bowel with the nodules of paraffin in its submucous layer must be replaced and retained. The bowel must be kept inactive for several days after the operation. The patient should remain in bed for ten days or more until the tissues are thoroughly contracted. [A.B.C.]

Injurious Renal Mobility ("Nephrospasis").—W. F. V. Bonney² considers Glenard's method described as "palpation nephroleptique" as the only one giving reliable results. He divides abnormal mobility into three classes: (1) Those due to exaggerated diaphragmatic movement; (2) those in which the diaphragmatic attachments are relaxed with failure of respiratory return but with support from the fat below; (3) those without either upper or lower supports, evidenced by inward rotation about the pedicle. These cases are always accompanied by symptoms from the drag or strain, suggesting the term "nephrospasis" to describe them. Diseases of all the abdominal organs have been simulated by these symptoms, but the similitude is closest in the case of the pelvic organs. His statistics show that child-bearing and advancing age do not materially increase liability to abnormal mobility. He has never encountered general enteroptosis as an accompaniment of movable kidney. There is a tendency to ventral displacement, constant when rotation is present. This becomes manifest in the erect posture in which Bonney examines all his cases. The location of pain corresponds to the upper lumbar vertebra, radiating *transversely* around the waist and sometimes along the outer half of the front of the abdomen and thigh. There is complete relief on assuming recumbency. Treatment consists in encouraging obesity and in a well-fitting belt, which should be put on while lying down. The belt should fasten in front like corsets, with a lace in the back for permanent adjustment. If the belt fails to give relief operate. [H.M.]

Gastric Tetany.—B. G. A. Moynihan³ in a brief note emphasizes the point that gastric tetany is not the rare or serious disease that has been described by Frankl Hochwart and others. The five cases reported by him were all in males, all were due to simple diseases, and gastroenterostomy cured each of them. Moynihan states that it is probably not too much to say that the extreme form of gastric tetany is a preventable disease. The timely performance of gastroenterostomy would remove the cause, whatever that may be, of the affection. [A.G.E.]

Three Cases of Acute Intussusception in the Same Family.—Riddall⁴ reports the cases, one ending fatally and two being relieved by operation. The youngest was a child of five months, who had the ordinary symptoms of intussusception and died on the third day without operation. The second was seven months of age when the intussusception occurred. At operation intussusception was found and reduced without difficulty, the child recovering. The next patient was also about seven months of age when the attack occurred. The elongated mass could be felt in the upper part of the right abdominal region. Operation revealed an intussusception, which was reduced, the child making a good recovery. [A.B.C.]

Pancreatic Disease Simulating Cholelithiasis.—Between the liver and the pancreas there exists a well-recognized

physiologic and embryologic relationship. An equally intimate pathologic nexus, although it has been repeatedly suspected, has not heretofore, according to Worobjew,¹ received the attention it deserves. The pancreas frequently participates in diseases of the liver, and what is more important to know, it may closely simulate hepatic disease, particularly cholelithiasis. A complete clinical picture of gallstones may thus be present, due exclusively to chronic disease of the pancreas. Infrequently, also, both organs are affected, and we have reason to surmise that the classical symptoms of biliary calculi are only in part due to the latter, the pancreatic component entering largely into the clinical picture. For the physician, and still more so for the surgeon, these facts carry the greatest weight. It has occurred that an operation was performed for "gallstones," and stones were removed from the gallbladder, yet no improvement resulted, and at the autopsy calculi were discovered in the pancreas. Symptoms pointing to pancreatic involvement (chronic inflammations, calculi, etc.) are: 1, colicky pains in the left hypochondrium, unaccompanied by jaundice; 2, diabetic manifestations, chiefly rapid emaciation; 3, fatty evacuations; 4, salivation; 5, tumefaction and resistance in the region of the pancreas, and 6, the appearance of calculi in the stools following attacks of colicky pains, the calculi consisting of carbonates and phosphates of lime. As to treatment, narcotics are of small value in pancreatic colic. Pilocarpin hypodermically and pancreatin internally deserve a trial, but in the event of failure recourse should be had to surgical measures. [L.J.]

Metastatic Goiter.—This unusual case is reported by M. Jaboulay.² The patient was aged 65 and had had for three months a tumor growing from the supero-internal wall of the left orbit. The growth of the tumor had been rapid and painful. Running across it were large vessels, it was pulsatile and expansile and was projected slightly forward synchronously with each pulse beat. Two severe nasal hemorrhages had occurred. The diagnosis of osteosarcoma was made. Removal of the tumor revealed a perforation of the frontal bone, the forward movement of the tumor having been communicated to it by the brain. Histologic examination showed the tumor to be a malignant goiter. The thyroid gland was somewhat hypertrophied and increased in density but had remained in that condition for 30 years without any sign of malignancy. It was movable and painless and there was none of the occipital pain so characteristic of the degeneration of old goiters. The tumor of the thyroid must then be regarded as clinically benign and the tumor of the orbit as clinically malignant. Attention is called to the fact that secondary tumors of other varieties are in certain instances more malignant than the original growth. [A.G.E.]

Constriction of Small Intestine by Gangrenous Appendix.—Guilland and Wallace³ report the case. The patient was a boy of 11 who had previously enjoyed good health. He was suddenly seized with pain in the right iliac fossa after some indiscretions in diet and vomiting soon supervened. Medical treatment was unavailing, the vomiting became constant and stercoraceous. There was a good deal of gastric pain. The temperature was never high and the pulse range was low. A diagnosis of appendicitis was made. On opening the abdomen it was found that the appendix was $3\frac{1}{2}$ inches long, was gangrenous in all but the proximal $\frac{1}{2}$ inch. It was not perforated. It had been twisted on itself and the distal tip was adherent to the mesentery close to the base of the appendix, and through the ring thus formed there was a loop of small intestine 10 inches in length. Its base was constricted. It was much distended and congested, forming an internal hernia. The appendix was removed, the constriction relieved, but the patient died. Necropsy threw no new light on the subject. [A.B.C.]

Lateral Retroperitoneal Tumors.—R. Goebell⁴ reports three of these tumors from Hefelrich's clinic, and has endeavored to collect all the cases belonging to this group and recorded in literature. He found 101 such cases. Pathologically they are classed as follows: Thirty sarcomas, 10 myxolipomas, 9

¹ British Medical Journal, February 14, 1903.

² Edinburgh Medical Journal, December, 1903.

³ The Practitioner, March, 1903.

⁴ British Medical Journal, January 10, 1903.

¹ Chirurgia, January, 1903.

² Lyon Medical, February 22, 1903.

³ British Medical Journal, January 10, 1903.

⁴ Deutsche Zeitschrift für Chirurgie, Vol. lxi, p. 1.

lipomas, 6 each fibromas and serous cysts, 5 dermoid cysts, 4 each fibrolipomas, tumors of accessory adrenals and teratomas; 3 each chylous and blood cysts, 2 each myxomas, myofibromas, myomas, neuromas, ovarian cysts, carcinomas, and 1 cyst of unknown nature. Symptoms of importance in these cases are the pressure signs—edema of lower extremities, stasis of the venous circulation, pains radiating along the course of nerves, paresthesia and intermittent hydronephrosis. Through inflation the colon can always be found to be in front of the tumor. The prognosis is good in the cases of the cystic tumors, in all others, unless operation is performed very early, it is very bad. No operation, however, should ever be performed unless the kidney of the opposite side has through ureteral catheterization been found to be functionally in good condition. [E.L.]

Remote Anatomic Results of Bottini's Operation.—F. Arloing¹ details the autopsy findings in two patients upon whom had been performed the Bottini operation for hypertrophy of the prostate. One was a man of 83 in whom all the symptoms of obstruction disappeared, or were markedly relieved, after operation. One year later symptoms again appeared and in three months the man died from retention and ascending infection of the urinary passages. The second patient was a man of 66, with a history practically the same as the first except that the symptoms recurred earlier and death soon followed. Autopsy on both, one 15, the other 7 months after operation, showed the cut made by the cautery still open. One had been bridged over by fibrous tissue, but this was old and had no part in the later obstruction, this being caused in both instances by increase in the remaining parts of the prostate. The cases are cited to prove the possibility of the long persistence of the incision made in the Bottini operation. [A.G.E.]

Scirrhous Carcinoma of the Male Breast.—W. Blair Bell² reports the case. The patient was a man of 56. Four and one-half years previously he had noticed a small hard lump the size of a pea in the region of the left nipple. This gradually enlarged to the size of a hen's egg. Local treatment was unavailing. Two and one-half years after the initial onset the growth began to ulcerate, and when seen by the author there was a large ulcer, four by three inches, involving the right breast. The discharge was foul, the edges of the ulcer were hard, raised and everted. The entire growth was excised, the underlying fascia and muscles being removed, together with the glands in the axilla, which were apparently unaffected. The patient's recovery was uneventful. Microscopic examination showed the tumor to be a scirrhous carcinoma of the breast. [A.B.C.]

Syphilis and Life Assurance.—It seems to B. Bramwell³ entirely illogical that most medical advisers refuse to accept cases of primary and secondary syphilis and bad cases in which tertiary symptoms have appeared while they accept at ordinary rates cases which have been effectively treated and in which a sufficient time has elapsed to render the further appearance of symptoms unlikely, since they leave out of account the possibility of late nervous symptoms developing. He believes that syphilis shortens life by about ten years and a person who has had it should not be accepted as first class. Life is shortened by the typical tertiary symptoms, particularly those affecting the nervous system, and by parasymphilitic lesions like tabes, general paresis and aneurysm. These diseases occur most frequently during the first ten years of the infection. During this period the greatest extra premium might be required, during the second decade a less one, while during the third very little extra might be demanded. Deaths due directly to syphilis are caused by tertiary manifestations. Tertiary lesions occur in 10% of all cases. [H.M.]

Hypernephroma.—A. P. Ohlmacher⁴ says that it is now far from permissible to call hypernephroma a rare form of renal tumor. During a limited autopsy service in Chicago the past winter he encountered two cases and received two more from surgical clinics. At one meeting of the Chicago Pathologic Society three new cases were presented. Notes on Ohl-

macher's four cases are given. Macroscopically hypernephromas are characterized by a peculiar sulfur-yellow color and a granular cut surface. Foci of softening, of necrosis, and of gelatinous disintegration with occasional hemorrhagic discolorations often mar the uniform appearance of the proper tumor substance. Pathologically these tumors may be benign or malignant. Aside from the discovery of the tumor in the region of the kidney the most significant symptom is periodic hematuria. The liver, lungs, and bones are the most frequent sites of metastases. Incursion of the renal vein is not uncommon. In the operative removal of primary hypernephroma the possibility of venous invasion should be kept prominently in mind, so that precautions like the ligation of the renal and other large veins may be practiced before the tumor mass is manipulated or disturbed. [A.G.E.]

Primary Carcinoma of the Lung.—H. D. Rolleston and R. S. Trevor¹ report the case. The patient was a girl of 13 who was apparently suffering from bronchitis. Pain was most marked on the right side of the chest. After rest in bed there was considerable improvement and after three weeks she was able to be about, when the symptoms again grew worse. The case now appeared to be one of empyema. The whole of the right side of the chest was dull on percussion and the intercostal spaces bulged. There was edema in the right axilla. The subcutaneous veins were dilated. Measurement of the right side was more than that of the left. The heart's apex was displaced outward to the anterior axillary line in the fifth space. The liver was displaced downward. There were no enlarged glands. An exploring needle introduced in two different places failed to find fluid. A rib was resected and the solid growth found. The patient lived three months, weakness and dyspnea being especially marked toward the termination. Necropsy showed that the whole of the right lung, except the apex, was replaced by a soft growth of the consistency of gruel. It was mottled, hemorrhagic and variegated in color. It was markedly adherent to the ninth and tenth ribs. There was no growth elsewhere in the body. Examination of the cervical glands showed that they were not involved. Microscopic examination showed the growth to be a small spindle-celled sarcoma. Pässler's records show that in 9,246 necropsies there were 1,000 cases of malignant disease, only four of which were primary carcinoma of the lung. [A.B.C.]

The Means of Combating Surgical Tuberculosis.—According to A. A. Bobrow² surgical or local tuberculosis may be grouped under two forms, showing certain dissimilarities in their course: the one is a chronic process, characterized by infiltration and formation of new connective tissue; the other is also chronic at times, though oftener subacute, and consists in a cellular infiltration which forms tubercles and through their necrosis leads to cheesy degeneration. In either instance the advent of pus cocci transforms the sluggish process into an acute inflammation. In the absence of a specific remedy our therapeutic efforts must aim at increasing the patient's resisting powers and thus aiding him to overcome the microbic invaders. All hope of salvation by removing the diseased part is distinctly illusory, since surgical tuberculosis must be considered as the local manifestation of a general infection. We combat the chronic nonsuppurating variety with local rest and contrairritating measures, like hot applications, iodine, or the cautery, which all act beneficially by attracting leukocytes and phagocytes to the affected tissues, as well as by stimulating the local circulation. A similar result is obtained by incising and packing with gauze-strips, in order to direct the current of tissue-fluids outward. These measures, however, are inadequate when we come to deal with necrotic and suppurating forms of local tuberculosis. Here active interference is called for, and operative removal of dead or diseased tissue advisable, to be followed by iodine or iodoform locally. It is to be understood that such operations are merely palliative measures, as complete removal of affected areas is impossible in view of the persisting general source of infection. Since this truth has gained recognition surgeons are no longer so anxious to operate as of old, but rather seek to strengthen their patients and pave

¹ Gazette Médicale de Paris, March 14 and 21, 1903.

² British Medical Journal, February 14, 1903.

³ Medical Press and Circular, December 10, 1902.

⁴ Cleveland Medical Journal, March, 1903.

¹ British Medical Journal, February 14, 1903.

² Russki Vrach, January 18, 1903.

the way for nature's own cure. In this connection climatic influences deserve all confidence. Prolonged stay (one to one and a half years) at the seashore exerts a markedly salutary effect, especially in the case of children; the sea-air, the bathing, and not least, the sunlight, contribute their respective share to the final result. Solar rays play a highly important role in the treatment of local tuberculosis, and patients should be instructed to expose their diseased parts to the sunlight. [L.J.]

Fractures of the Lower Extremity Produced by Indirect Violence.—An article elaborately illustrated by skiagraphs to show the position of the fragments and the results of treatment in fractures of the lower extremity is contributed by W. Arbuthnot Lane.¹ He again emphasizes the misleading statements of standard anatomic textbooks regarding the anatomy and physiology of the foot and ankle. The mechanics of Pott's fracture is fully described and the deformities of different types illustrated. Lane urges open operation with coaptation of the fragments by wiring or other means in fractures of the tibia and fibula and also of the femur. [A.G.E.]

Enterectomy for Malignant Disease.—Walter L. Woolcomb² reports two cases, the first being a man 35 years of age who suffered from the ordinary symptoms of intestinal obstruction. On opening the abdomen a growth was found involving the entire circumference of the transverse colon. Resection was done, the bowel united with Robson's bone bobbin. The patient recovered, but died a year after from recurrence of the malignant disease in the dorsal vertebra. The second case was a man of 55. The growth was found completely inserted in the bowel in the sigmoid region. The growth with five inches of the bowel was removed. An uninterrupted recovery followed. Microscopic examination showed the tumor to be a typical glandular carcinoma. The operative treatment in the last case consisted of delivery and fixation of the growth and contiguous bowel outside the abdomen; opening and drainage of the gut above the growth; freeing and uniting the ends of the bowel and repair of the abdominal wall. [A.B.C.]

Operation for Perforation in Typhoid Fever.—A. Depage³ reports a case of typhoid fever with perforation of the intestines on the twelfth to the fifteenth day. The patient was operated upon these days later, at a time when there was a general infection, and made a good recovery. The wound was washed with artificial serum. [J.H.W.R.]

Surgical Interference in Lesions Involving Motor Areas of the Brain.—W. F. Verdi⁴ states that the most important symptom in localizing the seat of motor lesion of the brain is the localized spasm. The exact preoperative localization of the Rolandic fissure, since the exposure of large areas of the brain by the osteoplastic flap, is not so important as formerly. Verdi recommends the use of the rubber band, with pads in front of the ears, to prevent hemorrhage. This expedient saves blood and saves time that would be spent in arresting its flow—both vital points. The technic of operation is minutely detailed. The dangers are three—sepsis, hemorrhage and acute edema of the brain. Three operated cases are reported, two being for traumatic epilepsy and one for tumor. In one of the former cure has apparently followed operation, as two critical periods, June and November, have been passed by the patient without signs of convulsions. In the second case the general health is improved and the number of convulsions diminished. The third patient, operated two months ago, is now practically well, but the recurrence of the tumor, a telangiectatic glioma that had undergone cystic change, is expected, as all of it could not be removed. [A.G.E.]

Radical Cure of Hernia in Young Children.—D. Kennedy⁵ believes it is exceptional for hernia in children to be cured by a truss. Operation is far less dangerous because it prevents all possibility of strangulation. The truss often causes irritation and eczema, and is objectionable on account of becoming soiled with the discharges. The pressure also prevents the development of the adjoining muscles, and finally,

the truss is rarely effectual in keeping up the hernia. He advises operation from the fourth month onward. Points essential to success in operating are prevention of hemorrhage, quickness and thoroughness of anesthetization to prevent shock. He ligatures and resects the sac, but does not fix it to the abdominal wall. He invariably circumcises the child. In congenital hernia he has always found complete union of the elements of the cord with the posterior wall of the sac, and has given up attempts to isolate the latter. He draws it down, transfixes it, passes a ligature in front of the cord as high up as possible, and divides the sac transversely above the scrotum, leaving the lower part to form a tunica vaginalis, dissecting away all he can of the part lying in the inguinal canal below the ligature. [H.M.]

Duodenal Ulcer Perforating Acutely.—Power¹ details four cases of perforating duodenal ulcer, which according to his deductions teach the following lessons: (1) Duodenal ulcers occur more often in men than in women; (2) the extravasated fluid trickles into the iliac fossa, and causes a local peritonitis which may be mistaken for an acute appendicitis; (3) the transparent or bile-stained succus entericus found in the peritoneal cavity is diagnostic of a perforated duodenal ulcer. It is quite different from the gastric contents escaping at a perforated ulcer of the stomach; (4) the prognosis of a duodenal ulcer is worse than that of a perforated gastric ulcer on account of the greater difficulty in closing it satisfactorily; (5) the prognosis should not be too sanguine until after the lapse of the eighth day, and it is always bad, however well the patient may appear, if the pulse-rate continues rapid. The pulse is a much better guide than the temperature; (6) free drainage is imperative, both iliac fossas, the rectovesical pouch, and the space below the liver more particularly need tubes; it is better that the patient should recover with a scarred belly than that he should die with an abdomen full of pus; (7) the feeding of the patient is a matter of great importance. Small quantities of food should be given frequently, and if the patient feels sick the amount must be reduced at once. It is better to give nutrient enemata for some days after the operation than to administer food by the mouth. [A.B.C.]

Operative Asepsis.—Depage² states that neither he nor his assistants touch a septic case or assist at an autopsy before operating. Nevertheless, inoculations from the subungual spaces of those who have made autopsies or dressed infected wounds have convinced him that the following will completely disinfect the hands of such persons: washing from 10 to 15 minutes in soap and water, 5 minutes in alcohol, and 5 minutes in corrosive sublimate solution. He does not believe that a general bath by the surgeon just before operating is a necessary procedure. To disinfect his hands before operating he employs the above method, using soap and water (after cutting and cleaning finger-nails) for 5 to 10 minutes, alcohol and corrosive sublimate 3 to 5 minutes each. The first two are sufficient for disinfection, but the sublimate is used as a supplementary precaution which is well to observe in hospitals. [A.G.E.]

A Rare Case of Cephaloma.—Recent researches have led to a recognition of two fundamental groups of cerebral hernia. The one represents a hernia proper—that is, a prolapse of brain or meninges—while the other is a genuine teratoid growth, which has been named "cephaloma." Tatarinow³ reports such a case in a boy 2 months old. The enormous tumor, occupying the occipital region, measured 27 centimeters across, and showed fluctuation. Under general anesthesia the mass was removed. In the occipital bone an aperture 2 centimeters in diameter was found, through which a small portion of the brain protruded, covered with pia mater. The prolapse was reduced without difficulty, the opening closed by uniting two flaps of periosteum, and the child made a good recovery. Microscopic examination showed the tumor to be a genuine newgrowth, consisting of fat and connective tissue, with areas of neuroglia interspersed. The cutis was very thin, rich in sebaceous and sweat-glands, and abundantly infiltrated with round cellular elements. [L.J.]

¹ The Practitioner, March, 1903.

² British Medical Journal, January 10, 1903.

³ Jour. Méd. de Bruxelles, February 12, 1903, page 81.

⁴ Yale Medical Journal, March, 1903.

⁵ Medical Press and Circular, December 10, 1902.

¹ British Medical Journal, January 10, 1903.

² Journal Médical de Bruxelles, January 15, 1903.

³ Chirurgia, January, 1903.

Successful Removal of 265 cm. (8 ft., 9 in.) of Gangrenous Intestine.—This case is reported by Roswell Park,¹ the patient being a man of 21, operated on five days after the onset of abdominal pain and intestinal obstruction. Incision made in the middle line revealed adherent coils of intestine and a collection of seropurulent fluid. Search showed that the primary fault was a gangrenous appendix, about which three or four coils of small intestine had united themselves and adhered to the cecum, and that all these adherent surfaces were in a gangrenous condition with threatening perforation at numerous points. By a Murphy button the ascending colon was connected with a loop of intestine above the uppermost gangrenous area, and the involved intestine, together with a part of the cecum, removed. Both ends of the bowel were turned in and sutured. The removed intestine measured 265 cm. (8 feet, 9 inches). Drainage was followed by a fecal fistula lasting some months, this healing rapidly after the Murphy button came away, nearly four months after its insertion. The patient is now in the best of health. Park emphasizes the point he made some years ago, that most cases of general peritonitis not plainly due to some ordinarily easily recognized lesion take their origin from an inflamed appendix. In many of these cases it is wise to operate, unless the patient be already moribund. Park agrees with Price that symptoms of obstruction call for incision in the middle line. The location of pain as described by the patient in cases of appendiceal general peritonitis is not always a safe and is often a misleading sign. In the case reported the first complaint of pain pointed to the general peritoneal cavity rather than to the appendix. Frequently the pain is referred to the left instead of the right side. Park appends a table of 17 cases, including his own, in which more than 200 cm. of bowel have been removed. Of these but three died. [A.G.E.]

Resection of Large Intestine for Carcinoma.—James Swain² reports three cases which exhibited the usual symptoms of obstruction. His method of operation in each is detailed. All the patients recovered so far as the operation was concerned. His postoperative treatment in these cases consists in combating shock by the administration of nutritive enemata of brandy and peptonized milk every four hours. Hot water is allowed by the mouth from the first, and so soon as vomiting has ceased water gruel and such substances are permitted. Bread and butter may be given on the third day, and solid food thereafter regularly increased. [A.B.C.]

Enterostomy in Cancer of the Stomach.—Napalkow³ cites his personal experience in favor of enterostomy in certain cases of gastric carcinoma. The general opinion is against this operation, the majority of surgeons being in favor of noninterference with extensive carcinomatous involvement of the stomach. Such a neutral attitude is to be strongly condemned. Life can be prolonged and rendered tolerable by performing an enterostomy, provided, of course, that a gastroenterostomy is contraindicated, as in widespread growths which either leave no healthy space for an artificial outlet or else threaten to involve the latter within a short time. The operation entirely eliminates the stomach from the digestive process, which can be quite efficiently carried on by the intestinal tube alone. Care should only be taken to ensure a free flow of bile and pancreatic juice from the upper segment of the intestine into the lower, and to prevent the gut from discharging its contents through the fistula. In feeding the patient small quantities are to be introduced, otherwise distention of the bowel will be very apt to cause pain. As to pains originating in the stomach, which were due in a great measure to the ingestion of food, they are done away with after enterostomy, and the patient may thus enjoy a comparatively comfortable existence. [L.J.]

Carcinomatous Gastrocolic Fistula.—P. Koch⁴ reports two cases of gastrocolic fistula resulting from carcinoma of the stomach. He also gives a critical review of the subject of gastrocolic fistula, and tabulates the cases previously reported. These fistulas form when pathologic processes in the abdomen lead to adhesions between the stomach and colon,

followed by a perforation. The causes are: Carcinoma of the stomach, 35 cases; ulcer of stomach, 12 cases; tuberculosis of stomach, 1 case; carcinoma of colon, 8 cases; abscess of peritoneal cavity, 5 cases; congenital, 1 case. A gastrocolic fistula may pursue a latent course, but this occurs very rarely. The commonest symptom is fecal vomiting. A second characteristic symptom is lenteria. These two symptoms rarely occur together since the conditions that favor lenteria, namely, pyloric stenosis with large fistulous opening, are just those which diminish the tendency to fecal vomiting. Diarrhea usually accompanies the fecal vomiting, and a third characteristic symptom consists in the identity of the vomitus with the stools. The diagnosis may be affirmed by three tests: (1) Chemical examination of the stools for free hydrochloric acid; (2) insufflation of the stomach or of the rectum whereby the air passes at once into the rectum or stomach, as the case may be; (3) injection of colored fluids into the rectum, with recovery of the same almost immediately by the mouth or vice versa. [B.K.]

The Tuning-fork and Stethoscope in the Diagnosis of Fractures.—The value of these simple instruments in the diagnosis of lesions other than those of the middle and internal ear is emphasized by A. H. Andrew.¹ The test for fractures, especially of long bones, is made by placing the stethoscope in close proximity to the bone near one end and the handle of a vibrating tuning-fork as close as possible to the bone beyond the seat of fracture. When the bone is intact the sound of the fork will be heard with great distinctness. If there is a solution of continuity the sound will be heard faintly or not at all. The variety of instruments giving the best results and the technic is detailed. Several cases are mentioned, among them being three fractures of the neck of the femur. In one of five weeks' duration the sound was heard with almost equal distinctness on both sides, showing that union had occurred. Experiments with the same means in the diagnosis of dislocations are under way. [A.G.E.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Mortality from Cancer.—Charles Templeman² gives certain statistics with reference to the mortality of cancer during the past 25 years: The deathrate from cancer as a whole during the 25 years under review has more than doubled, having increased from 7.27 to 16.92 per 10,000 of the population over the age of 20. This increase is greatest at ages over 45, is common to both sexes, but more marked in the male sex, though the actual mortality is higher among females. In females this is chiefly due to an increase in malignant affections of the abdominal viscera. Uterine cancer and cancer of the breast in females have increased, though not in any marked degree. Cancer of the rectum also show a slight increase in both sexes. In males the highest mortality is from cancer of the abdominal viscera. In males cancer of the mouth and upper digestive tract has also greatly increased. Therefore cancer of regions which may be described as "accessible" has increased, as well as that of parts which are not so accessible and where the diagnosis is more difficult, but the increase in the latter is out of all proportion to that in the former class. During the same period there has been a great improvement both in clinical and pathologic diagnosis, as well as in death certification, and consequently a considerable diminution in returns from such indefinite conditions as "old age" and "disease" of the various organs (without any specification of its nature). This must to a considerable extent have helped to swell the returns of death from "cancer." The author is of opinion, however, that this is by no means sufficient to account for the great increase in cancer mortality, and that this increase is a real and substantial one, though by no means so great or so alarming as the general public believe or as a superficial glance at statistics would seem to indicate. [A.B.C.]

Shall We Curet After Abortion or Not?—A patient of

¹ Buffalo Medical Journal, April, 1903.

² British Medical Journal, January 10, 1903.

³ Chirurgia, January, 1903.

⁴ Archiv für Verdauungs-Krankheiten, Bd. ix, Heft 1.

¹ Chicago Medical Recorder, March 15, 1903.

² British Medical Journal, February 14, 1903.

Michelet's¹ was passing through her third abortion, and as she bled profusely he was forced to dilate the inner os and curet; three days later, on account of renewed hemorrhage, this had to be repeated. The finger was called to the assistance of the curet, and pulled away several large pieces of membrane. The patient recovered and was delivered of a healthy child a year later. In Michelet's opinion the habitual abortion was due to chronic endometritis. The curetment, by removing the mucous membrane, not only stopped the bleeding, but gave the uterine mucosa a chance to regenerate. Curetment therefore seems to him the proper procedure after abortion. [E.L.]

Vaginal Cesarean Section.—W. Ruhl² recommends the anterior uterovaginal incision for obstructed delivery after vaginal fixation, and for those cases in which the posterior cervical wall cannot be reached. But when the cervix is completely accessible the Dührssen procedure, the simultaneous splitting of anterior and posterior cervical walls is to be preferred, as it will undoubtedly give the needed room and avoid the splitting of the lower uterine segment. This Dührssen method is also indicated by a premature loosening of a normally situated placenta. [w.k.]

Recurrent Chorea of Pregnancy.—This rare complication of pregnancy is the subject of a report by Rosenblum.³ Immediately following her first labor, which was premature, the young woman (24 years) was seized with convulsions, accompanied by loss of consciousness (eclampsia). She had never before suffered from chorea. Some four months after confinement choreiform twitchings appeared in the face and hands. The entire body soon became involved in the involuntary, incoordinate, rapid movements. Examination per vaginam led to the diagnosis of pregnancy in the second month. The choreic attacks gained continually in violence, sleeplessness was superimposed, and the condition of affairs justified artificial abortion at the seventh month. She remained in the hospital about two months and was discharged cured. Chorea had disappeared. Two months later a new pregnancy could be diagnosed, which led to a recurrence of the chorea (fifth month). She carried her child to term, however, was confined while suffering from her chorea, and then gradually improved again. At the time of writing the twitchings were almost gone.

Primary Carcinoma of Ovary.—May Thorne⁴ reports the case. The patient was a female of 46. She had suffered from pain in the region of the left ovary for several weeks, which had been developed rather suddenly after muscular examination. Nothing had given relief. On examination the left ovary was found enlarged, the size of a small orange and was tender. A week later the enlargement was more marked, pain was more intense. On opening the abdomen a mass with enormous small cysts on its surface lay to the left of the uterus. It was hard and densely adherent to the pelvic wall. The uterus was apparently normal. It consisted of an enlarged malignant condition of the left ovary. This was removed and the patient made an uneventful recovery and for two months was apparently well, but the growth recurred in the abdomen wall in the angle of the scar, where drainage had been originally placed. The growth was rapid, death occurring four months after operation. Microscopic examination showed the original condition to be carcinoma of the left ovary. [A.B.C.]

Postoperative Hematemesis.—K. Winslow⁵ reports a fatal case of this obscure surgical complication. The patient was a short, stout woman of 65, operated on for strangulated umbilical hernia. The operation lasted an hour and the patient had taken such a small quantity of ether that she talked to the etherizer while the dressing was being applied. The after-progress of the case was at first fairly satisfactory, but on the evening of the third day the patient began to vomit a dark fluid that was brought up in small quantities without retching. At midnight she suddenly vomited an enormous quantity of dark blood and immediately expired. Autopsy revealed considerable dark, clotted blood in the stomach and intestines, but no lesion of the mucous membrane was discovered. There

was no evidence of infection, the wound having healed by first intention. The intestines were apparently normal and there was no sign of tension on the stitches uniting the wound. [A.G.E.]

Periurethral Infiltrations and Abscesses in the Female: Chronic Gonorrhoeal Induration of the Female Urethra.—Just as in man so in woman does the acute gonorrhoeal process spread to the depressions and glands of the urethral mucous membrane. In most of the cases the infiltration stays limited to the follicles, but in cases where the mouth of the follicle becomes obstructed retention of pus follows, and miliary abscesses form in the tissues of the urethra; but if this does not occur, or incision is not performed, the cavernous infiltration will spread along the urethra; and this becomes very much thickened and hardened. Perforation may take place into the urethra or vagina. Matzenauer¹ has seen nine such abscesses during a period of six years, thus illustrating their rarity; five were incised through the anterior vaginal wall. The pus of three contained gonococci in pure culture, two contained gonococci and staphylococci. The other four cases perforated spontaneously, twice into urethra, once through anterior vaginal wall, and once in both directions. Three presented the picture of a mixed infection; one contained only staphylococci. In some of the observed cases the swelling, thickening and induration of the urethra did not disappear, a state of chronic gonorrhoeal induration of the urethra forming, which brought with them urinary disturbances, as difficulty and frequency in micturition. [E.L.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

REVIEW OF LITERATURE

The Form of Hypnotic Sleep in Its Therapeutic Relations.—Rybakow² divides the hypnotic sleeps into four groups which are not, strictly speaking, stages. In the first, which is the lightest form of hypnosis, the condition is very similar to that which occurs sometimes in awaking from a sound sleep. In this form the patient is conscious of his surroundings, and may with difficulty resist the will of the hypnotizer, and on awaking there is a distinct recollection of what has occurred. In the second form the eyes are closed, and the patient is unable to resist the will of the operator, although sometimes he attempts to do so. The muscles are in a condition of catalepsy, so that he remains in the position in which placed. On awaking there is at least partial recollection of what has occurred. In the third form the patient's will is entirely subsidiary to that of the hypnotizer, and on awaking there is no recollection of what has occurred during the sleep. In the deepest form of the sleep there is somnambulism or automatism, so that the actions of the hypnotized may be independent of the will of the operator. It is generally taught that the degree of suggestibility of the patient's mind depends upon the depth of the sleep; while in a general way this is true, the personal idiosyncrasies of the patient and the peculiarities of his disease are also important factors. Every healthy mind is more or less open to suggestion, and it is no evidence of mental or moral weakness when the suggestibility is strong, for this function is the groundwork of the psychic life of mankind. The reception of suggestion depends upon two psychic factors, the capability of taking up foreign thought (suggestibility in its narrow sense), and the capability of making such thoughts the part of one's own ego (psychic assimilation). For therapeutic results both of these processes are necessary; that is, the patient shall not only adopt a suggestion as it is given, but shall make it such a part of his mentality that it shall influence his future actions. Hypnotic sleep is simply a condition in which the interfering activities of the brain as well as the will of the patient are done away with, so that the mind is open to the reception of suggestions. There is, in other words, a temporary increase of the normal suggestibility of the man, but

¹ Deutsche medicinische Wochenschrift, January 1, 1903.

² Zentralblatt für Gynäkologie, March 7, 1903.

³ Medizinische Obozrevie, lix, No. 3.

⁴ British Medical Journal, February 14, 1903.

⁵ Northwest Medicine, March, 1903.

¹ Wiener klinische Wochenschrift, November 6, 1902.

² Die medicinische Woch., 1902, p. 418.

not of necessity any increase in the psychic assimilation of suggestions. If the natural suggestibility is small, the consciousness of the patient is not able to take up the thought during hypnosis and use it after awaking. Under these circumstances sometimes repeated suggestions fix themselves more firmly on the patient's mentality. If the natural suggestibility of the patient is large, a mild degree of hypnotic sleep does not seriously affect, but deep sleep may increase; if, on the other hand, the natural suggestibility is small, hypnotic sleep may often considerably augment. [H.C.W.]

The Relations of Calcium Excretions to Tuberculosis.—According to Croftan¹ the fever-producing power of tuberculin depends upon a peculiar proteid body allied to pepsin. This substance has a very close chemic affinity for calcium. Kühne found that the injection of deutoalbumose produced a febrile reaction in tuberculous cattle. Croftan discovered that if this substance was saturated with calcium it failed to produce any reaction. Moreover, he found that in tuberculosis there is a very high calcium content in the urine, so much that he regards the increased lime in the urine as a suspicious sign of tuberculous infection. On these grounds he believes that calcium salts should be of benefit in the treatment of tuberculosis. [H.C.W.]

Protulin.—It has long been known that certain phosphorus-holding proteids act particularly upon cell nutrition,² as an example of which may be mentioned the effect of nucleins. In these bodies phosphorus appears to exist in the form of anhydrous phosphoric acid. Protulin is a new synthetic, containing 2.7% of phosphorus in the form of the anhydroides combined with natural albumin. It is a white, tasteless powder, insoluble in water, and forms a gelatinous mixture with alkalies. It resists the digestive action of pepsin but not that of the pancreatic secretions. Kocher³ has found it useful in cases of goiter and the beginning of Graves' disease, even when the ordinary forms of phosphorus had failed. He believes it even surpasses in power the newly recommended lecithin. It may be used in osteomalacia, rachitis, neurasthenia, etc., in doses of 2 to 4 coffeespoonfuls. [H.C.W.]

Theocin.—Meinertz⁴ reports the results of clinical trials of this new diuretic, which, as we have noted in a recent abstract, is an artificially made theophyllin, an alkaloid found in tea leaves, and is isomeric with theobromin. Meinertz employed it in dropsy due to heart failure, kidney diseases, serous and pleural effusions and the like. In the great majority of cases there was immediate increase in the amount of urine, sometimes the secretion being augmented four or five times. The effect, however, was usually transitory, so that after several days' experiment the quantity gradually fell again to normal. If under these circumstances the drug was withdrawn several days a second course brought about a renewed diuresis. In one case, for example, after seven treatments, each lasting from four to nine days, and spread over 19 weeks, the seventh trial of theocin produced as large an increase in the flow of urine as did the first. Meinertz was not able to see that the drug had any direct influence upon the circulation. He believes, however, to the contrary, too low blood-pressure prevents its action. Among its undesirable effects are noted disturbances of the digestion with nausea, loss of appetite and in some cases vomiting. It appeared that it was less likely to disturb digestion if given in tablets than if given in powders. The dose is $\frac{1}{2}$ gram (5 grains) three times a day. [H.C.W.]

Therapeutic Use of the X-ray.—Ross and Wibert⁵ believe that although experience with the x-ray as a therapeutic agent is not sufficient to place it definitely among practical methods of treatment, it seems certain of a valuable future. They have found it useful as an analgesic in cases of inoperable tumors, as sarcoma and carcinoma, or any recurrence of these tumors. Besides alleviating the pain associated with these growths, they believe it has some effect in deterring the growth of the tumors. In epithelioma they have found that it exercises a definite curative action. They report one case in which

there had been no return of the growth seven months after its disappearance. They have also found it useful in lupus. In this disease there is apt to be a very marked reaction to the treatment, so that x-ray burns are quite common unless the method is employed with much care. [H.C.W.]

Treatment of Burns.—According to Bjorkmann,¹ in burns of the first degree in which there is merely hyperemia, disinfection of the injury with aseptic protection is usually all that is needed. If the lesion is very painful, Stahls' liniment frequently acts very happily in relieving the pain.

Lime water.
 Linseed oil āā 120 cc. (4 ounces)
 Sodium bicarbonate 60 grams (2 ounces)
 Thymol 0.5 gram (8 grains)

Cover the injured part with a liberal amount of the liniment; then apply borated gauze and a bandage. Shake well before using. The dressing may be renewed as soon as pain returns. (The thymol has sufficient antiseptic properties to keep the lesions sterile and to prevent the bad odor often produced by the liniment itself.)

In burns of the second degree the hypodermic injection of morphin relieves the pain and lessens the danger of constitutional effects. More than one injection is rarely necessary because the first injection allows time for the use of topical applications; injections of camphor and ether are indicated. When the lesion is so extensive that a fatal result is feared, Bjorkmann advises placing the patient in a warm bath of weak sodium bicarbonate. After this the affected area should be thoroughly cleansed with antiseptic solution and the blebs evacuated, allowing, however, the epidermis to remain. In burns of the third degree involving the deeper layers morphin should be freely used to lessen the pain, and stimulants, as ammonium carbonate and strychnin, administered hypodermically, to prevent shock. In severe cases he has frequently resorted to anesthesia, which prevents unnecessary suffering and allows the physician to make a thorough investigation of the extent of the damage. If the lesions are deep and important vessels are scorched or laid open, they should be ligated or tamponed as soon as possible. After this an antiseptic occlusive dressing should be applied and the part elevated. In burns not of a severe degree, Bjorkmann recommends picric acid as being analgesic, antiseptic and reconstructive. The manner of

Picric acid 4 (1 dr.)
 Rectified spirits 60 (2½ oz.)
 Distilled water, sufficient to make . . . 800 (27 oz.)

Externally.

application is, after opening the blister, to place a strip of sterilized gauze soaked in the picric acid solution over the wound, and over this an occlusive dressing. In burns of the second and third degree the dry treatment sometimes gives good results. For this purpose he recommends the various antiseptic powders, especially aïrol, nosophen, and aristol. These may be applied in the form of an ointment, as in the following prescriptions:

Aïrol 4 (1 dr.)
 Woolfat (anhydrous),
 Petrolatum āā 15 (4 dr.)

Sterilize. Apply freely to the burned parts, and cover with gauze and absorbent cotton, and bandage. Leave the dressing intact for several days.

Ichthyol 3 (45 grs.)
 Olive oil (sterilized) 10 (2½ dr.)
 Woolfat,
 Petrolatum āā 40 (10 dr.)

Sterilize. Apply freely on sterilized gauze in burns of second and third degrees. [H.C.W.]

Nicolcin, a Professed Cure for Chronic Morphinism.—B. Fischer and B. Wagner² have made analyses of nicolcin, a drug claimed by its manufacturers to cure the morphin habit. They found its base to be morphin, pure and simple. It contained 3% of this alkaloid by actual weight. [E.L.]

Treatment of Membranous Enteritis.—Bjorkmann³ considers colitis mucosa a neurosis and the treatment therefore should be largely along the line of suggestion. The patient should be discouraged in studying his own symptoms and

¹ Journal of Tuberculosis, Vol. v, 1903, p. 22.

² Klinische therapeutische Wochenschrift, Vol. x, p. 107.

³ Archiv für klin. Chirurgie, 1901, S. 469.

⁴ Therapeutische Monatshefte, 1903, 17, p. 59.

⁵ Therapeutic Gazette, 1903, No. 23, p. 79.

¹ Merck's Archives, March, 1903, Vol. v, p. 82.

² Münchener medizinische Wochenschrift, December 23, 1902.

³ Merck's Archives, March, 1903, Vol. v, p. 82.

impressed with the fact that his disease is neither uncommon nor incurable. Exercise, hydrotherapy and massage are beneficial. The only medical treatment he recommends is the occasional use of a mild laxative, such as saline, cascara, or an occasional course of calomel. In general he believes local medication more harmful than beneficial, but he has occasionally seen high injections of silver nitrate give good results. [H.C.W.]

FORMULAS, ORIGINAL AND SELECTED.

For cardiac weakness associated with hepatic congestion:¹

- Powdered digitalis 0.05 gm. (1 grain)
- Powdered squills 0.05 gm. (1 grain)
- Resin scammony 0.05 gm. (1 grain)
- Calomel 0.01 gm. (1/32 grain)

Five such pills daily for three days. [H.C.W.]

Bernard² recommends in sciatica and other neuralgias the injection of a solution composed of:

- Sodium chlorid65 gram (10 grains)
- Sodium sulfate 1.3 grams (20 grains)
- Distilled water 1 liter (1 quart)

This is warmed to bodily temperature and about 5 cc. injected in the neighborhood of each painful point. Several injections may be given at one sitting. [H.C.W.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 11, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
Alabama:	Mobile.....Mar. 28-Apr. 4.....	2	
California:	Fresno.....Mar. 1-31.....	20	1
	Los Angeles.....Mar. 21-28.....	2	
	Sacramento.....Mar. 21-28.....	1	
	San Francisco.....Mar. 26-Apr. 2.....	5	
	Stockton.....Mar. 1-31.....	4	
Colorado:	Denver.....Mar. 14-28.....	49	
Florida:	Jacksonville.....Mar. 28-Apr. 4.....	4	
Illinois:	Alton.....Mar. 28-Apr. 4.....	1	
	Belleville.....Mar. 28-Apr. 4.....	1	
	Galesburg.....Mar. 28-Apr. 4.....	2	
	Kankakee.....Mar. 24-31.....	1	
Indiana:	Elwood.....Mar. 22-29.....	13	
	Indianapolis.....Mar. 28-Apr. 4.....	10	1
	Kokomo.....Mar. 28-Apr. 4.....	1	
Iowa:	Dubuque.....Mar. 28-Apr. 4.....	1	
Kansas:	Wichita.....Mar. 28-Apr. 4.....	2	
Kentucky:	Lexington.....Mar. 28-Apr. 4.....	2	
Louisiana:	New Orleans.....Mar. 28-Apr. 4.....	3	
		all imported.	
Maryland:	Baltimore.....Mar. 28-Apr. 4.....	1	
Massachusetts:	Boston.....Mar. 28-Apr. 4.....	2	1
	Holyoke.....Mar. 21-Apr. 4.....	2	
Michigan:	Ann Arbor.....Mar. 21-28.....	1	
	Detroit.....Mar. 28-Apr. 4.....	15	
	Grand Rapids.....Mar. 18-Apr. 4.....	10	
	Port Huron.....Mar. 28-Apr. 4.....	2	
Missouri:	St. Joseph.....Mar. 28-Apr. 4.....	1	
	St. Louis.....Mar. 19-Apr. 5.....	7	
Nebraska:	Omaha.....Mar. 28-Apr. 4.....	7	
New Hampshire:	Manchester.....Mar. 28-Apr. 4.....	3	
	Nashua.....Mar. 28-Apr. 4.....	2	
New Jersey:	Hudson County.....Mar. 29-Apr. 5.....	2	
New York:	Buffalo.....Mar. 31-Apr. 6.....	1	1
	New York.....Mar. 28-Apr. 4.....	1	
Ohio:	Cincinnati.....Mar. 27-Apr. 3.....	9	
	Toledo.....Mar. 21-Apr. 4.....	6	
Oregon:	Portland.....April 1.....	1	
Pennsylvania:	Erle.....Mar. 28-Apr. 4.....	3	1
	Johnstown.....Mar. 28-Apr. 4.....	1	
	Norristown.....Mar. 28-Apr. 4.....	1	
	Pittsburg.....Mar. 18-Apr. 4.....	25	4
South Carolina:	Charleston.....Mar. 28-Apr. 4.....	7	

SMALLPOX—INSULAR.

Philippines:	Manila.....Feb. 13-20.....	1	
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SMALLPOX—FOREIGN.

Brazil:	Pernambuco.....Feb. 1-28.....	9	
	Rio de Janeiro.....Feb. 27-Mar. 6.....	8	
Columbia:	Barranquilla.....Mar. 8-15.....	2	
Great Britain:	Birmingham.....Mar. 14-21.....	12	3
	Bradford.....Mar. 1-4.....	6	
	Liverpool.....To Mar. 21.....	86	6
	London.....Mar. 14-21.....	2	
	Manchester.....Mar. 14-21.....	8	
	Nottingham.....Mar. 14-21.....	3	
	Walker-upon-Tyne.....Mar. 7-14.....	1	
	Walsend-upon-Tyne.....Mar. 7-14.....	1	

Italy:	Palermo.....Mar. 7-14.....	1	
Mexico:	City of Mexico.....Mar. 15-22.....	6	5
Russia:	Moscow.....Mar. 7-14.....	3	1
	St. Petersburg.....Mar. 7-14.....	37	5
	Warsaw.....Mar. 7-14.....	4	
Straits Settlements:	Singapore.....Mar. 7-14.....		4

YELLOW FEVER.

Brazil:	Rio de Janeiro.....Feb. 27-Mar. 6.....	27	
Colombia:	Cartagena.....Mar. 9-16.....	1	
	Panama.....Mar. 19-26.....	4	1
Ecuador:	Guayaquil.....Mar. 7-14.....		17
Mexico:	Vera Cruz.....Mar. 21-28.....	2	

CHOLERA—INSULAR.

Philippines:	Provinces.....Feb. 7-14.....	570	270
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PLAGUE—INSULAR.

Philippines:	Manila.....Feb. 13-20.....		2
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Changes in the Medical Corps of the U. S. Army for the week ended April 11, 1903:

WEIRICK, SAMUEL T., contract surgeon, in addition to his present duties at Fort Mason, will make the physical examination of recruits at the recruiting station in San Francisco, Cal.

CHASE, ALPHA M., contract surgeon, is granted leave for one month from about April 15.

The operation of so much of orders of March 27 as relate to Major Guy L. Edle, surgeon, is suspended until July 1.

WINTER, Captain FRANCIS A., assistant surgeon, in addition to his present duties, will report by letter to Major-General John C. Bates, commanding the department of the Missouri, for such duty as may be assigned to him in connection with the assembling of troops at St. Louis, Mo.

HENDERSON, First Lieutenant ALBERT H., assistant surgeon, is granted leave for one month and twelve days from about April 20.

HUSSEY, SAMUEL W., contract dental surgeon, now at San Francisco, Cal., is relieved from further duty in the division of the Philippines, and will report to the commanding general, department of California, for assignment to duty.

CARPENTER, ALDEN, contract dental surgeon, now at San Francisco, Cal., is relieved from further duty in the division of the Philippines, and will proceed to Vancouver Barracks and report to the commanding general, department of the Columbia, for assignment to duty.

WATSON, HARRY J., contract surgeon, is relieved from duty at the Presidio and assigned to duty as transport surgeon of the army transport Sumner now in this port.

ROBINS, ROBERT P., contract surgeon, now casually at Fort Porter, from detached service, is assigned to temporary duty at that post until further orders.

ROBERTS, First Lieutenant WILLIAM, assistant surgeon, will proceed to Hot Springs, Ark., and report at the Army and Navy Hospital at that place for treatment.

WELLS, Captain GEORGE M., is granted leave for seven days.

So much of orders of March 27 as direct First Lieutenant Willard F. Truby, assistant surgeon, to proceed to Columbus Barracks, is amended so as to direct him to proceed to Fort Ethan Allen for temporary duty.

Changes in the Medical Corps of the U. S. Navy for the week ended April 11, 1903:

BIDDLE, C., surgeon, detached from the Navy Yard, League Island, Pa., and ordered to the Minneapolis—April 3.

SMITH, G. T., surgeon, detached from the Puritan and ordered home to await orders—April 3.

NORTON, O. D., surgeon, detached from the Minneapolis and ordered to the Navy Yard, League Island, Pa.—April 3.

HALLOWAY, J. H., assistant surgeon, detached from the Naval Museum of Hygiene and ordered to the Franklin—April 4.

BROWN, E. M., assistant surgeon, detached from the Naval Museum of Hygiene and ordered to the Naval Hospital, Norfolk, Va.—April 4.

MCCORD, D. P., acting assistant surgeon, appointment revoked to take effect April 4, 1903—April 4.

BOGERT, E. S., surgeon, ordered to the Naval Academy, Annapolis—April 8.

LIPPITT, T. M., assistant surgeon, retired, detached from the Naval Hospital, New York, and ordered home—April 9.

ELY, C. F., assistant surgeon, ordered to the Naval Hospital, New York—April 9.

Changes in the Public Health and Marine-Hospital Service for the week ended April 9, 1903:

MURRAY, R. D., surgeon, granted leave of absence for fourteen days from May 1—April 6, 1903.

MCINTOSH, W. P., surgeon, to proceed to Lumpkin, Georgia, for special temporary duty—April 5, 1903.

PIERCE, C. C., assistant surgeon, detailed to represent the service at the meeting of the Florida State Medical Association, to be held at St. Augustine, Florida, April 8-10—April 3, 1903.

ALTREE, G. H., acting assistant surgeon, granted leave of absence for five days from April 8—April 7, 1903.

RODMAN, J. C., acting assistant surgeon, granted five days' leave of absence from April 8—April 7, 1903.

WALKLEY, W. S., acting assistant surgeon, granted leave of absence for two days—April 5, 1903.

HOLT, E. M., pharmacist of the third class, promoted to be pharmacist of the second class, effective March 2, 1903—April 3, 1903.

¹ Bulletin Général de Thérapeutique, February 23, 1903, Vol. cxlv.

² Thesis Paris, 1901.

American Medicine

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“Two industrious baby-killers,” such is the way Dr. Spalding, of Chicago, designates measles and whoopingcough. In seconding and emphasizing the protest against popular and even professional carelessness as to the seriousness of these two diseases the Chicago Bulletin of the Health Department is right. An impression is too widespread that measles and whoopingcough are necessary children’s diseases and the younger the having the disease the better. In other words the more ill-prepared and tender the organism the more resistant it is to disease. Since January 1, says the Bulletin, there have been 129 deaths from measles against 49 for the same period one year ago; 60% of all deaths from measles are among children less than two years of age. And the after-effects are also severe, only less than those of scarlet fever. Physicians should therefore aid in instructing parents that it is not “better to have it now and get through with it,” but on the contrary, it is best to postpone the disease as long as possible. Conditions in England are indicated by this excerpt from the *Medical Press*:

Our two most deadly complaints at present are measles and whoopingcough, both highly infectious and altogether preventable maladies. What is the moral of it all? Why, clearly, that we must prevent the preventable and not rest content until we have weeded these deadly germ-diseases from our midst. The Metropolitan sanitary authorities have only recently commenced to attack measles in earnest. If measles cannot be eradicated without isolation in hospital, then in the name of humanity let the Asylums Board provide the necessary accommodation. To the honor of Londoners be it said that no money has ever been stinted in that direction. Both measles and whoopingcough can be abolished by strenuous notification, isolation, and disinfection.

The Sale of Poisons, the Sales of the Patent Medicine Trust, and the Sale of the People.—According to the *Boston Medical and Surgical Journal*, a parliamentary committee in England has reported upon a revision of the lists of poisons that may be sold, and the conditions under which the sale may take place. To the old lists the committee recommend that a third be added, of such poisons as are used by farmers and gardeners. Similar laws were enacted by the Massachusetts Legislature in 1887–1888, but in 1896 the patent medicine trust found that these laws restricted their sales, and according to their wishes “patent and proprietary medicines” were exempted. During the present

session the State Board of Health has advised that such articles as complexion-bleaches, many of which contain dangerous quantities of corrosive sublimate and lead, should have the poison label required by law of 1896. The recommendation should be accepted, of course, and the exemption brought about by the patent medicine trust should be repealed. The English parliamentary committee found that deaths had occurred from a number of patent medicines containing poisonous substances, *e. g.*, Chlorodyne, Winslow’s Soothing Syrup, Martin’s Pectoral Balsam, Hooper’s Whoopingcough Mixture, Holt’s Whoopingcough Specific, Indian Tincture, etc. Medical societies, local, State, and national, should use their influence to put an end to the free sale of poisons, and especially to those of the patent medicine concerns.

Meat-eating and Alcoholism.—Of the two extremes we believe that vegetarianism is worse than overindulgence in meats. This opinion is also reflected in the new movement called “semivegetarianism,” which, while not wholly foregoing meat, advocates a decided and salutary restriction in that article of diet. Careful observers are convinced that the excessive eating of animal food is one of the causes of a similar excess in alcoholism. The customs and statistics of England are striking in proof. According to an English physician, 55% of the children of the working classes die before the age of 5, as against 18% of the upper classes; \$200,000 a year is spent by the Society for the Prevention of Cruelty to Children. Recent cases of cruelty to children by parents under the influence of drink include a burning stick applied to a child’s leg; a baby half eaten alive by maggots; a 2-year-old child fallen from the lap of a drunken mother against a burning grate, and raw rum poured in sheer devilry down the throat of a babe. There is military necessity behind the agitation in England as to diet and alcoholism. The late war in Africa opened the eyes of the authorities to the physical deterioration of the masses, and bad diet, bad housing, immorality, and alcoholism were seen to be responsible for the incapacity and scarcity of the volunteer soldier.

The Ill-tempered Doctor.—There is one good result of “an overcrowded profession,” and of the sharp competition that exists among doctors in the rivalry for popular favor. This is the disappearance of

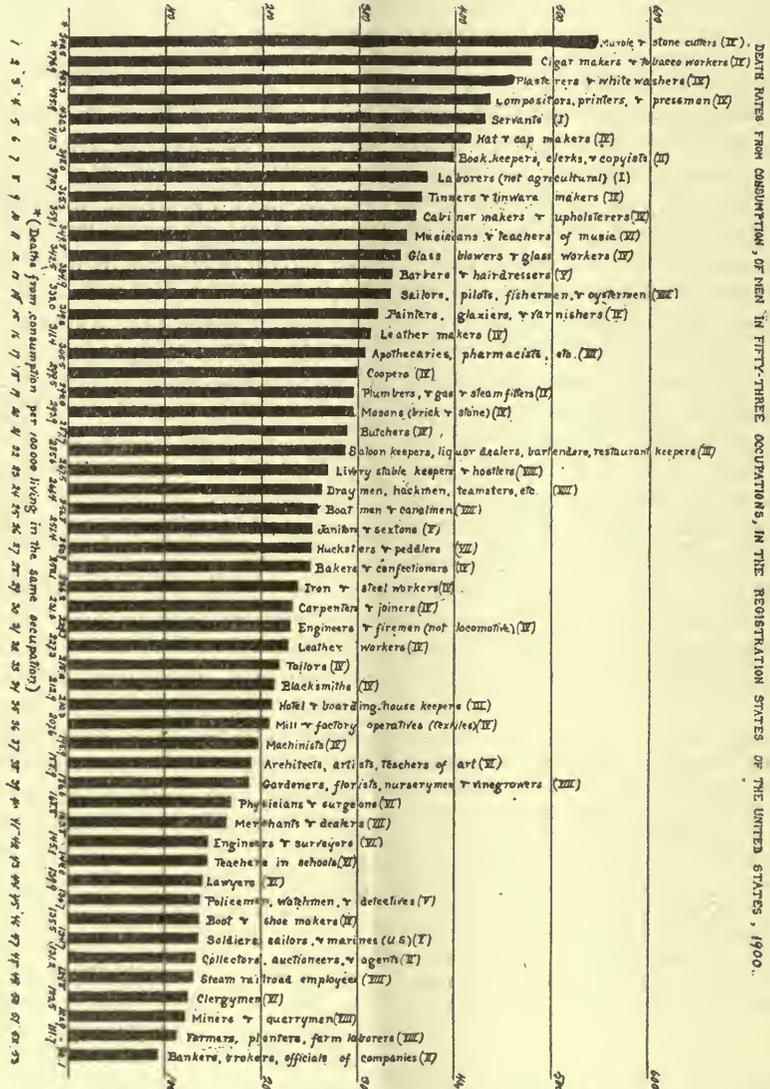
the old-time spirit of harshness and lordliness which sometimes degenerated into positive brutality. These characteristics were the natural products of an original boorishness, increased by success and a comparative monopoly of practice. It takes a gentlemanly mind not to be spoiled by the attitude of subservience on the part of patients and the habit of ordering by the physician in charge. In every large community there are still left specimens of medical Dr. Johnsons who from a ruder age have carried down a cross and commanding acerbity of manner that is now out of place and time. In one of our large American cities there is an example known far and wide. His loss of patients does not teach him any lesson, and seems rather to increase his churlishness. He seems to take a special delight in hurting the feelings of his patients by a perverse irascibility. A patient who was shocked by this manner in the very beginning of the examination, suddenly stopped, and in a quiet manner asked the amount of the customary fee, paid it, and without a word walked away. There are better reasons, of course, against unkindness and coarse egotism, but it certainly no longer "pays" for physicians to be ungentlemanly.

Consumption and Occupation.—

In recent issues of *Charities*, Lillian Brandt has been publishing some excellent articles on tuberculosis. Part IV treats of occupation in its relation to the disease. The author rightly emphasizes the fact that too narrow deductions cannot be drawn from the figures which give the relative deathrates, but after all qualifications have been made there are many evident lessons which are taught by the diagram reproduced herewith from Miss Brandt's article. The statistics are from the registration States (six New England States, New York, New Jersey, Michigan, and the District of Columbia) for the year 1900. The high mortality in such occupations as those of stone cutters, cigar-makers, printers, etc., are more easily explained than the relatively low rates of machinists,

miners, etc. After all, the mortality rates of physicians is not so high as we should have expected, but why the bacillus of tuberculosis should have been so lenient to bankers, brokers, etc., seems hard to explain!

Hookworm Disease.—Dr. Ch. Wardell Stiles, Chief of the Division of Zoology of the Public Health and Marine-Hospital Service, has contributed a work of great importance to parasitology and to medicine, a report (printed by the government) upon the "Prevalence and Geographic Distribution of Hookworm Disease in the United States." In the Old World, hookworm disease was probably known to the Egyptians nearly 3,500 years ago, but its cause was not understood until about the middle of the nineteenth century, when it was shown to be due to an intestinal parasite, *Agchylostoma duodenale*. Until 1893 no authentic cases of this disease were recognized as such in the United States, but between 1893 and 1902 about 35 cases were diagnosed. In 1902 it was shown that a distinct hookworm, *Uncinaria americana*, infests man in this country, and this indicated very strongly that the disease must be present although not generally recognized. It is now established that in addition to the few cases of Old World hookworm disease imported into the United States we have in the south an endemic uncinariasis due to a distinct



cause, *Uncinaria americana*. This disease has been known for years in the south and can be traced in medical writings as far back as 1808, but its nature was not understood. Some cases have been confused with malaria, others have been attributed to dirt-eating. Dr. Stiles says that economically, uncinariasis is very important. It keeps children from school, decreases capacity for both physical and mental labor, and is one of the most important factors in determining the present condition of the poorer whites of the sand and pine districts of the south. The disease is carried from the farms to the cotton mills by the mill hands, but does not

spread much in the mills; nevertheless, it causes a considerable amount of anemia among the operatives. The hookworms are about half an inch long. They live in the small intestine, where they suck blood, produce minute hemorrhages, and in all probability also produce a substance which acts as a poison. They lay eggs which can not develop to maturity in the intestine. These ova escape with the feces and hatch in about 24 hours; the young worm sheds its skin twice and then is ready to infect man. Infection takes place through the mouth, either by the hands soiled with larvæ or by infected food. Infection through the drinking water may possibly occur. Finally, the larvæ may enter the body through the skin and eventually reach the small intestine.

The Symptoms and Treatment of Hookworm Disease.—Dr. Stiles divides cases into three groups, the light, in which the symptoms are very obscure; medium, in which the anemia is more or less marked; and severe, represented by the dwarfed, edematous, anemic dirt-eater. Infection occurs chiefly in rural sand districts. Above the frost line the symptoms are more severe in summer than in winter, and whites appear to be more severely affected than negroes. Persons who come in contact with damp earth are more commonly infected than others, so that the disease is found chiefly among farmers, miners, and brickmakers. Severe cases are more common in women and children than in men over 25 years of age. Any one or more symptoms may be absent or subject to variation; the period of incubation (at least before the malady can be diagnosed by finding the eggs) is from four to ten weeks. Stages are not necessarily distinctly defined, but are described as (1) stage of purely local symptoms, corresponding to the light cases; (2) stage of simple anemia, corresponding to the medium cases; and (3) dropsical stage, corresponding more or less to the severe cases. The duration of the disease after isolation from the source of infection has been treated for six years and seven months; how much longer infection will last is not established. In extreme cases there is a general lack of development; the skin is waxy white to yellow or tan; hair is found on the head, but is more or less absent from the body; breasts are undeveloped; nails white; external genitalia more or less rudimentary; face anxious, may be bloated; conjunctiva pale; eyes more or less dry, pupil dilates readily; membranes pale according to the anemia; teeth often irregular; tongue frequently marked with purple or brown spots; cervical pulsations prominent; thorax emaciated; heart beats often visible; abdomen frequently with "pot belly;" extremities emaciated, frequently edematous, and with wounds or ulcers of long standing. The feces are reddish-brown, contain eggs, and may contain blood. Anemia is pronounced, according to degree and duration of infection; blood watery, with decreased red blood-corpuscles and with eosinophilia; "heart disease" is very commonly complained of; hemic murmurs present; pulse 80 to 132 per minute. There is emaciation and great physical weakness. Appetite is poor to ravenous; abnormal appetite often developed for pickles, lemons, salt, coffee, sand, clay,

etc.; pain in epigastrium; constipation or diarrhea. There are headache, dizziness, nervousness, mental lassitude, and stupidity. Menstruation is irregular or absent; if present, it occurs chiefly in winter; there is a marked tendency to abortion. A microscopic examination should be made of the feces to find the eggs; or if feces are placed on white blotting paper, a blood-like stain will be noticed. The two drugs most commonly used in uncinariasis are thymol and male fern. The day before treatment the patient is placed on a milk and soup diet for three days. The directions usually given for thymol treatment are these: Two grams (31 grains) of thymol at 8 a.m.; two grams (31 grains) at 10 a.m.; castor-oil or magnesia at 12 noon. One week later the stools should be examined, and if eggs are still present, treatment should be repeated until the eggs disappear, but it is not best to give the thymol more than one day per week. Some cases of hookworm disease are quite obstinate and require a treatment extending over several weeks. It is, therefore, an unfortunate error to expel a few worms with one or two doses and then dismiss the patient as cured without having made further microscopic examination for eggs.

The Peruna habit and other forms of alcoholism should be looked into by its religious and newspaper sponsors. We are indebted to Mrs. Martha M. Allen, the energetic worker of the W. C. T. U., for having asked the Massachusetts State Board of Health to analyze Peruna. In an advertisement of this nostrum a statement was made that "Peruna has among its friends many of the leading temperance workers in this country who give it unstinted praise, and do not hesitate to endorse it by the use of the most extravagant language." The chemist found it contained 23.46% by weight of alcohol. We know of one patient, a young lady, who has been taking large doses of this compound, and who has found it so exhilarating that she has made herself a sort of walking advertisement for the enterprising manufacturers. She would have been indignant if asked to take a "cocktail," or a drink of whisky, containing less alcohol than her prized and secret tippie. The Massachusetts Board found 15.33% of alcohol in *Vinol*; 16.77% in *Lydia Pinkham's Vegetable Compound*; 5.87% in *Sucamp-root*. In *Orangeine* there were found acetanilid, caffeine, and sodium bicarbonate. Concerning acetanilid Dr. Abbott, secretary of the board, says that it should be taken with much caution lest its frequent use degenerate into a confirmed habit. The proprietors of *White Ribbon Remedy* were not going to be trapped in one way—there was no alcohol in the drug, but only milk sugar and ammonium chlorid. It is "as likely," adds Mrs. Allen, "to cure drunkenness as would a blast of east wind." We have entire sympathy with the efforts of the W. C. T. U. to expose the meanest hypocrisy of the worst of liquor sellers, the patent medicine manufacturers.

An Outrage, Whether Authorized or Not.—There lie before us three little books issued by a so-named "Imperial Information Bureau" (we had supposed ours to be a democracy) giving lists for traveling

men and others of hotels, physicians, dentists, opticians, druggists, lawyers, banks, etc., in the cities of the parts of the country described in each booklet. Concerning the physicians recommended the company says:

The physicians stand at the head of their profession and have no superiors in their respective localities. We cannot recommend them too highly to life insurance companies and to any and all persons having access to this guide. The insurance companies will find the guide of great value when about to appoint examiners, as we have taken much pains to select men known to have first-class ability in this line. Much time and expense will be saved if the companies will look into the character and general ability of these physicians before making appointments. As to the travelers, they can safely rely upon our selections, when in need of medical advice, and not make haphazard inquiries of the local hotel men, who usually show favoritism. We carefully look into the character and ability of the physicians in every town and then select one of the very ablest and best men. And he is a man who will not neglect the traveler or overcharge him simply because he is transitory. We believe we are doing the travelers, as well as the life insurance companies, a great favor by selecting for them able and courteous physicians upon whom they may call at once when in need of their service.

There is a puzzling variation in the names given in the books. For instance, the "expert surgeons" of Philadelphia highly recommended by the guide books are in one: Keen, Town, Noble, C. P., Noble, W. H.; in another of the books the order and entries are: Keen, Brinton, Forbes, Montgomery, DaCosta, Noble, Town. In the list of "expert gynecologists" none is to be found in Philadelphia, but one man in internal medicine, one in mental and nervous diseases, and none in skin, genitourinary diseases and venereal diseases. In one list there is but one oculist and aurist mentioned in this city, while in a second list there are two "eye men" listed and four "nose and throat." We choose Philadelphia from no invidious reason, as the illogicalities and omissions in other cities are fully as striking.

"An Advertising Dodge."—The kind correspondent who sends us the three travelers' guides noticed above writes:

I send you by today's mail an extraordinary publication in three parts, which contains the names of some of the best men and some of the worst in our profession. It is as distinctly an advertising job as an advertisement in the daily papers. The representative of this publication has paid me frequent visits and as a reason for my subscribing has pointed out the names of Keen, of Philadelphia; Osler, of Baltimore; Janeway, of New York, and many others. I, of course, assume that the names of these men were obtained under a misapprehension of the purpose or the real standing of these manuals as clearly outlined in introductory statements. Probably I am too thin-skinned for the present age, but it seems to me that no reputable man can knowingly permit his name to be used in this fashion. Use the books in any way you see fit. I am told that these books are distributed to the extent of 150,000 a year, a statement no doubt somewhat exaggerated. Not the least remarkable feature is the reference to the names of F. C. Shattuck, H. F. Vickery, and T. M. Rotch, of Boston. It is simply incredible that these men can have authorized the use of their names unless blindfolded to the purpose of the book.

In order to spare our subscribers trouble in writing to us we will state that the publisher's imprint on the title page is Imperial Information Bureau, 314 Pioneer Press Building, St. Paul, Minn. The books bear witness that many names are included without authority.

Whether authorized or not such "enterprise" needs a sharp rapping on the appropriate heads.

The "Index Medicus" in Danger.—We learn that there have been less than 300 subscriptions thus far made for the revived *Index Medicus*. Unless the professional support of the periodical is greater than this the Carnegie Institution will naturally judge that the need of it is by no means so general and certain as has been represented. We should not forget that such a subscription list is a poor vote of thanks to Dr. Fletcher whose labor, unselfishness, and scholarship deserve a far more generous appreciation on our part. The trustees, it must be remembered, have voted the \$10,000 per annum for three years, during which a test can be made of the real professional desire for the periodical. Every physician interested in the literature of medicine—and every one is really interested directly or indirectly—should at once forward his subscription to the Editor of the *Index Medicus*, care of the Library of the Surgeon-General's office, Washington, D. C.

EDITORIAL ECHOES

Osteopathy in Oregon.—Such a phantasmagoria of absurdities can have but one end; it will run its course and fade out of memory, just as did Perkin's tractors, the blue-glass craze, phrenology, faith-healing, and all that series of delusions. We can afford to wait the inevitable result with the calm patience of nature. In the meantime the osteopaths will interest a number of estimable people in their symptoms who might not otherwise have thought of taking treatment, and if there be anything serious behind their disturbances they will ultimately come to us to be cured. The bill as introduced, however, seriously offended our self-respect by practically declaring these charlatans to be doctors for purposes of revenue and title only, but when it came to the legal responsibilities they were to be so in a purely Pickwickian sense; that is to say, so as not to come within the purview of the already existing State Board of Medical Examiners. They were to have all the privileges of our profession, but none of its responsibilities or penalties. They were nominally, it is true, forbidden to use drugs or to perform major surgery, but what does that avail for men who treat all classes of disorders, both bodily and mental, by manipulation of the bones? In other words, they were to have the full privilege of assuming the title, doing the work and collecting the fees of physicians without being required to pass the same examination or spend more than a third of the same time in preliminary study. Upon these grounds the bill was very properly resented and opposed by the medical men in the Senate, and through the vigorous and skilful tactics of Senators Andrew C. Smith, of Multnomah, and C. J. Smith, of Umatilla, backed by the two other members of the profession, was defeated by a vote of nearly two to one.—[*Medical Sentinel*.]

Extinct Race.—From Hopkinsville, Ky., comes the news that Prof. Warren Morehead, curator of the department of archaeology of Phillips Academy, Andover, Mass., has discovered on a farm east of this place what he says was the burying ground of a prehistoric people. Prof. Morehead exhumed ten skeletons, several being in a fair state of preservation. He is making a preliminary investigation in this region, and likely will be followed by a party of archaeologists from Yale College. He pronounces the bones to be those of an extinct race of mound builders. All the skeletons were in receptacles built of flat stones. Stone cups were found in several graves and a stone knife was found in one.

AMERICAN NEWS AND NOTES.

GENERAL.

New Way to Advertise.—A recent advertisement in a newspaper is as follows:

THE NEW WAY—I now treat all diseases by Jullanism—the law of conscious coordination. JULIAN MACCREA.

Congress of American Physicians and Surgeons.—For the Congress of American Physicians and Surgeons, to be held in Washington, D. C., May 12 to 14, 1903, tickets on the fare and one-third plan will be sold May 8 to 13, to be vised at Washington May 12, 13, and 14.

Trachoma Bars Immigrants.—The Hamburg-American Line steamship "Armenia," Captain Falk, which arrived from Hamburg via Halifax, had on board 21 Russian Jews, all men, whom the Canadian Immigration Commissioners debarred because all are suffering from trachoma.

Army Medical School's Honor Men.—Secretary Root delivered diplomas to the graduates of the Army Medical School, and after an address by Dr. John S. Billings, United States Army (retired), Brigadier-General Carter presented the Hoff memorial medal. The four honor graduates were First Lieutenants Harry L. Gilchrist, Samuel M. Deloffre, John W. Hanner, and Edward M. Talbott.

Increase Among Criminals.—The following was recently said by an eminent divine with reference to the increase in the criminal classes in the United States: "In 1850 we had one criminal in every 3,442 of population; in 1890 we had one criminal to every 715 of population; and I dare not look at the figures for 1900, for the proportion of crime has increased to an appalling extent. Explain away this disgraceful decadence of the American people as you will, the fact remains. And bear in mind that these are only statistics of the convicted criminals. Again, in every 218 deaths there is one murder."

"Around the World via Siberia."—This is the title of an interesting book lately written by Prof. Nicholas Senn, of Chicago. The book graphically describes the various countries through which the author passed, including the climate, industries, people, etc. Particular attention is paid to Siberia, and the Doctor describes with some detail the fauna and flora of the country, the Army and Navy, the Government, and the people. Special attention is given to the vast realm of Russia, its charity organizations, its hospitals, national religion, its priests, its prisons and prisoners. The Orient is briefly but vividly pictured by this fertile writer, particular attention being paid to the present condition of China and to the Japanese Government, its religion, its medical schools and hospitals, its leper colonies, etc. Excellent illustrations are given of the different countries passed through and their inhabitants. The book is well worthy a perusal by any one having an interest in travel, particularly in the countries passed through by Dr. Senn.

Increase in the Medical Corps of the Navy.—Surgeon-General Rixey calls attention to the fact that the Fifty-seventh Congress provided for an increase of 150 members to the medical corps of the Navy, 25 of which are to be appointed each year for six years. This, in addition to the retirement of 10 men each year, makes 35 appointments open to young medical men annually. The appointments are made in the grade of assistant surgeon and are within the reach of well-equipped physicians between the ages of 21 and 30. Examinations are held in Washington, D. C., and at Mare Island, Cal., the board of examiners being in continuous session. Application can be made at any time to the Secretary of the Navy for permission to take the examination. Political influence is not required. The examinations are in three general lines: Physical, professional, and collateral. The physical examination is rather rigid. The professional examination embraces the subjects usually studied in a well-equipped medical college. The collateral examination has to do for the most part with subjects ordinarily studied in common and high schools and colleges. The salary depends upon the relative rank held, varying from about \$1,500 in the case of assistant surgeon, to \$5,500 in the case of the surgeon-general, who holds the rank of rear-admiral. It appears that the professional opportunities now open to young men entering the services are good and are constantly improving. The first assignment of duty is usually to one of the 14 naval hospitals. The young appointee is usually sent soon after his appointment to the Naval Medical School in Washington, where the following subjects are studied: Military medicine, military surgery, tropical medicine, naval hygiene, quarantine, the duties of medical officers, hospital corps drill, and administration, ophthalmology, naval law, manual of the sword, and extracts from tactics, instruction in signals, bacteriology, blood examination, and general laboratory work. After five months of such instruction the assistant surgeon is assigned to sea duty. With the great increase which has been made in the Army of the United States during the past few years there appears to be splendid opportunity for active service and promotion in the Navy of the United States.

Medical Officers in the United States Navy.—The Medical Corps of the Navy consists today of the following numbers and grades: One surgeon-general with the rank of admiral (equivalent to brigadier-general in the army); 15 medical directors with the rank of captain (equivalent to colonel in the army); 15 medical inspectors with the rank of commander (equivalent to lieutenant-colonel in the army); 85 surgeons with the rank of lieutenant-commander (equivalent to major in the army); 23 passed assistant surgeons with the rank of lieutenant (equivalent to captain in the army); 56 assistant surgeons with the rank of lieutenant, junior grade (equivalent to first lieutenant in the army), with 152 vacancies. There are 27 vacancies in the grade of assistant surgeon for the year 1903.

EASTERN STATES.

Milk Adulteration.—The report of the Massachusetts State Board of Health shows that an analyses of 6,109 samples of milk offered for sale in Massachusetts showed 28.04% to be adulterated. Other articles of food showed a somewhat smaller percentage of adulteration. Of 3,120 samples examined, 18.9% were not pure.

Health Insurance.—The General Assembly of Connecticut has passed a resolution authorizing the Hartford Life Insurance Company "to insure persons against loss of time and expense resulting from disease." The act, however, does not become operative until it is approved by a majority vote of the stockholders. Most of the life insurance companies of Hartford have now taken up health insurance as a special branch of their operations, and in some cases this department of their business has developed into large proportions.

Smoke Nuisance to Be Abated.—It is stated that an active campaign against the smoke nuisance is to be carried out by the street department in Boston. The smoke inspector and his deputies have sent a copy of the law to a number of violators, and also the following notice: "In accordance with the provisions of the above act, the Mayor of Boston has designated the superintendent of streets as the official to be charged with its enforcement. Complaint has been made that smoke from the chimney on your premises is emitted in violation of this law. You are hereby notified that immediate steps must be taken by you to remedy this nuisance in compliance with the above law."

Cattle Inspection Almost Completed.—Most of the 51 townships in Massachusetts that were visited by the foot and mouth disease have been thoroughly inspected by United States Inspectors from the Bureau of Animal Industry. In the different communities the inspectors have gone from barn to barn and examined the animals, but the only place where they found the disease and where without their effort it might have been discovered was in a Quincy quarry. Part of the force of inspectors have been taken from Massachusetts and sent to New Hampshire to follow up the same line of work. Foot and mouth disease has been completely stamped out in Massachusetts so far as any evidence at the present time shows, but there probably remains some cases in New Hampshire.

Amendments to Medical Practice Act.—The State Board of Medical Examiners of New Jersey has secured amendments to the Medical Practice Act of that State by which the academic standards for admission to the State examinations have been raised from a competent common school education to a diploma issued after four years of study in a normal, manual training or high school of the first grade in that State, or its equivalent. The medical requirements have been increased from three to four courses of medical lectures of at least seven months each in different calendar years prior to receiving the degree of doctor of medicine. The amendments go into effect on July 4 next. After that date candidates for examination or for the endorsement of a license issued by a recognized examining board of another State will be obliged to comply with the new standard of requirements for a New Jersey license.

NEW YORK.

Pure Food Bill Passed.—The Assembly of New York State has passed the Pure Food bill. No food that is adulterated or misbranded can under the terms of the bill be manufactured or sold. The terms of the bill will bear upon certain candy and pickle makers.

Milk Trust in Syracuse.—It is stated that capitalists have bought up 75% of all the milk routes in the vicinity of Syracuse, and that hereafter all milk is to be sold in bottles by the new company. It is said that the price of milk will be reduced and this is thought to be for the purpose of freezing out the smaller dealers that the remaining routes may be secured by the capitalists, and that then the price will be raised.

Waste Paper to be Baled.—Street Cleaning Commissioner Woodbury has decided to experiment in this city with a contrivance, which is now used in Boston, for baling waste paper and street sweepings. The machine is a box-like affair into which paper and sweepings can be shoveled as it is driven through the streets. It is equipped with mechanism driven by a small gasoline motor for compressing the refuse into bales and binding the bales with strips of wire.

Tuberculous Cattle Sent to New York.—Information was received by the State Agricultural Commissioner in Albany that diseased cattle had been shipped from Newport, Herkimer county, N. Y., to the Brooklyn slaughter-house in New York, and the meat was to be sold to New York consumers. The Commissioner at once sent an agent who intercepted the car in the yards in New York City. A report has been received by the Commissioner declaring that a postmortem examination of the cattle showed them to be the most diseased lot of animals that had ever been detained and the meat would have been wholly unfit for consumption. Of 20 cows found in the cars three were in a dying condition and soon expired and others were found far gone with tuberculosis, while three were suffering from pneumonia.

Mr. Carnegie's Gift.—The *New York Sun* is authority for the following: Andrew Carnegie has offered to pay all the bills of students of Cornell University who were stricken with typhoid fever during the recent epidemic in Ithaca. President Schurman today received a letter from Mr. Carnegie to that effect. The offer applies not only to indigent students, but to all cases where the student or his parent will permit it. Each student who has been sick will immediately be communicated with, so that it can be ascertained how much of a gift Mr. Carnegie's offer will mean. It is estimated that it will total at least \$50,000. This gift comes at a very opportune time, for a large percentage of the students who fell ill with the fever are men who support themselves. At a recent mass meeting of students \$1,000 was raised to help these students out, but the amount did not go very far.

Icewater for the Poor.—The work of the Women's Municipal League in New York City is becoming a prominent feature in supplying the poor with cool water. It began last summer to erect icewater fountains in needy districts at a cost of about \$175 each, while the cost of supplying the ice for each fountain during the year was about \$75. This year more extensive work is being contemplated on the part of the League, and appeal is made to the public for contributions for this beneficent purpose. It in part says: "New York has a tenement-house population of over 2,000,000. There are, so far as we have been able to find out, only about 35 icewater fountains to meet the needs of these people, to assuage the thirst of the passerby, the teamster, the weary woman, the little child, the street laborer—and midsummer days in New York are very hot. The city during the present administration is doing splendid work in providing parks, comfort stations, vacation schools, etc., for its citizens, and it is hoped will some time see the way clear to give this necessity also; but, just as kindergartens were started by private initiative, we must not wait for the city, and so ask you to help by the placing of these fountains next summer to make the people more comfortable and the saloons less necessary to them."

New York's Charity.—Frank Leslie's *Weekly* is authority for the following statement: Charity finds a wide field of expression in New York. In all there are probably 2,000 different institutions, conducted by churches, by societies, and supported by subscriptions, by the endowments of the wealthy, or by the persistent efforts of individuals. There is a charity for the mother before her child is born, for the city has its free lying-in hospitals; there is a charity for the newborn babe, should it be deserted by its parents, for it finds its way into the care of the organizations for foundlings. There are many homes for boys and girls, some of these homes modest and poor, some of them most costly and elaborate; there are free schools of all sorts for youths and young girls; there are free employment places for grown men and women who are out of work and unfortunate; and then, there are homes for the aged, for men and for women, and for husbands and wives together, when their days of strength and usefulness have passed, and have left them unprovided for in their last years. And finally, there is a charity which conducts the funeral, for instance, whose members may provide against going to the potter's field, securing a last resting place for their bones that is not a pauper's grave. Thus, to the newborn babe, to the strong man and to tottering old age is the hand of charity extended.

PHILADELPHIA, PENNSYLVANIA, ETC.

Prominent Donor Honored.—Mr. Henry Phipps, of Pittsburgh, who gave \$1,000,000 to found in Philadelphia an institution for the study and treatment of tuberculosis, has been elected an honorary member of the Pennsylvania Society for the Prevention of Tuberculosis.

Twenty-two Pound Baby.—From Washington, Pa., comes the news that Mrs. Thomas Allison, who lives at Midland, near here, gave birth to a son weighing 22 pounds. The child is said to be the heaviest ever born in Washington county and is healthy. The mother is doing well. The father is a coal miner.

Defaulting Treasurer Sentenced.—J. Howard Clemenson, defaulting treasurer of the Pennsylvania Epileptic Hospital and Colony Farm at Oakbourne, Pa., has been sentenced to eight years in the Eastern Penitentiary on the charge of embezzlement. The judge in his sentence said: "The man who stole from the poor, weak, and sick, deserves no consideration." The default amounted to about \$25,000.

Intoxication from Gasoline.—It is stated that physicians in Philadelphia, having noticed for some time past the prevalence of intoxication among boys caused by the inhalation of gasoline fumes, have united in requesting an autopsy on the body of a boy who was in the habit of inhaling gasoline and who was killed by an explosion of gas in a tank car. It was asserted that such necropsy would be of the greatest value in indicating the treatment of this form of intoxication and showing the extent to which the organs are affected.

Clinics by Distinguished European Surgeons.—Prof. Hans Kehr, of Halberstadt, Germany, will hold a clinic at the Jefferson Medical College Hospital at 1 o'clock on Saturday, May 9, 1903, and Prof. J. von Mikulicz-Radecki, of Breslau, will hold a clinic also on the succeeding Saturday, May 16, at the Jefferson Hospital at 1 o'clock. To both of these clinics members of the profession are cordially invited. In order that they may have suitable cases for their clinics members of the profession who have cases of gallstone for Prof. Kehr's clinic or cases of carcinoma or other surgical diseases of the stomach or intestines for Prof. von Mikulicz's, will kindly communicate with Dr. W. W. Keen.

Department of Public Health and Charities Created.—Governor Pennypacker, of Pennsylvania, has signed a bill establishing the Department of Public Health and Charities in Philadelphia. Among other provisions the bill reads as follows: "The Department of Public Health and Charities shall be under the charge of a director and an assistant director, whom the mayor shall appoint, to which department shall be confided the care, management, administration and supervision of the public health, charities, almshouses, hospitals, and all other similar institutions, the control or government of which is intrusted to the city. The Director of Public Health and Charities, as chief executive officer thereof, shall appoint, supervise, and control all the subordinate officers and employes attached to the department, and shall appoint all vaccine physicians and health inspectors; and all hospitals belonging to the municipality where provision is made for the care of contagious diseases shall be under the immediate supervision and control of the Director of Public Health and Charities."

Amount of Water Consumed.—It is asserted that in Philadelphia 250 gallons of water per capita are consumed each day. This, according to the chief of the Bureau of Filtration of the Water Department, is 100 gallons more per capita than should be, and that it warrants the installation of the meter system. Comparison with the consumption in other cities makes a showing unfavorable to Philadelphia: In Cleveland the consumption is 150 gallons; in Detroit, 146; in Cincinnati, 121; in Boston, 143; in St. Louis, 159, and in New York, 120 per capita daily. All these cities have large manufacturing interests and it is said that not one of them has the meter system generally applied, though in most of them there is a greater number of meters used than in Philadelphia. In Providence, R. I., which is one of the few large cities in which the meter system is generally used, the average daily consumption per capita is 54 gallons; in Milwaukee, under a like system, the consumption is 80 gallons. It is stated that Hamburg, Berlin, Rome and Naples and other large foreign cities are coming more and more to use the meter system.

SOUTHERN STATES.

Cambridge Hospital.—Contracts have been awarded for constructing a hospital to cost \$35,000 at Cambridge, Md.

Leprosy in Texas.—State Health Officer Tabor announced April 18 the existence of a case of leprosy in Galveston. This makes three known cases in Texas, the others being in Webb county. Dr. Tabor has asked the State Legislature for an \$8,000 appropriation to fight the disease.

Suit Against Western Union Telegraph Company.—The *Baltimore News* is authority for the statement that Dr. Howard Kelly has brought suit for \$2,000 against the Western Union Telegraph Company because of alleged neglect on the part of the company prevented him from attending an important surgical operation in Cambridge, Md., October 13, 1902. It is alleged that Dr. Kelly left Boston by train on October 12, 1902, and that telegrams were sent to intercept him at both New Haven and at Trenton, neither of which were delivered, consequently Dr. Kelly received no news of the contemplated operation, which, of course, was not performed by him.

Valuable Gift to the Fricke Library.—The Fricke Library of the Medical and Chirurgical Faculty of Maryland is the recipient of a present from Dr. William Osler, consisting of 123 theses for the degree of medical doctor by students of North America at the University of Edinburgh, Scotland, from 1760 to 1873, and secured by Dr. Osler from an Edinburgh publisher. Among the theses are some by the most distinguished of the old physicians of this country, among them being theses by Samuel Bard, Caspar Wistar, Philip Syng Physick, William Shippen, and others. Forty-three of the theses are by Virginians, and 23 by South Carolinians, the remainder from students in other parts of the country. The books are bound in different colors according to the State from which the men came, and most of them are in an excellent state of preservation.

WESTERN STATES.

The Medical Registration bill of Colorado has been vetoed by the Governor through eddyite and press influence which has been brought to bear upon him.

May Not be Tried for Grave-robbing.—It is stated that Dr. Alexander, demonstrator of anatomy in the Central College of Physicians and Surgeons of Indianapolis, charged with complicity in grave-robbing, may never be tried, owing to the fact that none of the negro ghouls in jail awaiting trial will testify against the doctor.

Births in Illinois.—The State Board of Health of Illinois has compiled statistics on the reports of births in the State during 1902. The summary shows that a total of 76,608 births occurred in that period. Of the foregoing 38,671 were males, 37,325 females, and the sex of 612 was not stated in the reports to the authorities. There were reported also 572 twin births, 15 triplets, and 1,767 still births.

Pure Food Law Defined.—It is stated that the Supreme Court of Michigan has set aside the conviction and ordered a new trial in the case of Charles W. Jennings, who was convicted under the State Pure Food Law of selling a compound in imitation of lemon extract. The Court makes the important ruling that if the articles complained of contained all the ingredients and in quantities as prescribed by the pharmacopeia, which are adapted to use as food, and nothing was eliminated except such ingredients as could be dispensed with without injury to the product as a food product, there was no violation of the law.

Work in Chinatown, San Francisco.—The report of Surgeon Glennan, of San Francisco, for the week ended March 28, 1903, gives a summary of the work accomplished in Chinatown during the previous week. Buildings inspected, 63; re-inspected, 34; rooms inspected, 976; persons, 847; sick, 45; dead, 3; necropsies, 1; cases of plague, 0; rats examined bacteriologically, 43; places disinfected, 520; sewers flushed 7 times; streets swept and sprinkled with bichlorid solution, 3. Thus it appears that good and effective work is being done in a district which so long teemed with disease and was a source of danger, not only to the city of San Francisco, but to the entire country as well.

Another Death from Plague.—The public health report issued from the Marine-Hospital Service on April 8 recorded another death from bubonic plague in San Francisco. This is the first death from this disease since December 11, and it was hoped that the rigid method of inspection and sanitation adopted by local and federal authorities had stamped out the disease. Acting under this belief, Mexico recently abolished the quarantine against San Francisco; this quarantine may now be reestablished. It is stated that the work of the allied health authorities is still forging ahead, demolishing the pest houses of Chinatown, although the board is being strongly opposed by many property owners and others in the city, for purely business reasons.

The Army and the Canteen.—Major-General Blunt, of the Ordnance Department at Rock Island, has made a report against the continuance of the system of conducting the post exchange since the abolition of the canteen. After citing some of his objections to the system adopted in lieu of the canteen, General Blunt says: "Since the middle of last February, when the general order went into effect, there have been 11 court-martial cases in this detachment of about 80 men for the offense of drunkenness or other offense incident thereto, as compared with only 12 trials during the five years prior to last February. The post exchange, with its sale of beer and light wines under the regulations in force to last February was, in my opinion, the greatest influence for the promotion of sobriety and discipline in the army which I have observed during my 29 years' service as a commissioned officer. The detrimental effect upon this detachment of prohibiting the sale of beer and light wines is made very evident by the increase of 900% in the number of courts-martial during the last six months."

Mortality of Michigan.—During March the total number of deaths returned to the Department of State was 3,054, or an increase of 278 over the preceding month. The deathrate, however, was exactly the same as for the preceding month, being 14.4 per 1,000 population. The mortality was slightly higher than for March of the preceding year. By ages there were 582 deaths of infants under 1 year, 181 deaths of children aged 1 to 4 years, both inclusive, and 951 deaths of persons aged 65 years and over. Important causes of death were as follow: Tuberculosis of the lungs, 197; other forms of tuberculosis, 40; typhoid fever, 48; diphtheria and croup, 34; scarlet fever, 22; measles, 29; whoopingcough, 34; pneumonia, 403; diarrheal diseases, under 2 years, 51; influenza, 140; cancer, 143; accidents and violence, 150. Comparing March with the preceding month, there was an increase of mortality from all the causes stated above, with the exception of diphtheria and croup, which diseases showed considerable decrease. The mortality from influenza was nearly double that of the preceding month. The deathrate was slightly higher than for March, 1902. There were 3 deaths reported from smallpox during the month, against 5 deaths returned from this cause for February.

Arizona's Laws.—Contrary to what appears to be a general impression that Arizona has no law governing the practice of medicine, we note an act of that Territory regulating medical practice. It appears that before one can legally practise medicine he must have obtained a diploma regularly issued by a medical college legally organized under the laws of the State or Territory wherein such college should have been located at time of issuance of diploma; or shall have passed a State's examination under certain provisions of the territorial law; or shall have practised medicine for five consecutive years in the Territory of Arizona, immediately preceding the act. He must be a bona fide resident of Arizona and shall have attained the age of 21 years. The act authorizes a Board of Medical Examiners for Arizona, which shall consist of five members appointed by the Governor, three of whom shall be physicians of the regular school, one of the homeopathic school and one of the eclectic school of medicine. All candidates for examination to practise are given the same questions in physiology, anatomy, pathology, chemistry, practical surgery, obstetrics, and gynecology. In other subjects they may elect to take the examination from the member of the board which represents their respective school of medicine. License granted by the Board of Medical Examiners may be revoked by them at any time for grossly immoral or unprofessional conduct, after due hearing has been given the accused.

What Constitutes Practice of Medicine?—Arizona's legal definition could with profit be appropriated by the many States of the Union. We give the section in reference to this subject: Any person shall be regarded as practising medicine within the meaning of this act who shall, within this Territory, (a) by advertisement, or by any notice, sign or other indication, or by any statement, printed, written, or oral, in public or in private, made, done or procured by himself or herself, or any other, at his or her request, for him or her, claim, announce, make known or pretend his or her ability and willingness to diagnose or prognosticate any human diseases, ills, deformities, defects, wounds or injuries; (b) or who shall so advertise or make known or claim his or her ability and willingness to prescribe or administer any drug, medicine, treatment, method or practice, or to perform any operation, or manipulation, or apply any apparatus or appliance for cure, amelioration, correction, reduction or modification of any human disease, ill, deformity, defect, wound or injury, for hire, fee, compensation or reward, promised, offered, expected, received or accepted, directly or indirectly; (c) or who shall within this Territory diagnose or prognosticate any human diseases, ills, deformities, defects, wounds or injuries, for hire, fee, reward, or compensation, promised, offered, expected, received or accepted, directly or indirectly; (d) or who shall within this Territory prescribe or administer any drug, medicine, treatment, method or practice, or perform any operation, or manipulation, or apply any apparatus or appliance for the cure, alleviation, amelioration, correction or modification of any human disease, ill, deformity, defect, wound or injury, for hire, fee, compensation, or reward, promised, offered, expected, received or accepted, directly or indirectly; (e) or who shall act as the agent of any person, firm or corporation, in the practice of medicine as hereinbefore set forth, except it be in the advertisement of practice of dentistry, midwifery, or pharmacy, or in the usual business of opticians, or of vendors of dental or surgical instruments, apparatus or appliances. Any person or persons violating any of the provisions of this act upon conviction thereof shall be fined in any sum not less than one hundred (\$100) dollars, nor more than one thousand (\$1,000) dollars, or by imprisonment in the county jail for a period of not less than three (3) months, nor more than one (1) year, or both such fine and imprisonment, at the discretion of the courts.

FOREIGN NEWS AND NOTES

GENERAL.

Eighty Skeletons in Hulk of "Reina Christina."—The warship "Reina Christina," which was sunk in Manila Bay by Admiral Dewey, has been floated and beached. The skeletons of 80 of her crew were found in the hulk. Captain Albert R. Couden, commanding the naval station at Cavite, took charge of the remains of the Spanish sailors, expressing a desire to give them an American naval funeral. The Spanish residents, however, are anxious to ship the skeletons to Spain, and it is suggested that the United States transport "Sumner" convey them to Spain by way of the Suez canal in June.

Hammurabi's Famous Babylonian Code.—The last number of the *Records of the Past* prints a translation of this famous code; that which pertained to the surgeon's art reads as follows: If a surgeon makes a severe wound with the operating knife on a patient, and the patient dies; or opens a tumor of the eye on any one and the eye is lost, the surgeon shall have his hands chopped off. If a surgeon performs a serious operation on the slave of a freedman with an operating knife, and kills the slave, he shall give the owner a slave in the deceased one's stead. If the surgeon has opened a tumor on the eye of a slave with an operating knife, and the eye is destroyed, the surgeon is to pay one-half the price (value) of the slave to the owner.

GREAT BRITAIN.

Salicin and Salicylates.—The death of Thomas John MacLagan, of Edinburgh, calls the attention of the profession to the fact that he discovered the curative action of salicin and salicylates upon rheumatism. As a result of his investigation and experiments the method of treating rheumatism was completely revolutionized, as the salicylates have been for a number of years almost constantly employed in the treatment of this affection, particularly acute rheumatic fever. It appears that the investigation which led to the discovery was upon entirely empirical ground. Dr. MacLagan supposed that rheumatism was miasmatic in origin, similar to malaria, and he was led to experiment with the drug *Salix alba* and with Meadow Sweet. He thus discovered the peculiar effect of salicin and its derivatives upon diseases of the rheumatic type. One can hardly overestimate the importance of this discovery since attacks of acute rheumatic fever, especially if they be repeated frequently, lead to grave cardiac diseases, which often lead to permanent impairment of the heart. This discovery has been of special value in shortening the attack, reducing the fever, and otherwise controlling the disease, no doubt in many instances preventing grave cardiac disease as a sequel.

CONTINENTAL EUROPE.

Drinking Evil in the German Army.—The Hereditary Prince of Saxe-Meiningen, commander of the Sixth Army Corps, who recently issued an order advising soldiers to lodge complaints when they were ill-treated, has issued another corps order against drunkenness. He points out to the privates the damaging effects of alcohol on the health and usefulness of men and directs the regimental doctors to demonstrate to the soldiers its evil effects authoritatively and in a kindly manner.

Alcohol and Civilization.—Home Secretary von Posadowsky-Wehner formally opened the International Antialcohol Congress in Berlin. In his speech he pointed out that the increased mental and physical strain occasioned by the growth of civilization was apt to lead to excessive indulgence in drink. Legislation could only lend mechanical aid to the temperance movement. The real remedy must come from a higher sense of morality on the part of the people, which need not interfere with enjoyment of life.

Mixed the Babies in an Incubator.—It is stated by an exchange that suit has been brought in the courts of Amsterdam by a father who claims that in February last year a newly-born child was taken from the mother's care to be reared in an incubator. In accordance with medical advice the infant was packed in a wadding and hurried to the hospital, where the incubators stand ready to receive weakly babies. Meanwhile, in compliance with Dutch law, the father had the birth of a son registered, and the child was given the name of Franciscus Gerardus there and then. At the hospital a receipt was taken for the baby boy and he was put into one of the incubators. Some weeks passed and the parents received notice that their child was well enough to be taken away. Imagine the father's surprise when he went to fetch his son to have a baby girl thrust into his arms! The hospital nurse declared some mistake had been made by the parents. The parents, nurse and other witnesses declared the mistake was on the part of the hospital authorities. The baby girl was not wanted by the parents of the missing baby boy, and nobody else owned her. The father took proceedings against the mayor of the city, who is the nominal head of the hospital, and claimed £240 damages for his lost son. During the time the child was in the incubator the outside of the machine was painted, and, according to the plaintiff's advocate, the cards on which are written the particulars regarding the inmates were mixed up. A touch of romance is added to the case by the offer of an anonymous lady, who undertakes to pay the compensation claimed by the parents and adopt the girl who ought to be a boy. Judgment will be given next month.

OBITUARIES.

Thomas John MacLagan, of Edinburgh, Scotland, March 20, aged 65. He obtained the Edinburgh degree of Doctor of Medicine in 1860. In 1879 he came to London, and speedily became a most successful physician, with several Royalties among his patients. In 1882 he became a member of the Royal College of Physicians of London. One of the first things that brought him to the notice of the profession was his paper on the Treatment of Rheumatic Fever by Salicin published in the *Lancet* in March, 1876. His discovery of the curative action of this drug led to the adoption of salicylates in the treatment of rheumatism. In 1881 he published a monograph on "Rheumatism, its Nature, Pathology and Successful Treatment;" a second edition of this work appeared in 1896. He also published other works, among which were "The Germ Theory of Disease" and "Fever: A Clinical Study." At the time of his death he was writing another book, which will be eventually published although it is not completed.

William F. Smith, of Baltimore, Md., April 14, aged 85. He was graduated from the College of Physicians and Surgeons, Baltimore, in 1889. He was subsequently appointed resident physician at the City Hospital. Dr. Smith became a member of the faculty of the College of Physicians and Surgeons, and filled the chair of anatomy until ill health forced him to resign. He was also professor of anatomy at the Baltimore College of Dental Surgery.

Albert G. Edwards, at Perry, Okla., April 1, aged 65. He was graduated from the Missouri Medical College, St. Louis, in 1859, and from the University Medical College, Kansas City, Mo., in 1892. He had served as president of the Northern Kansas and Marshall County Medical Societies and of the Society of Surgeons of the St. Joseph and Grand Island Railway. He was also a member of the American Association of Railway Surgeons.

James D. Craig, of Chicago, Ill., April 13, aged 70. He was graduated from the medical department of the State University of Iowa in 1881, and for a number of years served as president of the Michigan State Homeopathic Medical Association. Five years ago he was elected professor of physical chemistry in the National Medical College of Chicago; he held this position for four years.

George Anthony Collamore, in Toledo, Ohio, April 8, aged 69. He was graduated from the Harvard Medical School in 1859, was a member of the American Medical Association, a charter member of the Toledo Medical Society, and served as its president several times. He had also served as secretary and president of the Ohio State Medical Society.

Matthew Gardner, in San Francisco, Cal., April 18, aged 56. He was graduated from the McGill University, Montreal, Can., in 1871. He was chief surgeon of the Southern Pacific Hospital system, and a member of the American Medical Association, California State Medical Society, and the San Francisco County Medical Society.

Chauncey Ayres, at Stamford, Conn., April 14, aged 95. He was graduated from the Yale Medical School in 1831 and was their oldest graduate. In 1832 he served as one of the surgeons in the New York Cholera Hospital. Later he became surgeon of the United States Coast Survey.

Jean B. V. Laborde, of Paris, France, died recently at the age of 73 years. He was a member of the Académie de Médecine and became well known to the profession through his method of restoring asphyxiated persons by rhythmical tractions of the tongue.

Hiram S. Roberts, in Manhattan, Kan., April 1, aged 62. He was graduated from the Jefferson Medical College, Philadelphia, in 1866. He was at one time president of the Kansas Medical Society, and also served as a member of the State Board of Health.

Frederick Nehrbois, of Brooklyn, N. Y., April 13. He was graduated from the Long Island College Hospital in 1891. He had served on the medical staff of the Kings Park and Flatbush Hospitals.

Joseph F. Harrell, in Whiteville, N. C., March 31, aged 70. He was graduated from the Castleton (Vt.) Medical College in 1855 and was a member of the North Carolina State Medical Society.

John E. Sanborn, in Melrose, Mass., April 1, aged 79. He was graduated from the Harvard University Medical School in 1850. He served as a surgeon during the Civil war.

William C. Fritz, in Buffalo, N. Y., March 31, aged 36. He was graduated from the University of Buffalo in 1892, and was a member of the American Medical Association.

E. H. Williams, in Walterboro, S. C., March 31, aged 45. He was graduated from the Medical College of the State of South Carolina, Charleston, in 1879.

Charles Howard, of St. Paul, Ind., April 18. He was graduated from the department of medicine of the University of Indianapolis in 1896.

Alfred L. Murtha, in Brooklyn, N. Y., March 22, aged 25. He was graduated from the Baltimore University School of Medicine in 1901.

Reinhard H. Weber, in Philadelphia, March 30, aged 59. He was graduated from the Jefferson Medical College, Philadelphia, in 1866.

Charles L. Siegel, near Richmond, Va., April 4, aged 83. He was graduated from the Medical College of Virginia, Richmond, in 1891.

William D. Hutchings, in Madison, Ind., April 3. He was graduated from Indiana Central Medical College, Indianapolis, in 1851.

John MacLay, in Richmond, Kan., April 5, aged 55. He was graduated from the Jefferson Medical College, Philadelphia, in 1882.

I. H. Hand, in Leary, Ga., March 22, aged 80. He was graduated from the Reform Medical College of Georgia, Macon, in 1851.

S. Hartwell Chapman, of New Haven, Conn., April 15, aged 59. He was graduated from the Yale Medical School in 1866.

A. G. North, in Hampton, Ga., March 29, aged 47. He was graduated from the Atlanta (Ga.) Medical College in 1879.

John A. Edmiston, in Clinton, Ill., April 5. He was graduated from the Rush Medical College, Chicago, in 1866.

E. Darwin Ayres, in Little Rock, Ark., April 8. He was graduated from the New York University in 1852.

J. H. Bryant, in Los Angeles, Cal., April 5, aged 69.

William B. Town, in Geneva, Mich., April 1.

J. L. Rowland, at Salyersville, Ky., April 4.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

THE DANGERS OF DRUG USING WITHOUT GUIDANCE.¹

BY

J. MADISON TAYLOR, A.M., M.D.,
of Philadelphia.

If a physician were to prescribe the many powerful, poisonous, or otherwise to be avoided materials which are employed in the treatment of bodily ailments, by telling his patient to go to the nearest wholesale drug house and buy a lot of this or that particular drug and use it at his or her discretion, he would be adjudged an extremely dangerous person, and receive well merited blame. If we were to tell the patient that his liver or kidneys clearly showed faults or damage, and that it would be well to try one or more of the various "sure cures" for liver or kidney disease until one was encountered which might prove capable of modifying his symptoms, he would speedily forfeit the confidence of the community, unless it were a shade less confiding than the average community, which can, as a rule, stand a large measure of medical nonsense.

If, however, he were to tell his patient to approach the aforesaid drug emporium and choose liberally of whatever was there offered, and give a faithful trial to all the various well exploited compounds, according to the very graphic descriptions and recommendations inscribed on the labels, or the beautiful circulars which accompany them, and thus select that which he should find best suited to his ailment, the medical adviser might get some praise for the breadth of view, but little for judgment. Yet many sufferers and a large proportion of the intelligent populace of a country, our country anyhow, are pursuing this course at most times and places, laying up for shrewd manufacturing folk princely fortunes, and for themselves heaven only knows how much of ill-fortune in disordered organs; or equally deplored, failing to get, by the exercise of such undirected choice, advice which might check the incipience of disease and save much suffering and shortening of life. Upon what economic ground can self-prescribing be defended? Careful articles have been written to show that drugs and nostrums, bought and consumed, extra medical advice or supervision, approach closely in value the total amount paid the medical profession in fees. If the honorariums of the surgeons for large operations, and large expert medical fees be omitted, it is fair to assume that the aggregate receipts of regular routine medical earnings would foot up to no less than the grand total from self-prescribed drugs and nostrums.

What possible good can follow this widespread use of these endless pseudo remedies? The question demands answer from those who defend this course by their actions. But perhaps the poor deluded victims of the habit or practice, or what you choose to call the custom, are not capable of offering reasons. The query might be put to the makers of nostrums, but they can always furnish most subtle reasons for everything. Again, they are in the main honest workers and often most scientific, as science is generally defined. They know their chemistry, and many of them their physiology, as few of the medical practitioners can claim to do. We are compelled to look to them or to the large manufacturing chemists, with their highly paid experts and enormous and elaborate laboratories, to tell us much that cannot well be learned otherwise.

Ofentimes much that these manufacturing chemists discover we ought to know from other sources. The trouble is they present their data from a commercial standpoint, and much of it and in too verbose a form.

It requires a quality of training, a critical faculty far in excess of that of all but a minute fraction of clinicians, even specialists, to sift out the measure of grain from the bushels of well-meant, semiscientific chaff.

The character of much of the research work of even the trained medical men again is so inchoate, so lacking in con-

sistent relationships to the work of other men, so removed from sound physiologic principles that the rank and file of clinicians are apt to remain in a perpetual maze in their endeavors to reconcile the endless "conclusions" of these research workers reach to clinical facts. If medical science is to fulfil its brilliant promise or its optimistic hopes it would certainly seem to need the fostering aid of men of critical judgment, prophets of power and wisdom, whose sole aim shall be to simplify, to connote, to bring medical thought ever steadily back to fundamental truths, based upon elemental physiology. And these we need much more than increments of research work in pharmacology or experimental therapeutics, certainly in so far as the effects of drugs are thus studied.

The obvious need is for therapeutic teaching which shall disregard unflinchingly glittering new facts until they are demonstrated to be of intrinsic worth, to present broad principles capable of being accepted by all, for there are enough of such principles evolved to form a firm working basis, permitting all reasonable elastic amplifications when needed. It may be claimed that this is done; but few practical physicians will fail to recognize that their own early teaching leaves much to be desired of clean physiologic principles. We read in current journalism daily of the utter overthrow of the confident teaching of our student days. All this is called inevitable progress, yet it must be admitted that truths are for all time, not for the span of our short life and experience; and "the institutes of medicine," as physiology was wisely aforesaid called, when stripped of progressive conjectures ought to constitute a working hypothesis good for eternity. We need professorships of physiologic clinicism or clinical physiology and one of physiologic diagnosis. The science of diagnosis, to fulfill its highest purposes, must be made to begin from within, to proceed along elemental principles of vasomotor tonus, the ebb and flow of the nutrient fluids by alternations in the control agents, the vasodilators and vasoconstrictors, rather than from external surface indications.

What shall we do to stem the tide, the steadily increasing tide of drug using, of reckless, of senseless, of undirected or foolishly directed drug using? Is such a state one of high civilization, an evidence of an intelligent scientific age? It is to be feared we will stand arraigned in later ages as a drug consuming race and this an epoch of dose swallowing. Is it that the medical men are to blame? Assuredly we are, unless we keep our heads and decline to be hurried in our pharmacologic judgments by both drug manufacturers and laboratory physicians. The stimulus to change our principles of action too often comes from quacks and charlatans. The time was when these fellows outdid us in the variety and picturesqueness of their nostrums and we followed. Now the tide is turning the other way, and we had best stand clear of over use of drugs and turn our attention to the great field of scientific climatology and mechanotherapy, the use of waters and heat and cold, and light and special rays, and the like whereby the greatest results are yet to be had.

Above all, the medical practitioners will do well to take heed of the abundant facts demonstrated by manual therapy, which has already become a great heritage, and though well recorded is still scattered, unsystematic and not yet authoritative and unfortunately ignored by those who should know better and make use of the agency themselves.

Why do medical men, who alone can use them knowingly, relegate remedial movements and manipulations to loosely and briefly trained folk whom they regard as their inferiors, called masseurs, bonesetters, physical professors, and such, and content themselves with administering an ever increasing variety of drugs?

Chiefly because we are indolent or indifferent and follow along well-beaten paths which are lines of least resistance. We, all of us, are imbued with the ideas of feticism more or less, which our homeopathic brethren have largely fostered. It is so easy to lean on the confident assertions of those high in authority, those teachers who have had it personally revealed to them by private advices from the Throne of Wisdom, precisely how certain drugs act on the ultimate atom. To be sure we need this faith and need it badly till our works justify our faith. Our medicines assuredly do at times help our patients

¹Read at a meeting of the American Academy of Medicine, March 21, 1903.

mightily. Especially in emergencies and when we cannot continue personal supervision. But the pity of all this is that our faith is blindly amplified in those who have little or no capacity or training to judge of the effects thus wrought, and who, trusting to the marvelous recuperative powers of human cells, surpass us in confidence in the curative powers of drugs. We set the example, we praise the agents, we or our colleagues of the manufacturing guild sing largely of wonders wrought and to be wrought, and the public, having much desire to get well and keep well, give us a Roland for our Oliver and take undirected ten times the potions and pills we would think already too much.

And some of these self-selected medicines are most seductive, fostering evil appetites, containing as they do hurtful amounts of alcohol or other narcotics. This is true of the much advertised concentrated foods, as to the virtues of which people of much influence who should know better lend their names. Most wines or preparations of drugs containing wines are taken independent of professional direction. Especially are these harmful when they are the menstruum of narcotic drugs, some of which stimulate or awaken morbid passions, and most inculcate or increase the appetite for alcohol. The one influence on which we ought to be able to depend to limit the overuse of hurtful drug preparations should be the clergy, and they would thus accomplish far greater good than by hurling carefully tempered anathemas at the amusements of the rich and at Sunday open-air sports.

Again, one suggestion to which time forbids more than a mere allusion: If the overuse of drugs is perilous, what of the adulterations also consumed? But that is another story.

ULTRAVIOLET RAY ANESTHESIA IN MINOR SURGERY.

BY

THOMAS W. BROCKBANK, M.D.,
of Philadelphia.

More or less attention has been given recently to the treatment of certain forms of disease by the ultraviolet rays, and this being a comparatively new field of study it is very desirable that all men who have had a chance to study the conditions best suited for the use of this method and the class of cases or conditions to which it is most applicable should report their results that ultimately its proper field of usefulness and its therapeutic limitations may be determined.

With this end in view I desire to report two recent cases in which I used the ultraviolet rays for the purpose of producing local anesthesia of the skin.

CASE I.—Mr. McK., aged 24, called at my office March 16, suffering from a wound received while at work as a grinder in the Germantown Tool Works. On examination I found a clean incised wound of the left forearm extending from the head of the ulna parallel with the bone for a distance of two inches, exposing the tendons of the muscles in that region throughout its entire length. After cleansing the parts in the usual manner I exposed the injured area for 15 minutes to the rays from a No. 4 Munnin lamp, at the end of which time I put in five interrupted silk sutures without causing the patient any discomfort. I dusted the area with an antiseptic, dusting equal parts of ur-a-sol and aristol powder, covered with 10% iodoform gauze, a small compress of absorbent cotton and a roller bandage. The wound healed nicely and gave no trouble.

CASE II.—Fatty tumor. Mrs. S., a widow, aged 45, consulted me March 25 in reference to a swelling just below the left breast. Said she had noticed it for over a year, it gave no pain and enlarged very slowly. She had been advised to have it removed but had not done so because she dreaded taking an anesthetic. Examination showed a fatty tumor. Her purpose in consulting me was to have it removed if possible by electrolysis. I advised removal with the knife under violet ray anesthesia to which she consented. After thoroughly cleansing the site of the operation I exposed it to a No. 4 lamp at eight inches for 20 minutes, and at slightly greater distance during removal. I made an incision two inches long down to the tumor without causing sufficient pain to give any distress. After breaking up adhesion I shelled the tumor out without difficulty. The hemorrhage was slight and readily controlled by pressure. Edges of wound were brought together and held by fine interrupted silk sutures without complaint on part of patient. Dressed with antiseptic powder and iodoform gauze and compress held in place by adhesive strips and a roller

bandage. Patient suffered no shock or distress of any kind, was taken to her home in carriage and put to bed. Dressings were examined on second day and found perfectly dry; were left alone till fourth day when they were removed. Wound was healed perfectly, stitches were removed and an iodoform gauze dressing applied to remain for two days.

These two cases illustrate nicely the anesthetic properties of the violet rays and suggests a class of cases to which they are applicable. As my experience extends in the use of this new agent I will from time to time make further reports and hope others who work along these lines will do the same.

SELF-PERFORMED SURGICAL OPERATIONS.

BY

H. E. RANDALL, M.D.,
of Lapeer, Mich.

In Gould and Pyle's "Anomalies and Curiosities of Medicine," under the title "Self-performed Surgical Operations," p. 703, a case is reported with the remark that this is probably the only instance in which a patient suffering from vesical calculus tried to crush and break the stone himself.

An old book, "Surgeons and Hospitals of Paris," written by F. Campbell Stewart, M.D., and published by A. Burke, Buffalo, which belongs to Dr. Kay, of Attica, relates the case of General Claude Martine. In the biography of Civiale the following occurs: "Frequent attempts had been made by the older surgeons to accomplish the desirable end of removing stone from the bladder without having recourse to lithotomy; and even as far back as 400 years before Christ Hippocrates conceived the idea that such a result was practicable. Since his time and through almost every succeeding age numerous attempts, always progressing, have been made both by professional men and those wholly unacquainted with the principles of our art. No positive advance was made, however, notwithstanding the valuable fact communicated by the experience of General Claude Martine, who positively accomplished the partial destruction of a stone contained in his own bladder by the assistance of a small file, which he introduced through a catheter, and with which he broke off small fragments from the calculus, which were afterward expelled."

USES OF APOMORPHIA.

BY

W. A. HOWARD, M.D.,
of Waco, Texas.

To the Editor of American Medicine:—In your issue of March 28 Dr. E. R. Shannon speaks of the varied conditions in which he has successfully applied apomorphia. I have used it with success in all the diseases of which he speaks except hiccough and angina pectoris. Various anginas are relieved by its use, but caution is necessary in diagnosis, as in those due to bronchial edema its use is contraindicated. However, there are still a few diseases which have been the *bête noire* of all physicians in which much rest can be given to both patient and physician by the administration of apomorphia. Asthma yields gracefully to its influence, as all those spasmodic cramps so common in those of a rheumatic diathesis, their night's sleep gained. Strychnin poisoning is much alleviated by its prompt action in relaxing the spasms. In all those conditions in which morphia is required to secure rest and sleep, given in 5 mg. ($\frac{1}{2}$ grain) doses, combined with apomorph. 3 mg. ($\frac{1}{2}$ grain) or more, we get far better results than with large doses of the former given alone.

Men's Public Laundry.—In Philadelphia for the past two years the Board of Trustees of the Public Bath Association have found it necessary to exclude men from the Gaskill Street Laundry in order not to lose the patronage of women, since which time the number of women patrons has greatly increased. It is now announced that ground has been secured nearby where a new public bath house and laundry for women will be built, leaving the old institution to be used as a men's public laundry. The cost of the new site and building will be about \$8,000.

ORIGINAL ARTICLES

ON VOLUMETRIC TESTING FOR SUGAR.

BY

JOHN MARSHALL,

Professor of Chemistry and Toxicology, University of Pennsylvania,

AND

LEON A. RYAN, PH.D.,

Assistant Demonstrator of Chemistry, University of Pennsylvania.

The title given above is that of a paper published by F. Waldo Whitney, M.D., in the *New York Medical Journal*, January 25, 1896, page 119. The paper in the form of an alleged copyrighted reprint is being used by a chemical company in New York for the purpose of vending the solution described in the paper, and indeed the original publication in the New York journal has a foot-note appended to the effect that "physicians can procure the reagent accurately compounded as described" from the chemical company. Furthermore, in a circular issued by the chemical company it is stated that the solution is used in certain laboratories, among them being the laboratory of the University of Pennsylvania. This is an erroneous statement so far as the University of Pennsylvania is concerned. The solution has never been used in the laboratory of the University of Pennsylvania.

A physician of our acquaintance, who has for some time past been using the solution, sent us the pamphlet with the request that the formula for the preparation of the solution as given in the paper be so simplified that the solution could be prepared by a person possessing a fair knowledge of chemistry. The indefiniteness in description of the preparation of the solution and the statement that "aque dest. q.s." to make the solution of such strength that 3.696 cc. shall correspond to 0.00526 gram of glucose give reason for the request of the physician. In endeavoring to comply with the request of the inquirer we found that if the solution be prepared according to the published formula of Whitney (and it was so prepared by us), in which all of the constituents, solid and liquid, are taken in parts by weight, the volume of the solution will be 385 cc. even without the addition of "aque dest. q.s." The value in terms of glucose of such a solution will depend upon the quantity of cupric sulfate employed in the preparation of the solution. In order that the quantity of cupric sulfate stated by Whitney (2.5587 grams) shall be in such dilution so that 3.696 cc. of the liquid shall contain an amount of cupric oxide that will be reduced to cuprous oxide by 0.00526 gram of glucose the volume of the liquid should be 259.3 cc., whereas the solution prepared according to Whitney's directions, even without the addition of "aque dest. q.s.," amounts to 385 cc., a volume far exceeding the volume (259.3 cc.) which the solution should be if 3.696 cc. are to correspond to 0.00526 gram of glucose. Whitney explains why 0.00526 gram is taken instead of a single number, as is usual in such solutions to express the value of the 3.696 cc. in terms of glucose, by the statement that it is equivalent to one-thirtieth of a grain. The fraction of a gram named (0.00526), however, is equivalent to approximately one-twelfth of a grain, apothecaries' weight, and not one-thirtieth of a grain.

If the solution were made according to Whitney and "aque dest. q.s." were not added the solution, as said before, would measure 385 cc. If this solution were used in quantitative determinations of glucose the value of each 3.696 cc. expressed in terms of glucose would be 0.00354 gram, a quantity somewhat less than 0.00526 gram, and if "aque dest." were added its value in terms of glucose would be still less than 0.00354 gram.

Even if a solution containing the ingredients pro-

posed by Whitney were made so that each 3.696 cc. should actually correspond to 0.00526 gram of glucose it does not seem to us that it would possess any advantages over ordinary Fehling's solution prepared as shall be described below, provided the solution of cupric sulfate and the solution of sodium potassium tartrate (Rochelle salt) in sodium hydroxid shall, for the purpose of preventing decomposition, be kept in separate bottles.

FEHLING'S SOLUTION ON THE BASIS OF THE PREPARATION OF 1,000 CC.

Well crystallized, non-effloresced, chemically pure cupric sulfate is pulverized and immediately spread on and pressed between sheets of bibulous paper to remove moisture which may have been held mechanically by the crystals employed. Exactly 34.687 grams of the pulverized and dried material are quickly weighed and dissolved in about 400 cc. of distilled water at ordinary temperature, and when complete solution has occurred the liquid is diluted to exactly 500 cc. by the addition of distilled water. This liquid is then thoroughly agitated so that the solution shall become homogeneous in its content of cupric sulfate. It should be placed in a bottle stoppered with a rubber stopper.

Approximately 173 grams of pulverized sodium potassium tartrate (Rochelle salt) are dissolved in about 480 cc. of sodium hydroxid solution of 1.140 specific gravity. When complete solution has taken place the liquid is diluted with distilled water to a volume of 500 cc. This solution should be placed in a bottle stoppered with a rubber stopper.

When equal volumes of the cupric sulfate solution and of the Rochelle salt solution are mixed Fehling's solution is produced and 1 cc. of it will correspond to 0.005 gram glucose.

In employing this solution in making rapid determinations of the quantity of glucose in urine, determinations which are sufficiently accurate for clinical purposes, 5 cc. of the Rochelle salt solution may be added to 5 cc. of the cupric sulfate solution, thus making 10 cc. of Fehling's solution. One cc. of this Fehling's solution should be taken from the vessel and placed in a test-tube and diluted with about 4 cc. of water, and the liquid should be heated to the boiling point. The heated liquid should be held in various positions in reference to the source of light in the room, in order to observe whether any decomposition has occurred in the liquid itself. The production of a reddish-brown precipitate of cuprous oxide which may remain in suspension in the liquid would indicate that such decomposition had occurred. If, under these conditions, a precipitate of cuprous oxide should be produced, the Fehling's solution is unfit for use. However, thus far in our experience we have not found a Fehling's solution prepared from the two solutions kept separately that has shown evidence of decomposition when tested by diluting with water and heating to the boiling point.

The 1 cc. of Fehling's solution which had been diluted with about four volumes of water and heated to the boiling point to ascertain whether decomposition of the solution itself had occurred, is now ready to be used in the determination. To the solution in the test-tube the urine is added from a pipet, a drop at a time (and the number of drops used is noted), and the liquid is heated to about the boiling temperature after the addition of each drop of urine. The addition of the urine, a drop at a time, and heating the liquid after the addition of each drop, is repeated until finally the blue color of the liquid has disappeared. As two drops of urine are approximately equal to one-tenth of a cubic centimeter, therefore the number of drops of urine employed divided by two will furnish a number which, when expressed in tenths, will approximately correspond to the volume in tenths of a cubic centimeter of the urine employed.

The following table expresses the percentage of glucose present in the urine, as indicated by the quantity of the urine in tenths of a cubic centimeter, required to

exactly decolorize 1 cc. of Fehling's solution diluted with 4 cc. of water :

Cc of urine.	Glucose, percent.	Cc. of urine.	Glucose, percent.
0.1.....	5.0	0.4.....	1.25
0.12.....	4.2	0.45.....	1.1
0.14.....	3.5	0.5.....	1.0
0.16.....	3.1	0.6.....	0.83
0.18.....	2.7	0.7.....	0.71
0.2.....	2.5	0.8.....	0.62
0.25.....	2.0	0.9.....	0.55
0.3.....	1.66	1.0.....	0.5
0.35.....	1.4		

Instead of using the table the following rule may be employed :

Divide the whole number 5 by the number of tenths, converted into whole numbers, of urine employed. The result will be the approximate percentage of glucose.

EXAMPLE: If 12 drops of urine had been required for the decolorization of 1 cc. of Fehling's solution, and two drops of urine are approximately equal to one-tenth of a cubic centimeter, then 12 divided by 2 would give a number (6) which expressed in tenths would represent the number of tenths of a cubic centimeter corresponding to the drops of urine employed, namely, 0.6. This expressed as a whole number and used as a divisor of the number 5 would result $5 \div 6 = 0.83\%$ of glucose. According to the table, 0.6 cc. represents a urine containing 0.83% of glucose.

Or, to avoid calculation, the number of drops of urine employed to decolorize the one cubic centimeter of Fehling's solution may be noted and the approximate percentage of glucose directly ascertained by consulting the following table :

Drops.	Glucose, percent.	Drops.	Glucose, percent.
1.....		14.....	0.71
2.....	5.0	15.....	0.66
3.....	3.3	16.....	0.62
4.....	2.5	17.....	0.58
5.....	2	18.....	0.55
6.....	1.66	19.....	0.52
7.....	1.4	20.....	0.5
8.....	1.25	21.....	0.47
9.....	1.10	22.....	0.45
10.....	1	23.....	0.43
11.....	0.9	24.....	0.41
12.....	0.83	25.....	0.4
13.....	0.76		

The international atomic weights (oxygen = 16) were employed in making the calculations for this paper.

A CONTRIBUTION TO THE STUDY OF MANUBRIAL DULNESS, ESPECIALLY AS RELATED TO ENLARGED BRONCHIAL GLANDS.

BY

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Among the many signs of disease of the organs of the mediastinum, percussion affords some of the most important. Normally we expect to find good resonance over the whole sternum; a resonance of possibly slightly higher pitch than that of the adjoining regions, but still scarcely distinguishable from ordinary pulmonary resonance. Occasionally, however, there are exceptions to this rule. Those pertaining to the lower half—the normal enlarged precordia of childhood, for example—do not interest us here. I refer rather to a normal dulness of the manubrium, usually not pronounced, and due, perhaps, to unusual thickness of the bone, or possibly to a rachitic protrusion. Such a dulness is of approximately the same contour as the bone itself; and its chief characteristic as distinguished from pathologic conditions is its symmetric shape. I should always be suspicious of the pathologic significance of any slightly dull area over the upper sternum which, extending but little beyond the

borders of the bone, should show no difference between its right and left boundary.

Pathologic areas of dulness are usually irregular in outline, lying chiefly either to the right or left of the median line. In my experience such areas are oftenest small and not appreciable on superficial examination. The dulness is rarely absolute, sometimes very slight. Large aneurysms or mediastinal growths of sufficient size to give rise to a pronounced area of flatness are certainly exceptional.

The following cases are reported with a view chiefly to the study of the significance of dull areas over the upper sternum. Some of them present also other features of general interest.

CASE I.—J. F. S., aged 43, entered the hospital February 23, 1898. He was an habitual hard drinker for several years, otherwise his history is negative up to two years ago. At this time he had an attack of dropsy with cough and dyspnea, and since then his legs have been edematous much of the time. He was able, however, to work until three weeks ago, when dyspnea again came on and steadily increased.

Physical Examination.—Kyphotic since childhood, hence is much under size, with a very prominent abdomen and projecting sternum. Pulse is 120, small and weak, respirations 30 and difficult. Face and hands are turgescant and cyanotic. There is extensive edema of feet and legs, moderate of the abdomen, very slight of the lungs. The liver extends about one inch



Fig. 1.

Fig. 2.

below the margin of the ribs. Heart is generally enlarged, the precordia extending three inches to the right of the median line, and to the anterior axillary line on the left. A very slight systolic souffle is heard at the apex.

Under rest in bed with at first digitalis and diuretin and afterward strophanthus, a very remarkable improvement was noticed on March 5. Cyanosis had entirely disappeared and edema nearly so. A souffle was no longer heard, and the extension of precordial dulness to the right was now only one and one-half instead of three inches. Respiration was wholly normal. On this day for the first time, though undoubtedly present before, an area of dulness to the left of the sternum was noticed, as shown in the figure.

The degree of dulness was but slight, and over this area respiration was practically normal. With the exception of a slight difference in the strength of the two pulses, which the patient states had been noticeable for years, there were no symptoms which could possibly be attributed to mediastinal pressure or irritation. In short, apart from this slight dulness the case appeared to be a simple one of cardiac dilation and insufficiency, probably mitral in origin. The patient left the hospital about a month later in excellent condition.

CASE II.—A. G., aged 51, a miner, was admitted to the hospital on March 22, 1898. He gave a history of several attacks of rheumatism in the past 30 years. He has had a cough for the past year with expectoration of half a teacupful in 24 hours. There was no hemorrhage. He has lost 12 pounds in weight in the last two months. His strength has diminished and he complains of dyspnea on lying down. For 10 days the feet have been swollen for the first time.

Physical Examination.—The patient is pale, thin, weak, slightly cyanotic, and is confined to his bed. There is moderate dyspnea and marked edema of the legs. Lungs apparently normal except for a slight dulness at both bases behind. The heart shows all the signs of aortic regurgitation: marked enlargement, both to the right and left, precordial throbbing, pulsation of carotids and a double aortic murmur. The pulse is regular but vibratory and markedly Corrigan. The arteries are very atheromatous and in the carotids and femorals a single sound—a systolic souffle—is heard. Over the upper sternum there is unilateral dulness as in Fig. 3.

The patient was in the hospital off and on for about five months. During this time he developed also a pericardial effusion, which subsequently subsided, leaving about the same precordial area as before. When he eventually left the hospital his edema had disappeared and he was up and about in fairly good general condition. At no time was there any tracheal tug,

or pulsus differens, or local pulsation, or other sign of aneurysm. His subsequent history is unknown.

CASE III.—A. D., miner, entered the hospital April 29, 1898. He gives a history of slight cough for about two years with daily expectoration of half an ounce of at times slightly reddish sputum. He has lost about 35 pounds in weight. His chief complaint is of aphonia and difficulty in respiration.

Physical Examination.—The patient is poorly nourished, very slightly cyanotic, not cachectic. He can talk only in a whisper. Marked difficulty of respiration as if there were some laryngeal obstruction. No fever at entrance nor at any time until death.

Examination of the lungs showed slight dulness behind over the left apex and interscapular region with somewhat diminished respiration over this area and over left front. The right lung was markedly emphysematous, extending in the mammillary line as low as the eighth rib. Over both lungs, front and back, there were scattered dryish rales like those of chronic bronchitis with asthma. The cardiac area extended $\frac{1}{2}$ to 1 inch to the left of the left mammillary line and to the left sternal border toward the right. There were no scuffles, but the second pulmonic was much accentuated. Above was found the dull, almost flat, area shown in Fig. 4; perhaps not very sharply defined toward the left, but sufficiently circumscribed. Here respiration was very much diminished and at times slightly bronchial; rales were scarcely more prominent than elsewhere. In the left intraclavicular region was a gland the size of a walnut. Examination of the throat showed paralysis of the left cord, but was otherwise negative. The right radial artery was markedly atheromatous and had a pulse much feebler than, though synchronous with, the left. There was no tug or carotid pulsation, no edema. Sputum examination was negative. Heart's action was feeble—there was certainly no evidence of a hypertrophied left ventricle.

This case suggested strongly mediastinal tumor or possibly aneurysm in several particulars, especially the laryngeal paralysis, pulsus differens, and diminished respiratory murmur on the left. During the three months or so which elapsed before death there occurred no marked change except progressive weakness, and toward the last the development of slight



Fig. 3.

Fig. 4.

Fig. 5.

enlargement of the heart toward the right, together with slight edema of the feet. More moisture also was heard over the upper left lung and the respiratory murmur became still more markedly diminished. The final termination was from pulmonary edema.

The *autopsy* in this case showed a very high degree of pneumoconiosis. The pleuras were adherent and thickened throughout. The upper portions of both lungs were black and showed much fibrous thickening. This was most pronounced at the left apex, and especially corresponding to the dull area near the sternum, where the lung tissue and bronchial glands were converted into a dense black homogeneous tissue, which cut like tough cheese. There were no cavities. The recurrent laryngeal nerve, and in part the trachea, were doubtless enveloped in this mass of hyperplastic tissue. The heart showed considerable dilation of the right chambers and also a dilation of the pulmonary artery which was somewhat short of aneurysmal. The dull area, however, was undoubtedly due to the bronchial adenopathy with surrounding condensation of lung tissue.

CASE IV.—J. E., aged 63, a painter, was admitted to the hospital on January 12, 1902. He gives an indefinite history of cough and expectoration for a long time, 10 years or more, but without loss of flesh, hemorrhage or other signs of pulmonary tuberculosis. About two weeks ago he was attacked with a sudden, sharp pain in the region of the left nipple, and this has persisted ever since, with slight bloody expectoration on the seventh and a little dyspnea. There was no rigor, but some chilly sensations. He was not confined to bed.

Physical Examination.—He is fairly well nourished, and does not give the impression of being very ill. He has constant cough, with abundant mucopurulent expectoration, and slight, irregular fever. Respirations are but slightly increased. Chief complaint is of pain in the left chest, though this apparently disturbs him but little.

Percussion of the precordial area showed a very peculiar condition, as indicated in Fig. 5.

In the first place there was found, above and to the right of the manubrium, a dull area continuous below with the pre-

cordia. The latter showed no increase beyond normal limits toward the right; indeed, it seemed hardly to reach the left sternal border, as if the heart were slightly displaced toward the left. On the left the cardiac area appeared to be very much increased. There was a sharply defined dulness extending two to three inches beyond the mammillary line, and curving upward so as to simulate an enlarged precordia. The apex of the heart was heard loudest in about its normal position. The heart sounds were clear, and but little if at all distant. Examination of the lungs was negative, with the important exception of a very great diminution of the respiratory murmur throughout the left front and back without adventitious sounds or alteration of resonance.

On the day following admission exploratory puncture was made at x, about an inch outside the left nipple, and a clear fluid was obtained. This seemed to confirm the diagnosis which had been made of pericardial effusion. It was thought to be very extraordinary that the latter had not produced the usual increase of dulness to the right; but the right lung was markedly emphysematous, as shown by its extension nearly to the free margin of the ribs in the right mammillary line, and even in the absence of any precedent it was thought, very illogically as must now be admitted, that the emphysematous lung might overlap and conceal the distended pericardium, as it not infrequently does an enlarged heart. It is greatly doubted whether this could ever occur in any such degree as was here presumed.

The other physical signs in the patient were chiefly negative; pulses were synchronous, there was no tracheal tug, no throbbing of carotids, nor any other sign of exaggerated heart action. Nothing was heard over the area of manubrial dulness, except diminished respiration. There was no change in the larynx or pupils. Bacilli were not found in the sputum, which had no odor. The urine was negative and there was no edema.

The diagnosis in this case seemed to be acute pericardial effusion, with chronic bronchitis and probable enlargement of the bronchial glands. The subsequent history until the final catastrophe apparently confirmed this diagnosis. In three weeks the precordial dulness had nearly returned to normal, although in subsiding an irregularity of the outer curve developed, which should, perhaps, have aroused fresh suspicion that the fluid withdrawn had not come from the pericardium. (See dotted line in Fig. 5.)

The prognosis in this case seemed favorable until February 25, about six weeks after admission, when a sudden rigor was followed by a rise of temperature to 104° and by the appearance at about the third rib in the left mammillary line of an area of slightly bronchial respiration and a friction sound synchronous with the heart. There was also great pain over the precordia. The patient soon became unconscious and died in about 24 hours after the rigor.

Autopsy.—Only those facts need be stated which have immediate relation to the questions of diagnosis raised by the clinical picture. The heart was very slightly enlarged, but there was no endocarditis or pericarditis. The remnants of a small encapsulated pleuritic effusion were found just to the left of the precordial area. Both lungs showed a considerable degree of pneumoconiosis with chronic bronchitis and emphysema, particularly of the right lung. Beneath the manubrium, chiefly on the left, was a very large mass of much enlarged, black, dense, and in places slightly cheesy glands, which so enveloped the left bronchus that its lumen close to the trachea had become very much narrowed, so as to admit only the tip of the little finger. These glands, as in the foregoing case, were not sharply defined, but more or less welded together with masses of indurated tissue in the adjacent lung. There were no cavities or bronchiectases. The pleuras were greatly thickened and adherent, and in one place there was a tiny purulent collection between the layers of false membrane. It seems quite probable, indeed almost certain, that a secondary tuberculous invasion had taken place, involving at least the pleura and bronchial glands. It was expected to find an acute pneumonic process in the region where bronchial respiration had recently appeared; nothing definite was found here, but in the presence of old fibroid changes it was difficult to decide whether or not an acute pneumonic infection had begun. However, the patient was a wornout subject, old for his age, and in such individuals slight causes are often sufficient to account for a sudden fatal termination.

This case presents one or two points of interest aside from its relation to the others reported. It must be very seldom indeed that an encapsulated pleuritic effusion develops in just such a way as to simulate the outer precordial curve. Usually when such an effusion dulness is continuous with that of the heart the resulting figure is irregular and bears no resemblance in outline to an enlarged precordia. Here also the manubrial dulness

from bronchial adenopathy added to the confusion, producing the marked increase in the vertical dimension of the precordia which is so characteristic of pericardial effusion. If the pleuritic effusion had pushed the heart to the right the deception would have been almost undiscoverable; as it was the mistake ought not to have been made. Although the subsequent appearance of an apparent pericardial friction seemed to confirm the diagnosis, the autopsy showed this to have been epicardial and really pleuritic.

Although but two of these cases came to autopsy and the significance of the physical signs thus became entirely clear, they are all, perhaps, of some slight value and interest in connection with mediastinal percussion. One's first thought on discovery of manubrial dulness is naturally of aneurysm. This will be the more obtrusive in proportion to the prominence of pressure symptoms, of which unilateral absence of respiratory murmur and adductor paralysis are certainly among the most suggestive. Much the same may be said of malignant mediastinal growths, which will demand earnest consideration in proportion to the evidences of progressive cachexia and involvement of the cervical glands. Aside from the more acute inflammatory processes, such as abscess, pericardial effusion and pneumonia, and the normal peculiarity mentioned at the beginning of the paper, the only other explanation of manubrial or parasternal dulness would be ordinary pulmonary tuberculosis, a simple dilation of one of the great vessels not sufficient to constitute an aneurysm, and the condition of enlarged bronchial glands with possible pneumoconiosis illustrated by Cases III and IV.

Ordinary pulmonary tuberculosis would rarely give rise to doubt. The process is too diffuse. It involves other regions than the manubrial with at least equal intensity, and other characteristic symptoms are usually prominent. I can recall but one case in which the consolidation of tuberculosis assumed such a form as to simulate a mediastinal tumor.

It is a very interesting and important question whether a simply dilated aorta may or often does produce dulness; such an aorta, for example, as is not infrequently associated with atheroma, especially when there is also hypertrophy of the left ventricle. Weil states that it is not at all uncommon to find a very small area of dulness at the sternal end of the second rib on the right as a result of aortic dilation. He also states that dilation of the pulmonary artery may produce a similar dull area on the left, not so often, however, as aneurysm of the transverse or descending aorta. Sansom says that when the aorta is generally dilated in cases of atheroma a dull area may be found over the manubrium with symmetric edges like the longitudinal section of a lemon or pear. This statement is manifestly quite at variance with that of Weil, who finds no manubrial dulness; and the pear shape referred to reminds one forcibly of the shape of the manubrium itself and the normal area of dulness which I have already referred to several times as existing in exceptional cases. If I may judge anything from my own experience, any abnormal area of dulness from a simply dilated aorta must be an exceedingly rare occurrence. Though familiar with the foregoing statement of Weil for 15 years, and on the constant watch for some such evidence of a dilated aorta, I can recall but one case in which I have succeeded in finding it as confirmed by autopsy. Assuredly it is no frequent symptom in cases of atheromatous aorta. I can find no authority for believing, nor is it rational to suppose that any simple dilation of either the aorta or pulmonary artery could possibly cause a prolonged vertical zone of dulness to the left of the median line, like that found for example in Case II. The shape of the dull area in this patient bears a striking resemblance to that of Cases III and IV, in both of which the cause proved to be a bronchial adenopathy.

Enlargement of the bronchial glands with or without

a surrounding induration of the pulmonary tissue would not appear from my own experience to be a very rare cause of sternal or parasternal dulness. Whether it is a mere coincidence that in all of the four cases reported and in others previously seen the dulness was always greatest or chiefly to the left of the median line, is a matter of doubt. There is certainly reason for supposing that a left-sided adenopathy would be earlier perceptible because the left primary bronchus emerges from beneath the aortic arch which covers the corresponding structures upon the right.

The chief diagnostic importance of bronchial adenopathy lies in its differentiation from aneurysm or mediastinal growth. We have seen that pressure symptoms of adenopathy may be very pronounced. In Case III there was recurrent paralysis and tracheal stenosis and in both Cases III and IV compression of the left bronchus. It is easy to see that in the presence of such symptoms diagnosis may at times be very difficult. Undoubtedly chief stress must be laid upon occupation and history. If the patient has been engaged in one of the various occupations which involve the constant inhalation of fine particles of dust, if in addition there is a history of chronic cough and expectoration, and if especially there are found in the lungs physical signs of either local or general bronchitis, a plausible explanation of any manubrial dulness is not far to seek. The assumption of bronchial adenopathy will then be strengthened by the absence of pulsation, tracheal tug, pain, or possibly also of souffles. Or, to put it another way, in the presence of manubrial dulness the entire absence on the one hand of any sign of aneurysm and on the other of any suggestion of malignancy, such as cachexia or enlarged cervical glands, should lead the more quickly to a most careful investigation both of the patient's antecedents and the condition of the lungs, with especial reference to pneumoconiosis, such as areas of slight consolidation or a more or less general bronchitis. A simple suspicion of the truth is perhaps the most important foundation for an eventually assured diagnosis; possibly the condition is often overlooked because it is not thought of as of practical diagnostic importance.

It would appear further that considerable importance should be attached to the site, contour, and definiteness of the dull area. It should be borne in mind that most aneurysms cause a dull area, if any, to the right of the median line—referring, of course, to those early stages which are most difficult to detect; whereas the dulness of adenopathy would appear to be most frequent upon the left. Further, the dulness of aneurysm at an early period is likely to be small, while that of adenopathy, owing to the frequent condensation of surrounding lung tissue, is more apt to be diffuse, extending perhaps up and down the sternum, as in the cases mentioned, and passing a little more gradually into the pulmonary resonance of the corresponding side. Since in many of the cases of pneumoconiosis there develops a secondary tuberculous infection the diagnostic significance of continued fever or bacilli in the sputum is apparent.

Fatal Human Bite.—Dr. Gruning, a young Russian doctor of great promise, has lost his life through being bitten by a little boy whose sufferings from diphtheria he was heroically trying to relieve.

"Expectorate" and "Spit."—In a statement given out recently by Commissioner Lederle of the Board of Health it is set forth that letters have been received objecting to the use of the word "spit" in the Board of Health ordinances, and asking that the word "expectorate" be substituted. In this connection Commissioner Lederle makes public a letter received by the Health Department from Theodore Roosevelt, when the latter was Police Commissioner, asking that the word "spit" be used instead of "expectorate." The letter follows:

POLICE HEADQUARTERS, NEW YORK, March 21, 1896.
The Hon. Charles E. Wilson, President Health Board.

Dear President Wilson:—Can't you have our form of notice changed so as to read "spit," instead of "expectorate?" Expectorate is a vile word and the Health Board ought to use good English.

THEODORE ROOSEVELT.

A STUDY OF WEIGHTS IN PULMONARY TUBERCULOSIS.

Based on the Weight Charts of Twelve Hundred Patients at the Adirondack Cottage Sanitarium.

BY

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of Saranac Lake, N. Y.

Resident Physician Adirondack Cottage Sanitarium.

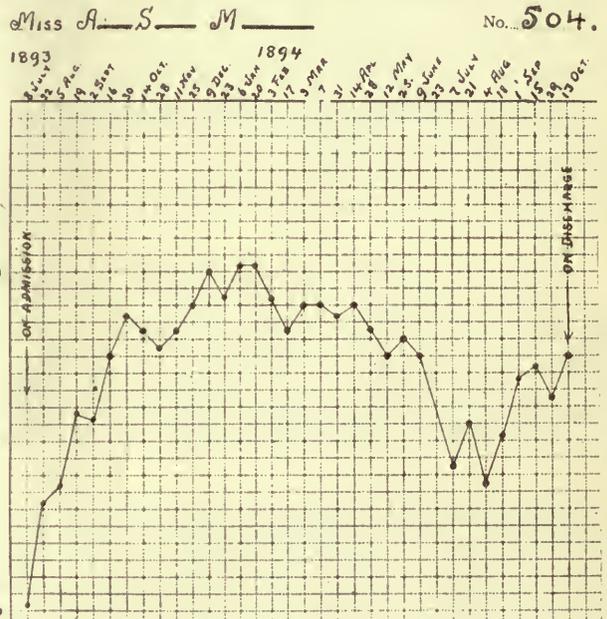
Probably in no widely spread disease is wasting of the body more a feature than in pulmonary tuberculosis. So striking is the loss of flesh that for ages the term phthisis or consumption has been applied almost exclusively to this disease. The treatment of pulmonary tuberculosis by specific drugs or sera has not yet yielded the results which had been hoped for. That treatment, therefore, which enables the patient most quickly to regain his lost weight and to raise his lowered vitality should be followed. This is best accomplished by the so-called hygienic-dietetic treatment. The results of this treatment, founded by Brehmer and first introduced into this country by Trudeau, have been much discussed from many points of view. It is a striking fact, however, that while so much importance has been attached to the gain or loss of weight by the consumptive the subject has received comparatively slight attention. The report of a sanatorium is never complete without a statement of the gain or loss in weight of the patients, but the figures are rarely analyzed except in a few sanatoriums where they afford a basis for discharging patients who have gained a few pounds in weight as "improved."

The cause of loss in weight in pulmonary tuberculosis has been much discussed. The wasting affects all the organs of the body¹ but the liver, which often undergoes a fatty change. The fact that the digestive organs are often early affected is suggestive of toxin absorption. Cornet² attributes this to absorption of protein from the tuberculous area. Loss of weight is not dependent on the fever, he holds, but both are due to the absorption of certain toxins. This is in all probability the cause of the loss of appetite and lessened assimilation, of the vomiting, and of other gastric disturbances. The ratio of the surface of the body to its bulk is rapidly increased when weight is lost and consequently the skin is of more service to the lungs in aiding excretion and so helps to prolong life. Patients may have an enormous appetite and gain but little, a fact too frequently seen. Others, however, may eat a small amount and gain. Patients who are so fond of meat that they eat little else are less likely to gain as much as good general eaters. It seems, therefore, that it is not the amount taken in but the amount assimilated that is of value to the animal economy. Milk and eggs, with codliver-oil carefully administered during the winter season, have great influence on the bodily weight of consumptives. The weight thus acquired, however, is often quickly lost. The explanation of this observation rests less upon the hypothesis of Dr. Dobell,³ "the stability of the fats of the animal body in resisting too rapid oxidation is dependent upon the degree of solidity which they possess at the temperature of the living animal at any given time," than upon the fact that such observations are usually made in advanced cases when the patients have lost much weight and would quickly lose any weight gained, even if the ingestion of "material capable of supplying the adipose tissue with solid fat" was the cause of the temporary gain.

Fever and loss of weight go hand in hand. Many patients who have had high fever gain in weight when the fever decreases, although a continuously elevated temperature may still be present. Antipyretics when they decrease afternoon fever and enable the patient to eat are of value. Patients with fever need an amount of food greater than normal to maintain their weight and they frequently digest well enormous amounts of food

when kept out-of-doors. It is surprising what foods many can digest and assimilate while having elevated temperatures. Patients with an evening rise of temperature should take the greater part of their nourishment earlier in the day.

Rest at first and systematic exercise later enable patients to gain most weight. If the patient is doing well little exercise should be taken until the weight approaches normal. Exercise often enables a patient to gain who has ceased to gain while at rest, and weight gained while exercising is more enduring than that gained at rest. Exercise should not fatigue, and the patient should not get out of breath nor get overheated. It should be so timed that a half hour's rest can be taken before and after meals. The best results in regard to weight are obtained when the patient, after a sufficient period of rest, begins with a five-minutes' walk in the morning and gradually increases his exercise. It should be regulated by the time of actual exercising. Afternoon walks should be half as long as those of the morning. Exercise, however, should always be taken in the open air. Forced muscular activity affects the body weight more seriously than in health, but moderate



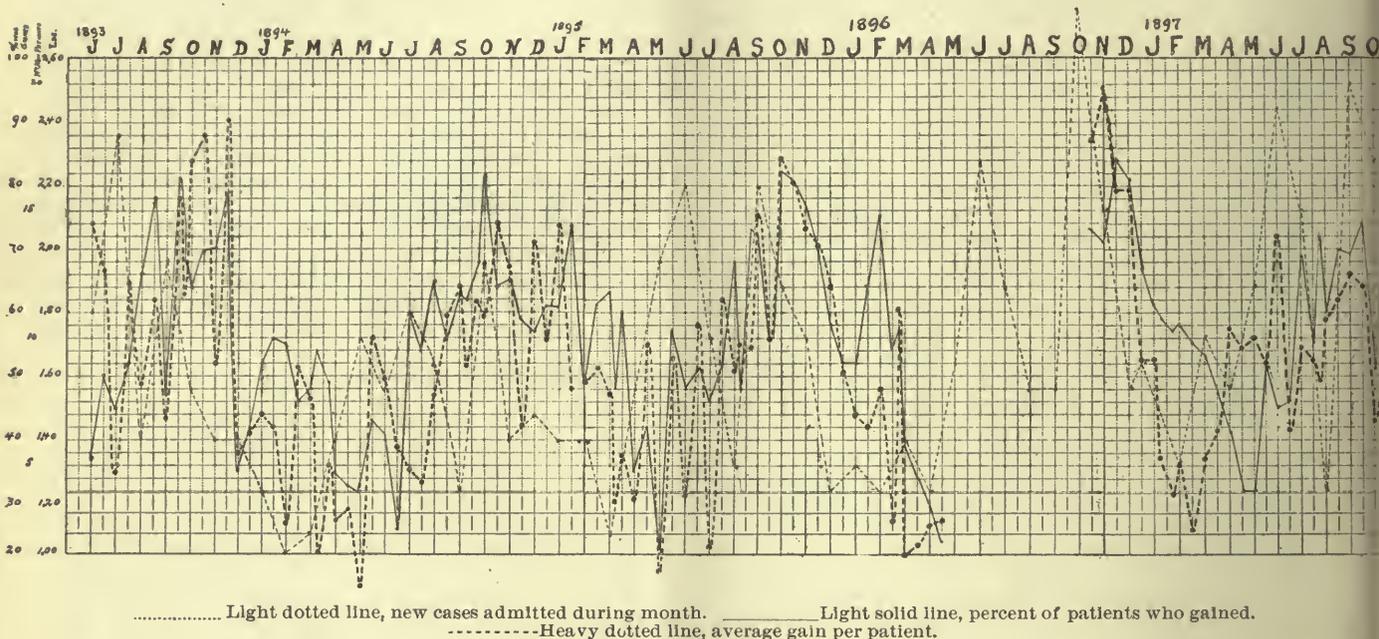
A typical weight-chart.

physical and mental exercise in quiescent cases has no harmful influence on the bodyweight. Change of climate is often a great stimulus to gain in weight, and change from one place to another in the same climate is very beneficial. This may be so even when patients leave conditions almost ideal for those far less perfect. Those who come from poor hygienic conditions do well and gain much in the same climate if under good hygienic and dietetic treatment. These patients may even gain weight while the disease advances. Patients who have always lived in good hygienic surroundings and had good food require more often a change of climate to stimulate assimilation. Elevation seems to have little effect upon gain in weight, and, in fact, may cause a slight loss at first. Meissen, at Hohenhonnef (altitude 735 feet), publishes that his patients gain an average of about one pound per week, while under Turban, at Davos (altitude 5,115 feet), the patients gain only one-third of a pound per week. Meissen, however, uses suralimentation.

The country influences the weight more advantageously than the city. Jacoud believed that patients living in the country are much less liable to digestive disturbances than those living in the city. Residence

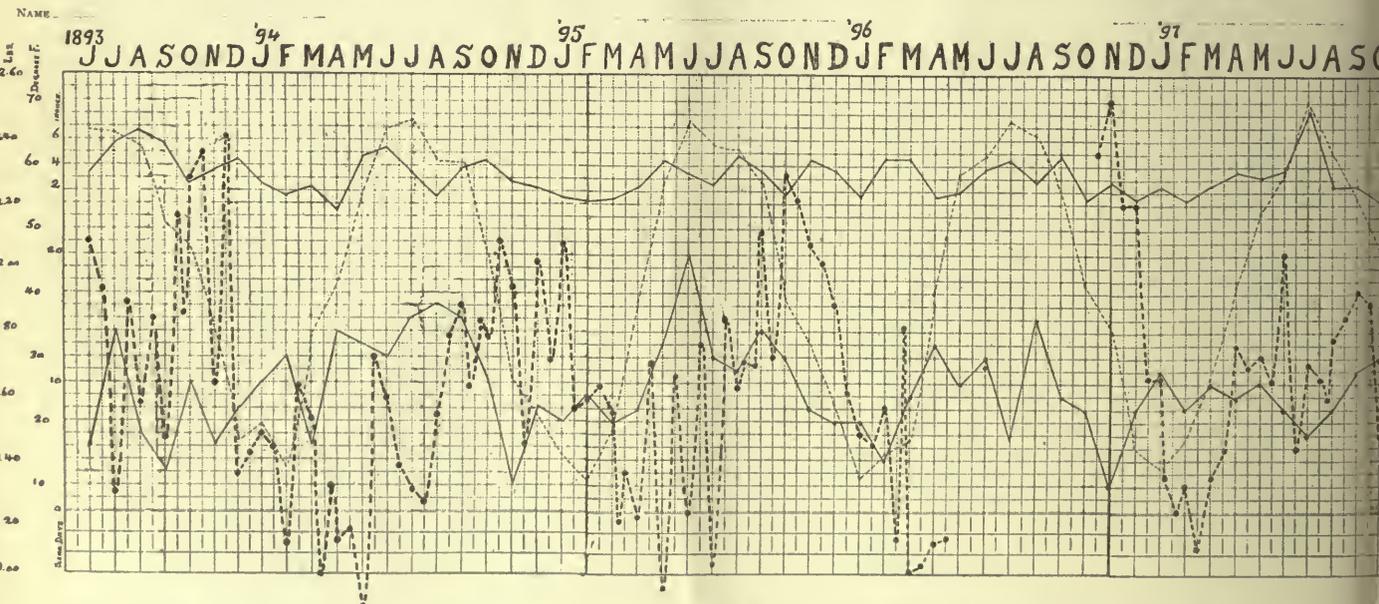
among one's friends in the city for 10 days often does good; after that time patients may lose weight. Pleasant surroundings have a marked effect on the weight, and homesickness frequently prevents gain in weight at first. Congenial associates at the table are of great importance, and in sanatoriums those who have occupied the same walks in life should, so far as possible, be placed together in the dining hall. A patient who

hearts of those patients who do not follow this rule suffer. The functions of the skin are interfered with; colds may be caught easily and so the weakened lungs injured. The diet in these cases should be limited very gradually and the muscular work increased. Two pounds per month is a loss rapid enough. Such patients gain rapidly in weight without any perceptible improvement of the local signs. Death may supervene



has had table manners may keep a number of refined women from gaining in weight, by taking away all appetite. For this reason in all sanatoriums drawing their patients from all classes, small tables seating 6 to 10 patients are much preferable to those seating more.

when they have made considerable gain in weight.⁴ Chlorotic patients are generally stout. They may lose weight as the general pulmonary condition improves, but unfortunately the weight may continue to decrease and the patient grow worse. The gain in weight is first

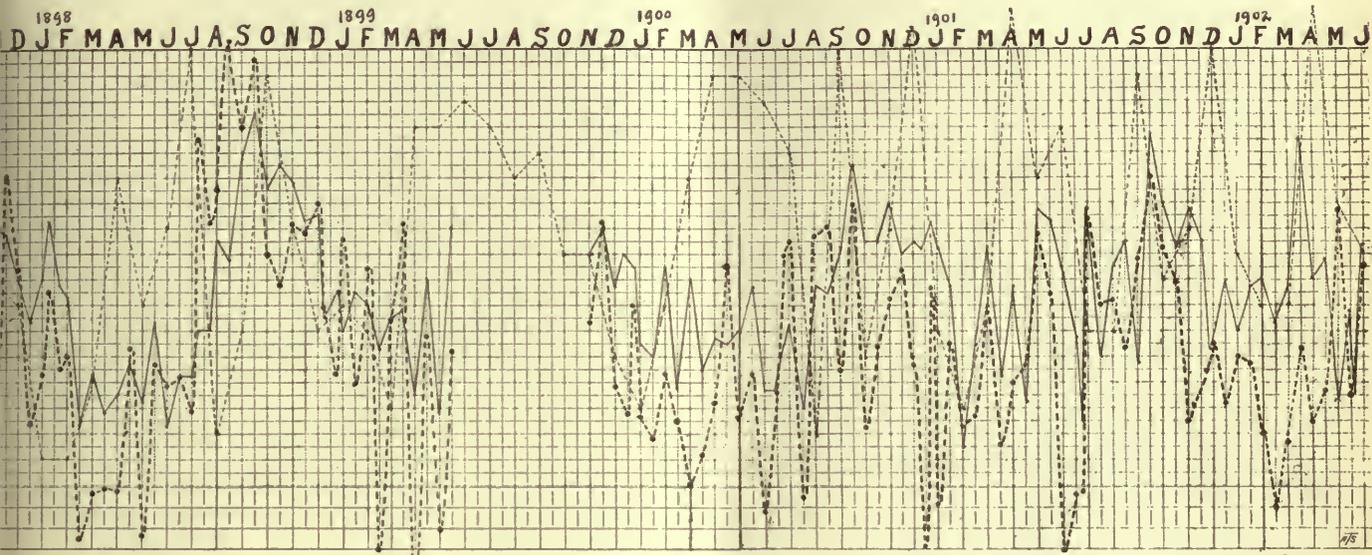


While increase of weight is a desideratum for most consumptives at first, later it may become a source of danger. "To eat and drink well kills the bacilli," "You must eat once for yourself and once for the bacilli," are phrases often quoted in sanatoriums for the tuberculous. Every patient has a limit in weight which should not be passed, and when this limit is reached the patient should be made to exercise systematically. The

evident in the chest which in many patients shows marked emaciation. The abdomen is probably the part next affected, especially in males. The hips in women are frequently much enlarged as well as the arms. A few patients gain more on the legs but this seems exceptional and occurs most frequently in women. The face is often the best index of gain or loss in weight, while a general gain is perhaps the most common occurrence.

Loss of weight is often one of the earliest symptoms of pulmonary tuberculosis. The gastric onset is so widely recognized it needs only be mentioned. The loss may be so insidious as to attract little attention, or on the other hand may be very rapid and even reach from one-third to two-fifths of the earlier weight if the patient is not carried off by complications. During the later stages of the disease when diarrhea sets in, patients,

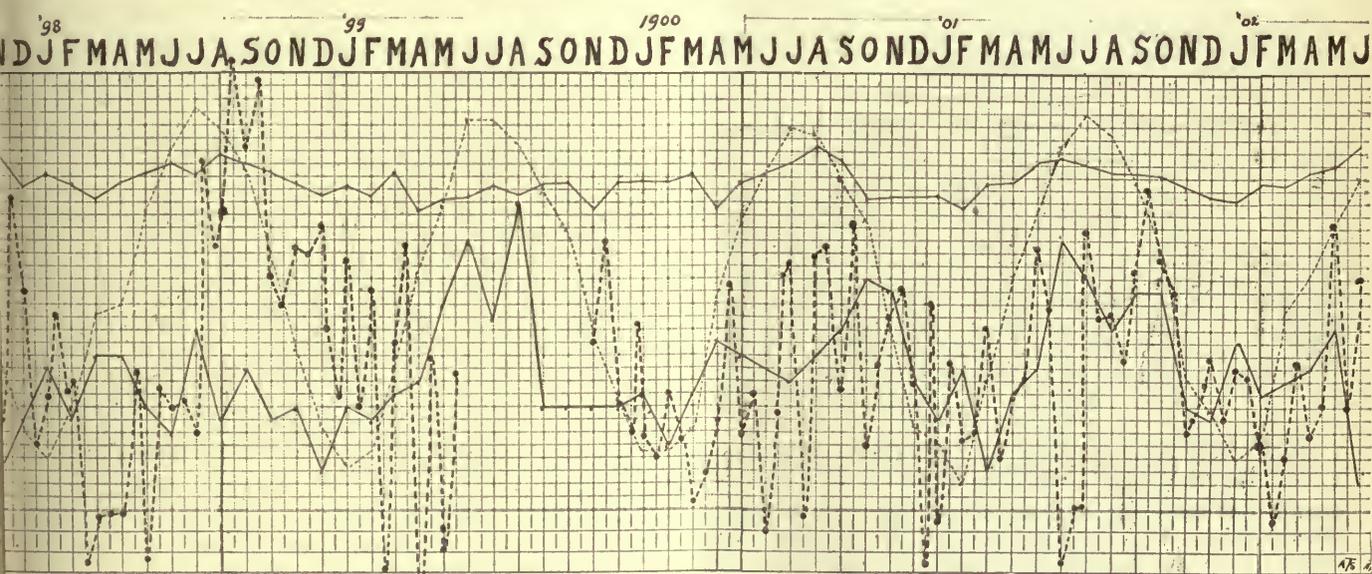
places more dependence upon the weight chart uninfluenced by suralimentation for estimation of the progress of the disease than upon a temperature chart disturbed by antipyretics. A regular constant uninterrupted gain of weight continued for two months is of favorable prognostic value, but the gain of a few pounds is not a sure guarantee of improvement. In nine out of ten cases the general state is ameliorated first and the



[Continued from page 654.]

as a rule, lose weight rapidly. If a patient loses one-fourth of his normal theoretical weight his nutrition is apt to be unsettled, while if one-third is lost his chances of recovery are very slight. A quick, constant, continuous loss of weight indicates as surely as any other phenomenon that a patient is rapidly losing ground. The fact that patients with extensive edema may be up and about should be kept in mind, as this may mask

pulmonary condition later. It is rare for patients who have lost weight to improve without gaining weight. In order to determine whether the amount gained has any bearing upon the prognosis all the patients who have gained 20 pounds or more have been tabulated. (See Tables 1, 2, 3.) Of the patients who gained 20 pounds or more there were 164; 96, or 58%, men and 68, or 42%, women. The highest gains recorded were 50



[Continued from page 654.]

loss in weight. One patient of this class was known to vary 10 to 12 pounds in weight per week. "It is more important to know the conditions under which a patient gains in weight than to know the amount of weight gained." Increase in weight is, as a rule, a very favorable symptom. Some hold indeed that without a gain in weight even if the stethoscopic signs are ameliorated, the patient cannot be considered improved. Wolff⁵

pounds, in 3 men (1 of whom is well, 1 dead, 1 untraced), and 49 in a woman with a cavity (now at home and well). Of these patients 130, or 78%, spent at least one winter in the Adirondacks. That patients do not retain all the weight gained is seen from the fact that only 64, or 38%, were at their highest weight when discharged from the Sanitarium. Of this number 19, or 35%, were men. Of the 60 patients discharged as appar-

ently cured 46, or 77%, have been traced and of these 40, or 87%, are alive and able to work at present. It should be noted that of the patients "apparently cured" 38, or 63%, were in an incipient stage; 22, or 37%, in an advanced stage. Of the 84 patients discharged "arrested" 70, or 83%, have been traced; 40, or 56%, of these are alive and able to work, 15, or 21%, alive but unable to work. Of those discharged "improved" numbering 20, 15, or 75%, have been traced. Of these 3, or 15%, are alive and able to work; 8, or 53%, alive but unable to work.

On comparing these figures with the results from 1,000 consecutive patients (Table 4) who were discharged from two to eight years ago it was seen that a larger

Condition	Apparently cured.		Disease arrested.		Improved.	
	Number.	Average gain.	Number.	Average highest gain.	Number.	Average highest gain.
Incipient.....	53	26	39	26.4	14	25.1
Advanced.....	96	22.8	22	27.9	60	20.5
Far advanced...	15	23.6	.....	.....	9	22
	164	21.6	61	26.9	83	21.5
					20	25

TABLE 1.—Showing condition on admission and discharge, together with the average weights of 164 patients, each of whom gained twenty pounds or more.

Condition in 1902.	Incipients.		Advanced.		Far adv'cd.	
	Number.	Average gain.	Number.	Average gain in weight.	Number.	Average gain in weight.
Perfect cures.....	65	26.3	27	24	37	27.7
Arrested.....	18	27.2	6	24.3	11	29
Chronic.....	16	25.2	2	29.5	13	24.1
Relapsed.....	10	26.4	3	31	6	24.8
Dead.....	22	28.5	1	21	14	30.3
Untraced.....	33	.....	14	.....	15	.....
	164	21.6	53	25.1	96	27.5
					15	25.4

TABLE 2.—Showing condition on admission and in 1902, together with the average weights of 164 patients, each of whom gained twenty pounds or more. Untraced cases not included.

Condition in 1902.	Apparently cured.		Disease arrested.		Improved.	
	Number.	Average gain.	Number.	Average gain in weight.	Number.	Average gain in weight.
Perfect cures.....	65	26.3	37	26.5	28	26.1
Arrested.....	18	27.2	4	23.5	11	29.8
Chronic.....	16	25.2	.....	.....	10	25.8
Relapsed.....	10	26.4	3	31	5	25.4
Dead.....	22	28.5	3	26.3	15	29.8
Untraced.....	33	.....	14	.....	14	.....
	164	21.6	61	26.6	83	27.3
					20	23.9

TABLE 3.—Showing condition on discharge and in 1902, together with the average weights of 164 patients, each of whom gained twenty pounds or more. Untraced cases not included.

number of incipient and advanced cases are included among those who have gained over 20 pounds. The results may best be seen from Table 4. The figures in this table are all given in percentages and it is seen that a greater proportion of patients with incipient and advanced cases are discharged apparently cured among those who have gained over 20 pounds than among the whole number of patients. The same is true of those discharged with their disease arrested, but there is not such a striking difference in the figures. In advanced cases the disease is arrested in a far greater number of cases among those who have gained at least 20 pounds. The table shows

also the condition in 1902 of 1,000 patients (Class I) who were discharged from two to eight years ago in comparison with 164 (Class II) who were discharged from June, 1893, practically up to June, 1902. This fact should, of course, account somewhat for the relatively better showing of the patients who have gained over 20 pounds. Of the 1,000 patients it is seen that nearly 27% remained well for a period of from two to eight years after discharge, while of the 164 patients over 39% are still well. Of the 1,000, 33% are able to work, while of the other class over 50% are able to work. These figures include, of course, all of the cases. If the patients who have not been traced are deducted, the percentages will be much higher, i. e., 63% of the "164 patients" are able to work, and 44% of the "one thousand."

But while patients who gain over 20 pounds do better as a rule, a large gain in weight does not assure one of cure. The 22 patients who have died gained over 28 pounds on an average, two pounds more than those classed as cured. The explanation of this lies in all probability in the fact that many who have lost greatly regained flesh for a time and then relapsed and died. Nor does the average gain of the patients correspond to the condition of the lungs as those in whom the disease was far advanced gained on an average more than those

	Totals.		Appar'ntly cured.		Disease arrested.		Improved.	
	I.	II.	I.	II.	I.	II.	I.	II.
<i>Condition on admission:</i>								
Incipient.....	26.3	32	65	72	27	28	6	.....
Advanced.....	53.8	58.5	13	23	51	63	23	14
Far advanced.....	19.6	9.5	.....	.....	16	60	38	40
<i>Condition in 1902:</i>								
Perfectly cured.....	26.9	39.6	60	60	26.3	34.5	7.9	.....
Arrested.....	6	10.9	1.2	6.7	12.4	13	4.4	15
Chronic.....	5.3	9.8	1.2	.....	6.3	11.9	10.5	30
Relapsed.....	3.9	6.2	5.7	5	5	5.9	2.1	10
Dead.....	31.2	13.4	5.7	5	25.9	18.1	44.3	20
Untraced.....	26.7	10.1	25.7	23.3	24	16.6	30.7	15

TABLE 4.—Showing comparison in percentages of 1,000 cases (I) with 164 cases (II), in each of which there was a gain of twenty or more pounds, as regards condition on admission and discharge and condition in 1902 and on discharge.

Year.	Residence under three months.				Residence over three months.				Not weighed. Stationary or dead.	
	Number.	Gain.	Number.	Loss.	Number.	Gain.	Number.	Loss.	S. T.	L. T.
Nov., 1893...	12	4.3	10	2.5	36	10.1	21	6.1	7	2
1894...	5	4	4	3	45	9	11	8.5	4	4
1895...	13	6	9	2.2	61	10.7	26	5.8	2	4
1896...	10	10.5	1	5.2	74	12.2	12	5.8	6	3
1897...	27	5.2	7	2	76	10	15	5.7	10	1
1898...	20	5.9	3	3.1	89	11.5	13	5.2	2	13
1899...	25	9.1	6	2.6	110	14.5	9	2.7	14	1
1900...	28	7.5	5	3	124	13	9	3	2	3
1901...	28	10.6	1	7.5	134	13.6	5	2.7	2	3
1902...	22	11.3	.....	.....	143	15.9	13	6.4	1	2
	190	7.9	46	2.7	892	12.8	134	5.9	50	36

TABLE 5.—Showing the average gain and loss in weight per year of all patients discharged since 1892.

in whom it was advanced. The same holds true when the condition of the patients in 1902 is taken into consideration. The patients classified as "chronic" are the only ones who gained less than those who were well.

In Table 5 is shown the average gain and loss in weight in pounds of all the patients from November, 1892, to November, 1902. The patients have been divided into two classes, according to the length of their residence in the institution. The first class remained three months or less, the second class over three months and averaged during the last three or four years less than eight months. The patients who remained under three months number 170 and gained 7.3 pounds on an aver-

age. The other class, numbering 849, gained on an average 10.8 pounds. Both classes (1,019) gained an average of 10.2 pounds; 180 patients lost weight averaging four pounds; 86 patients remained stationary or were not weighed.

Warmth and sunshine are not necessary factors for gain in weight; in fact many patients do better in winter. Such is the experience of Gabrilowitch.⁶ Cold weather, he believes, stimulates the patient much more than warm. Some patients, however, have an antipathy to cold and these are frequently found to gain more in a warm, equable climate. Great dryness is not always conducive to gain in weight. Gabrilowitch has shown that patients gain even when there is little sunshine. At Halila the possible amount of sunshine is three times greater during the summer than during the winter and there are many more clear days during this season, yet the patients gain more during the winter and do better at this time. The average gain in weight per patient every two weeks at the Adirondack Cottage Sanitarium expressed in pounds has been charted to show its relation to the number of new cases admitted during each month and to the percentage of patients who gained weight (Chart 1). It will be noted that the percentage of the patients who gain rises or falls directly as the amount gained expressed in pounds rises or falls. For this reason in Chart II the percentage of the patients who gained has been neglected. It should not be overlooked that only the gain in weight has been charted and that when the line indicating the average gain in weight falls it does not mean that there has been a loss in weight. The loss in weight has not been tabulated, but on going over the figures it happens that when fewest patients gain, *i. e.*, when most patients lose, the average loss is greatest. To determine whether the time of the year in which patients were admitted has much bearing upon the amount gained, the average weights on admission of 100 patients admitted in January and of 100 admitted in July were calculated. The difference was about five pounds more in those admitted in January, an increase readily accounted for by the greater amount of clothing worn during the winter. The number of patients admitted does not seem to influence the amount of weight gained.

In Chart II the average gain per patient every two weeks expressed in pounds has been compared with the monthly precipitation, the number of clear days per month and the mean monthly temperature. A study of the charts will show that more patients gain and that that gain is larger from August to January. This is the period when the temperature begins to fall, but it also includes the greatest number of cloudy days. The precipitation departs slightly from the average during this period. Patients who have held their own or lost slightly during the early summer often begin to gain in August. This period of gaining extends to Christmas, when often the patient has surpassed his normal weight. During January, February and March the weight fluctuates and gradually begins to lessen. It is at this time that a radical change in the life of the patient, a change of environment and later of climate for a few months proves of great benefit. From 1899 to 1902, owing to the large number of patients who have applied for admission to the Sanitarium, there has been a long waiting list and patients have remained in the village at times for several months. This of course would influence the charts, as no record was kept of their weights before admission. During part of 1896 and 1899 records of patients' weights were not obtainable.

It is of interest to note that Malling-Hansen from his study of children concludes that most weight is gained from August to the end of November or the middle of December. From this time to March or April the gain is less, while from March or April to August there is a loss in weight. Hartmann⁷ who quotes Malling-Hansen's conclusions, concludes from a study of 48 anemic

children that such children gain more in summer than in winter, irrespective of good or bad weather.

	Average loss in w'ght on admission.	Average highest gain in pounds.	Time required in months.	Condition in 1902.		
				Well.	Dead.	Chronic.
Men	12.5	12.4	4.9	3	7	.....
Women..	10.2	13.5	5.1	5	4	1

TABLE 6.—On comparing ten men and ten women, chosen at random from the same class of patients (three incipient and seven advanced) at the Sanitarium during the year 1897, it is found that the women lost less weight than the men, and gained more in a slightly longer period.

In tabulating I have used Dr. Trudeau's classification, which is substantially as follows:

Incipient Stage.—Slight local, with little or no constitutional involvement.

Advanced Stage.—The localized disease—process extensive or in an advanced stage; or slight local pulmonic invasion with rather marked constitutional involvement or with complications.

Far Advanced Stage.—Marked signs of pulmonic disintegration with marked constitutional symptoms.

Improved Condition.—Physical signs showing process less active, or general health improved with symptoms relieved or abated.

Arrested.—No activity in process in lungs, with absence of fever and other constitutional symptoms.

Apparently Cured.—Abnormal physical signs absent or if present only slight and indicative of healed lesion. Absence for some months of pyrexia and of sputum or of sputum containing tubercle bacilli.

Perfectly Cured.—Abnormal physical signs absent or if present only slight and indicative of healed lesion. Absence for two or more years of pyrexia or of sputum or sputum containing tubercle bacilli.

CONCLUSIONS.

1. Toxin absorption in the tuberculous area causes reduced assimilation and fever. Loss of weight is in all probability due to this.
2. It is not the amount eaten but the amount assimilated that is of value to the consumptive.
3. Carefully regulated rest and exercise are of most importance as regards the bodily weight in pulmonary tuberculosis. Forced muscular activity is always injurious.
4. Assimilation is often markedly increased by change of residence or of climate.
5. Excessive gain in weight may be injurious.
6. The gain in weight is usually first evident on the chest, next upon the abdomen in men and on the hips in women.
7. A quick, constant and continuous loss of weight indicates as surely as any other phenomenon that a patient is rapidly losing ground.
8. A gain of a few pounds is of little value in prognosis, but if the gain is constant and continuous over a period of two months, the patient is probably improving.
9. The weight gained affords no sure data for prognosis, but on the whole patients who gain over 20 pounds do better than those who gain less.
10. Sunshine and dryness are not necessary factors of gain in weight. Cold weather stimulates assimilation and gain in weight more than warm.

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⁴ A. Cosset: Considerations sur les Poids des Tuberculeux Curable, Paris, 1901. Quotes Meissen, Turban, and Wolf
⁵ S. Jaccoud: Phthisie Pulmonaire, Paris, 1881, p. 250.
⁶ Gabrilowitch: Zeit. f. Tub. u. Hell, Vol. III, p. 203.
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Influenza in Chicago.—The Bulletin of the Health Department of Chicago for the week ended April 4 states that influenza has been more prevalent during the first four months of 1903 than at any time since 1891, and of the 350 deaths last month in excess of the number for March, 1902, 330 are shown by the physicians' certificates to be due, not to influenza direct, but to influenza as a fatally complicating cause of death from pneumonia, tuberculosis, Bright's disease, heart disease, bronchitis, measles, and whoopingcough, in about this order of frequency.

WOUNDS OF THE THORAX.¹

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Operations involving the resection of ribs and the opening of the thoracic cavity for various troubles date back to the time of Hippocrates, 400 B.C. What we practise today is nothing new, but we have advanced step by step, each operator aiding by his experience those who come after him. During the last 25 years considerable has been done owing to the improved technic and to our increased knowledge of surgical pathology.

Whether we shall open up every wounded chest or whether we shall let them all go on the expectant plan is a question which has the weight of authoritative precedent on both sides. The truth lies perhaps in the middle ground as in so many other questions. Each case must be judged by itself. The nature of the case, the surroundings and the skill and technic of the operator must all be taken into consideration. Each patient should get our best judgment. A careful study of the anatomy of the chest and its contents is essential before doing any operative work upon it. Besides this the experience of other surgeons should be considered and their cases gone over.

An article in the *Annals of Surgery* of May, 1902, by Dr. W. G. LeBoutillier gives a good history of thoracic injuries involving the lungs and also the result of these injuries in his cases. The article by Dr. J. B. Murphy, of Chicago, read at the American Medical Association, 1898, "On Surgery of the Lungs," is by far the most complete that I have been able to find. Dr. H. B. Loomis, of New York, quoting an article in the *Medical Record*, of September 29, 1900, speaks of the introduction of nitrogen gas into the pleura to check hemorrhage and, by pressure, to prevent motion of the lungs and assist the healing of the tuberculous foci. This idea was advanced by Dr. Murphy in 1898. He found that when air was let into the pleural cavity it was absorbed in from a few hours to a few days. First, oxygen is absorbed most readily, second, carbon dioxide, and third, nitrogen gas, is absorbed very slowly, in fact nitrogen gas will remain in the pleural cavity and be unabsorbed from a few weeks to several months. So in diseases of the lung, Dr. Murphy used the latter gas to produce constant pressure and keep the lung collapsed and in that way to assist the cure. It has been found that after 12 or 18 months' pressure from gas the lungs are able to resume their function. Dr. Murphy says that to depend upon the introduction of gas into the pleural cavity, and trusting by that pressure to stop bleeding from an injured lung, has not been followed by good results. As in the case mentioned by Dr. Loomis, if the bleeding is from within the lung itself, one can see that the pressure and collapse of the lung by the gas would accomplish our object of checking hemorrhage, but in my opinion it is not good surgery to fill the cavity with the gas in hopes of checking hemorrhage when we do not know from what point it comes. Our duty in chest injury is to remove the foreign body, if there be one, cleanse the part, cutting off all lacerated tissues, and put the parts at rest so they will be better able to resist infection, and when infection does occur give free drainage and watch for all other complications that may arise.

Contusions of the chest or simple break of a rib without any complications are treated by putting the parts at rest. In contusions of the chest the only symptom of injury may be hemoptysis which may come on at once or be delayed several days, and may be due to injury of the lung or to some tuberculous foci in the lung.

In chest injuries we look for pneumothorax, hemoptysis and emphysema, "the lungs may be injured without any of these symptoms, and yet having any one of these alone we can not say positively that the lung has been injured."

In the article of Dr. W. G. LeBoutillier, he mentions a case of rupture of the lung without fracture of the rib. It was in a boy who had been run over by a wagon, the wheels passing across his chest. When he was first seen he was in profound shock, having dyspnea, weak pulse, and increased respiration. The dyspnea was relieved by aspirating the right chest and evacuating the air. The boy lingered for some time, and on autopsy the only lesions were two small ruptures of the lower lobe of the right lung.

Penetrating wounds of the thorax may injure the intercostal arteries, heart, or large vessels, lung or diaphragm and may also extend into the abdominal cavity and injure its contents. Dr. Matas, of New Orleans, in the Transactions of the Louisiana State Medical Society, gives 245 reports on cases of injury to the chest, the majority of them being penetrating wounds. He states that hemorrhages are fatal that occur from the heart, aorta, large vessels, veins and arteries and the hilus of the lung, vena cava and vena azygos.

Emphysema is not always present, and may be due to the escape of air from the injured lung into the tissues, or may come from air entering the lacerated tissue and not from the lung. An alveolus of the lung may be ruptured and the rupture not extend through the visceral layer of the pleura. The air escaping into the connective tissue of the lung will travel to the hilus and then by the way of the mediastinum and be found at the root of the neck or around the lower end of the sternum. In extreme cases of emphysema it may be found necessary to incise the skin to allow the escape of air from the tissue. Emphysema is generally due to a fractured rib puncturing the lung.

Pneumothorax.—In lesions of the chest walls, air enters the cavity during respiration, but air from a ruptured bronchus enters the cavity during expiration. In the latter case air entering the cavity may not get out and a plus pressure is exerted and death may follow from pressure or rupture into the mediastinum. This has occurred from a very small lesion of the lung in which air has escaped some time into the pleura or a small external opening into the pleura. Pneumothorax may be due to escape of air from the lung, bronchus or through the external wound into the thoracic cavity. The symptoms will be partial or complete collapse of the lung. Should the wound be a large one, five or six respirations will be sufficient to produce a collapsed lung, but should the wound be small and remain open some time, it may also produce collapse of the lung. The symptoms are the bulging of the intercostal spaces on the affected side, displacement of the heart, mediastinum and diaphragm and a corresponding displacement of the abdominal contents. Absence of respiratory murmur, a tympanitic note on percussion, and distant bronchial breathing are also present. The breathing and heart's action will be correspondingly difficult in proportion to the amount of pressure in the pleural cavity. The cavity can be aspirated or the contents of the cavity turned out through the external opening. If the intrathoracic pressure continues and becomes greater, it is an indication that there is an opening of a valvular nature. This is an indication to aspirate or to turn out the air and blood clots from the pleura by an operation. The air in the pleura cavity compresses the lung, and in that way puts the parts at rest and assists in the healing of the ruptured air vesicles or bloodvessels.

In wounds of the thorax we cleanse the openings of entrance and exit, if there be any, and should the symptoms be urgent we operate and put the parts at rest, by this means assisting the healing process. If there is fluid in the pleural cavity, we should aspirate and if we

¹ Read at the Convention of Railway Surgeons, Atlantic City, N. J., June 28, 1902.

find pus we must resect a rib and give free drainage. Do not at the first opening of the chest irrigate the pleural cavity. A simple opening through the intercostal muscle may suffice to empty the cavity, but it will be found better to resect one or two ribs, about the eighth and ninth ribs, at the posterior angle of the scapular, giving an opening two or three inches long, which will be sufficient for drainage. Should the pneumothorax increase to such an extent as to rupture the mediastinum death will occur from collapse of both lungs.

Hemothorax.—This may be due to a lacerated lung or some thoracic vessel at the root of the lung or from injury to the heart which bleeds through the pericardium into the pleural cavity. The bleeding may also be from the internal mammary vessel or intercostal vessels. Should the bleeding take place slowly the entire thoracic cavity may be filled with fluid, the heart be pushed out of position, bulging of the intercostal spaces, depression of the diaphragm and a corresponding displacement of the abdominal contents be noted. There will be loss of vesicular murmur on that side, and there will be a flatness on percussion and loss of vocal fremitus. The patient lies on the affected side. Should the bleeding be from an intercostal artery, enlarge the opening, resect a rib if necessary and tie both ends of the artery. Never attempt to check the bleeding of an artery by plugging the wound. This means of checking hemorrhage may succeed at times, but it is a dangerous expedient, for through the slipping of the plug the patient may be lost. Should the bleeding be from the interval mammary some blood may be found external to the pleura and also in the mediastinum. In bleeding from this artery we must cut down on the bleeding point, resecting a rib or two if necessary, and a part of the sternum if that is required to expose fully the vessels. Both ends of the bleeding vessel should be tied. Should the hemorrhage of the lungs be excessive and a fatal termination feared, it is best to make a free opening in the chest, grasp the lung and bring it into the wound, examine each lobe and when the bleeding point has been found sew it up with interrupted absorbable material and replace the lung into the pleural cavity. If the lung is much lacerated we can tie off a part of a lobe or entire lobe, or even more if that be necessary, and then replace the remaining portion of the lung into the cavity. Should the pericardium be injured, enlarge the opening into the thorax, compress the lung against the hilus to stop its movements, and sew up the precordial opening, but should the wound extend to the heart itself we can sew up the muscle walls of the heart by interrupted stitches, then cleanse the pericardium and sew it up, or if preferred a drain can be left in the pericardium and extend outside the chest. Should the wound extend into the abdominal cavity, we will have to enlarge the opening of the thorax so as to get a clear view of the injury of the diaphragm, and through the latter we can examine the contents of the abdomen which may be injured. If the abdominal viscera are injured they may be repaired through this opening, or a laparotomy may be done. Dr. Murphy in a number of cases has found this the best way to attack the injured diaphragm, that is, through the pleural cavity. He mentions a case in which he had his assistant resect a rib, enlarge the opening found in the diaphragm, examine the abdominal contents, cleanse the parts, sew up the opening in the diaphragm, and then sew up the opening in the pleural cavity. The patient made an uninterrupted recovery. More or less pleuritic effusion will be found in hemothorax. Should this effusion be sufficient to interfere with respiration it will have to be removed by aspiration, but should it be a septic pleurisy it will have to be removed by a large opening. The best time to aspirate in hemothorax is about two weeks after the injury. At that time the blood-clot will have separated from the serum. If the bloody serum will not flow through the aspirating

needle the clot will have to be removed by operation. Aspiration of the cavity can be done every few days or every few weeks, according as the needs of the patient demand.

Hernia of the Lung.—This is rarely seen. It may be subcutaneous or compound. In the former a blow on the chest may rupture the parietal pleura along with the intercostal muscle and a part of the lung become caught in the opening. The treatment is constant pressure and if that is not successful the return of the lung to the pleural cavity is recommended; an opening through the skin should be made, the opening between the ribs enlarged, and the lung replaced. The external opening should be closed. Should the hernia be compound cleanse the lung and return it to the pleural cavity. If it should be severely lacerated or gangrenous when seen that portion of the lung will have to be amputated and the stump returned to the pleural cavity. Dr. Murphy quotes from Paget the treatment given in 1499 by a doctor in Bologna. He saw the patient six days after the hernia had taken place. The lung was covered with pus and insects. After the doctor got permission from the priest to treat the patient he cut off the necrotic lung and with it about one-eighth of an inch of necrotic skin surrounding it. He then put on some red powder and kept the parts bathed with warm water. The patient made a good recovery. The doctor stated that if he had seen the patient at once he would have washed the lung and kept it warm by splitting a chicken down the back and applying it, keeping up constant pressure, and if that did not succeed he would have enlarged the opening by a wedge of wood to facilitate the reduction of the prolapsed lung. This is exactly the treatment we recommend today, but in a modified manner.

Gunshot Wound of the Lung.—Small balls make a small hole at entrance and exit and unless a large vessel is injured the bleeding is not excessive. Foreign material is rarely carried into the lung. The treatment is to cleanse the opening in the pleura and remove any foreign bodies or splinters found in the pleura or in the lung and then pack the opening in the pleura. Of course after closing or draining the pleura one must be on the lookout for traumatic pleurisy and pneumonia, also pericarditis and endocarditis, for these sequels often follow injuries to the lung and pleura. The lung itself bleeds little from such injuries. In severely lacerated wounds resulting from foreign bodies being driven into the lung we use the Röntgen ray for diagnosis and by taking several pictures in various positions of the chest and marking the planes on the body through which we take the picture we can approximate the position of the foreign body in the lung where these planes cross. The opening should be enlarged and the foreign body removed. The pulling of a wounded lung into the opening of the chest not only plugs the opening and prevents the entrance of air into the pleura, but it assists in the restoration of the normal functions of the wounded lung by equalizing the respiration. A compression of the lung against the mediastinum stops its motion and unless the pressure is so great as to rupture the mediastinum the compression of the lung by supporting the mediastinum assists in the respiratory movements of the uninjured side. The surgical procedure that I have just spoken of is of grave nature, therefore we must be prepared to anticipate the various symptoms of shock, collapse, cessation of respiration, and heart failure. We may be compelled at any time to desist from the operation owing to the critical condition of the patient. Gradual compression of a lung by fluid or air introduced into the pleural cavity gives only a transient discomfort, the other lung takes up the double function and the breathing goes on without any discomfort. We must not forget the complications that arise in the pleura, lung or heart after these operations. Should septic inflammation of the pleura or pericardium be found we must drain off the effusion. It may take several weeks or months for

a collapsed lung which has been bound down by adhesions to return to its normal condition. When it is impossible for the lung to expand we may have to do a large osteoplastic resection of the chest wall, which will allow the collapse of the chest wall on the lung.

Wounds of the Heart.—The article by Dr. H. M. Sherman, of California, read at the American Medical Association of this year, is most instructive and thorough. In all injuries of the pericardium or heart, to expose fully the bleeding point we must go through the pleural cavity, hence we have to deal with two serous cavities. Interrupted stitching of the heart muscle is the correct way to stop the bleeding from the organ. As sepsis very often follows these wounds the question of draining or not draining these serous cavities comes up. Should the wound be closed one must be ready to drain it at the first symptoms of sepsis. Dr. Sherman found that after wounds of the heart he could best sew up the openings by putting in two steady stitches on each side of the wound, and by pulling them across each other the wound could be closed; then he puts in his interrupted stitches, placing them well down in the muscle wall of the heart, using either silk or catgut as suture material. When we are placing stitches the heart will be found to be beating so rapidly that we do not take any cognizance of either diastole or systole. In operating on wounds of the heart the collapse of the lung and cessation of respiration are more to be feared than the stopping of the heart-beat. In penetrating wounds of the chest or in injuries of the lung we have most often a partial or complete collapse of the lung from pneumothorax or hemothorax, or both. At this time the sound lung is doing the work of both lungs. The first shock of this extra work is over and the respiration, as a general thing, has become regular by the time we begin to operate. By opening the chest we allow the vibration of the mediastinum, and that prevents the proper filling of the lung by the strong piston movement of the diaphragm; hence, it is expedient to compress the lung against the mediastinum to prevent its vibration, or to pull the lung into the wound of the chest and in that way the respiratory efforts will be assisted and the proper filling of the uninjured lung by air will take place. The escape of a small amount of air into the pleura is not a serious consequence; it is absorbed in a very short while. Should there have been any emphysema there will be for some time a thickening of the pleura and adhesions between the parietal and visceral pleura, which will prevent the collapse of the lung when the opening into the chest is made.

Dr. J. D. Bryant, of New York, in the *Medical News* of July 28, 1900, mentioned the case of a young man who was hurt by having a shaft of a wagon driven into his chest. The third, fourth, and fifth ribs on the right side were broken and there was severe laceration of the tissue and soft parts and the parietal pleura. He cleansed the injured parts and removed the badly lacerated tissue and broken ribs and then placed the sides of the wound in apposition. A subsequent empyema developed, which was drained, leaving a cavity which had an opening above. This Dr. Bryant succeeded in closing by constant aspiration of the suppurating cavity. One would think that the better way to have treated this suppurating cavity would have been to open it from the bottom and done away with the aspiration from above.

The following cases which I will narrate are taken as examples from a number in my service:

CASE I.—March, 1901; a railroad man, aged 30, was caught between the bumpers of two cars on the short side of the curve. I saw him half an hour afterward at his home. Upon examination I found a weak, thready pulse; increased and difficult respiration; cold, clammy sweat over his body. The chest and back were emphysematous. There was hemoptysis, some pneumothorax, great dyspnea, and an anxious expression. The third, fourth, and fifth ribs on the left side were broken. The acromial end of the clavicle was dislocated upward and

the ligaments were torn off. The chest and back were severely contused.

Treatment.—The man was stimulated, the shoulder was covered with cotton, and snug bandages were applied around the shoulders and chest. The man developed on the left side traumatic pleurisy and pneumonia, the pleurisy extending up to the spine of the scapula. He was critically ill for three weeks, when the symptoms slowly subsided and he made a good recovery, returning to his work four months after the injury.

CASE II.—In February, 1892, a young woman was shot through the fleshy part of her left arm above the elbow, the bullet passing into the chest below the sixth rib at the axillary border. The bullet was from a small pistol. She had slight hemoptysis, and there was pain on deep inspiration. The wound was cleansed and dressed. A local pleurisy and pneumonia developed. She expectorated bloody sputum for 10 days. In four weeks all symptoms had disappeared, and she left the hospital. The bullet was not located.

CASE III.—In January, 1892, a white man, aged 50, fell, while drunk, across the iron rail of a railroad track, striking his left side and breaking the sixth, seventh, and eighth ribs. When seen a few hours after the injury there was some shock, weak rapid pulse, some emphysema around the chest and some hemoptysis. The chest was compressed with adhesive straps extending completely around the body. At the end of 24 hours he developed a severe case of delirium tremens, which continued for 12 days. A pleurisy developed on the injured side, and the fluid extending up to the border of the third rib completely compressed the lung. There was displacement of the heart to the right side and difficult respiration and irregular pulse. The man laid on the affected side. The temperature was 100°; respirations, 50; pulse 110. Two weeks after the injury the chest was aspirated and two quarts of bloody serum withdrawn with great relief to the patient. This aspiration was repeated three times. The fluid at each subsequent aspiration was less in amount and not so discolored with blood. The lung expanded, and at the end of three months the patient left the hospital and returned to his work.

CASE IV.—In February, 1900, a man, aged 35, came into the hospital having been shot 16 hours before. On examination two bullet wounds were found to the left of the median line above the umbilicus and on the outer edge of the rectus muscle. The temperature was 101°, pulse 120, weak and thready, respirations 40. Heart sounds were very indistinct. There was shock, an anxious expression of the face, and the body was cold and covered with perspiration. The abdomen was distended and powder marks were found around the wound. There was dullness at the base of the right side of the chest, which extended up to the border of the scapula, showing evidences of some internal hemorrhage. The man was stimulated and salt solution put under his skin. A laparotomy was done. There were four openings found in the small intestines, and several mesenteric vessels were cut. The abdominal cavity was filled with bloody clots and extravasated intestinal contents. The abdominal cavity was cleansed thoroughly with hot salt solution, the openings in the intestines and the mesentery were closed. At this stage of the operation the man was severely shocked, the abdomen was filled with salt solution and the wound was closed. The man was given more salt solution under his skin and an enema of hot coffee. He was put to bed but continued to grow worse and showed evidence of internal hemorrhage, the right chest becoming slowly filled with fluid. He died 62 hours after being shot. At no time after the first operation did I feel justified in subjecting the patient to another one. At the autopsy the wounds of the intestines and the mesentery were found to be closed and intact. On examining the diaphragm a bullet wound was found which extended into the pericardium. It made two holes through the right auricle and then through the pericardium again and then cut a small opening in the outer side of the vena azygos major. The pericardium was filled with blood and two well-formed blood clots were found in the openings of the auricle. Some blood had escaped from the pericardium into the right pleura. This cavity was filled with blood from the wounded azygos major vein. At the time of the operation I did not find the opening through the diaphragm. Had an opening been found in the diaphragm the man's condition was such that I could not have extended the time of the operation, and even had the operation been continued, the autopsy showed that he could not have been saved.

CASE V.—November, 1901, a conductor on a street railway got into a fight and was stabbed with a small penknife in the chest. Dr. A. C. Harrison saw him a few minutes after the injury and ordered him sent at once to the hospital. The man was extremely nervous and fearful of death. There was some blood on the chest that had escaped through a small wound at the left border of the sternum in the first intercostal space. The skin was cut about one-quarter of an inch in length and parallel to the rib. The skin was cleansed, and under a local anesthetic the wound was enlarged and an opening found that extended into the thoracic cavity. Some blood was found in the muscles under the skin. There was some flatness at the back of the left pleural cavity. From the direction of the wound it seemed that the internal mammary artery or some larger vessel near the heart had been severed, and there was evidently some internal hemorrhage going on. Under a

general anesthetic a large flap of skin and muscle was turned back, the sternal end of the second rib and its cartilages and a part of the sternum were cut away. This gave an opening into the chest cavity, and the bleeding points of the internal mammary vessels were found retracted some distance from the stab wound. These bleeding points were caught and tied. There was a small stab wound of the lung, which was not bleeding to any extent, and nothing was done with it. At this time the respiration became irregular and the lung collapsed. The face was very much cyanosed, and respiration ceased. The heart-beat was irregular and rapid. The wound was packed, the man inverted, artificial respiration done, tongue pulled forward, salt solution given under the skin, and strychnin and whisky hypodermically. After about two minutes respiration began slowly, and shortly after that all the symptoms of collapse disappeared. The wound was closed and a dressing applied. The man continued to improve, and at the end of three weeks he was going about the ward. The blood in the pleural cavity was gradually absorbed, and no inflammatory conditions followed the operation. He returned to his work two months after the injury. This was a clear case for operation, and no one would have hesitated to operate if they had seen the patient at the time we did. Should we have not operated the results would have necessarily been fatal.

Dr. T. H. White, of Connellsville, Pa., mentioned a case of a railroad man who had been under his care. His chest had been severely injured and there were several broken ribs. The man got along very well for three weeks, having at times some slight dyspnea and cough and expectoration streaked with blood. Three weeks after the injury he was walking around the ward when he suddenly felt great oppression, and had a violent hemorrhage from the mouth. He died in a very few minutes. At the autopsy a portion of a broken rib was found imbedded in the lung. It had produced ulceration of the lung and some of the large vessels, from which the hemorrhage had taken place. In all cases in which there is a foreign body in the lung we should operate and remove the foreign body, otherwise the result will follow sooner or later that in Dr. White's case. There will either be a sudden death due to hemorrhage, or there will be a prolonged illness due to suppuration in the lung, and death from pyemia.

Dr. J. W. MacDonald, of Fairmount, W. Va., mentioned a case which he had in his service April, 1892. The man had been shot one inch to the left of the sternum in the third intercostal space. When seen, one hour after the shooting, there was great shock, dyspnea, and slight expectoration of blood. Evidently the lung had been injured, but whether some large vessel had been hit, it was impossible to say. The man was moved to the x-ray room and several photographs were taken of the chest in the different positions. In each picture a shadow was seen which seemed to be about two inches from the angle of the sixth rib. The rib was therefore resected, and by retracting the edges of the wound the lung was grasped and a bullet was found one inch from the surface of the lung. The lung was incised, the bullet removed, and the hemorrhage, which was rather profuse at first, was checked by a solution of adrenal wiped over the surface of the cut lung. The wound was closed, and at the lower point a drain was left in the pleural cavity for three days. The man made an uninterrupted recovery.

In May of this year I made some observations on the thorax of dogs. The dogs were given .13 to .26 gram (2 to 4 grains) of morphia hypodermically half an hour before operation. Under ether anesthesia the skin was prepared as in all operations, and thoroughly aseptic precautions were taken through all stages of the work.

CASE I.—On May 27 a dog of medium size was anesthetized and the third and fourth ribs on the left side were resected for three inches. This gave a large opening into the thorax. The respiration immediately became rapid and panting. After six to eight respiratory efforts the lung collapsed and there was a parallel ballooning up of the collapsed lung with the expiratory effort of the right lung. Respiration then ceased, the heart-beat continued rapid and weak. The wound was packed with gauze and the dog elevated, the tongue pulled forward and artificial respiration begun. In about two minutes slow and irregular respirations began and soon became normal. The gauze was removed from the wound and the same symptoms recurred. The lung was then grasped and

pulled into the wound, completely closing it. Artificial respiration was begun again as before and in about two minutes the dog slowly revived. The lung was then allowed to escape into the chest and after a few respirations the same excitement, panting respiration and rapid heart-beat were noticed. The lung was then compressed against the hilum and artificial respiration begun as before and the dog soon revived. The two upper lobes of the left lung were then pulled out and a double ligature passed through the lung at the hilum and the lobes were cut off. I will say here that we always find the dog's lung of many more divisions than that of the human being. The visceral pleura was sewed over the cut surface of the lung and the stump put back into the chest. The wound was closed with interrupted sutures and the skin with silkwormgut, and a collodion dressing applied. On May 28 the dog was a little sick but walked around and drank milk and water. He had very little fever and continued to improve and grow fat. On June 24 the dog was killed, the chest opened, the stump was found thoroughly healed, the ligature around the base of the lung was buried in the adhesions, and the lower lobes of the lung were doing their proper work. There were some plastic bands running across the upper part of the thoracic cavity which had contracted, allowing the pleural surfaces to become adherent. There were no signs of suppuration in either pleura or the pericardium.

CASE II.—On May 28 a dog of medium size was anesthetized and the fourth and fifth ribs on the right side resected. All the respiratory symptoms were noted as in the first dog. The lung was then brought into the wound and the upper lobe was split from the hilum to the free border and allowed to bleed freely. It was then sewed with interrupted silk sutures on both sides of the incision. These sutures were sufficient to stop the bleeding. The thoracic cavity was wiped out and the chest closed by interrupted buried sutures, the skin closed by silkwormgut and the collodion dressing applied. On May 29, 30 and 31, the dog was very sick and showed all evidences of septic infection. The dog died May 31. At autopsy the chest contained one pint of dirty thin septic pus. Lung was collapsed and covered with a layer of fibrinous exudate. There had been no bleeding into the cavity of the chest. There was also a septic pleurisy on the left side. There was septic pericarditis and endocarditis.

CASE III.—On May 28 a dog of medium size was anesthetized, the fourth and fifth ribs on the right side were resected, the chest freely opened, and all phenomena as in Case I noted. The lower lobe was then pulled out of the opening and was cut off at the hilum and sutured as in the first case. The dog did well for three days, then a pleurisy and pneumonia developed on both sides and on the sixth day the dog died. On autopsy there was a double septic pleurisy and pneumonia with septic pericarditis and endocarditis.

CASE IV.—On May 28 a dog of medium size was anesthetized and the fifth and sixth ribs on the left side were resected, the chest opened, and the lung pulled into the wound. The upper lobes were ligated at the hilum and cut off. Respiration at this time ceased and the dog could not be resuscitated; the heart continued to beat for five minutes after respiration had ceased. This dog died from shock, as the right lung had not collapsed.

CASE V.—On May 30 a dog of medium size was anesthetized, and the left chest freely opened. After eight respiratory efforts both lungs collapsed. This dog could not be resuscitated; the heart continued to beat for six minutes after respiration ceased.

CASE VI.—On May 30 a dog of medium size was anesthetized and the third, fourth, and fifth ribs on the left side were resected. The lung was compressed against the hilum and a large opening made into the pericardium. The left ventricle of the heart was stabbed, the wound extending into the ventricular cavity, which was shown by blood spurting out of the wound during each systole. A finger placed over the opening controlled the bleeding. The right lung at this time collapsed and the dog could not be resuscitated. The heart continued to beat for some minutes afterward.

CASE VII.—On May 30 a dog was anesthetized, the left chest freely opened, the pericardium was drawn into the wound and opened. The left auricle was cut into and it bled freely. The opening was caught up and closed by a ligature, the heart continuing to beat. The ventricle was then opened freely and bleeding was controlled by two deep interrupted sutures. The lungs of this dog also collapsed and it could not be resuscitated.

For operating on the chests of dogs, we should have at hand artificial means for continuing the respiration; the mediastinum in dogs is thin and in many cases there is a direct communication between both pleural cavities. The opening of one side of the chest is practically the same as making an opening into both sides. There is nearly always a collapse of both lungs. By opening the chest we interfere with the action of the diaphragm, and until the chest cavity is closed the lung should be inflated and emptied by artificial means. The immediate thing to be feared in all chest wounds is the collapse of the lung and not the cessation of the heart-beat. Inflammation

tions most frequently follow operations of the pleura, lung or pericardium, and by extensions of these inflammations septic pleurisy, pneumonia and pericarditis develop and the inflammatory products are carried by the medium of circulation into other parts of the body. The lung can be cut and sewed up and regain its normal functions. A large part of a lung can be removed and still the animal continue to live. To open the pericardium we must go through the pleural cavity. None of the dogs lived upon whom the heart had been operated, and these dogs did not die from hemorrhage but they died from collapse of the lung. I found it was possible to close wounds of the ventricle with interrupted stitches. The closing of the wounds of the auricle is far more difficult, owing to the thin walls.

Dr. Sherman's article, to which I have already referred, gives most excellent advice in such wounds. His plan of taking two stitches parallel to the wound of the heart as retaining sutures is a great advantage in steadying the heart when the interrupted sutures are inserted. The stitches into the ventricle should not go down into the ventricular cavity. To place these stitches you must work quickly and take no account of diastole or systole. If the heart is caught with a pair of forceps it will jump and tear itself away from the bite of the forceps, therefore in dealing with a wounded heart it must not be given rough usage. The stitches which are passed quickly and then tied do not seem to excite it. It is impossible to drain wounds of the thorax, of the pericardium, or of the heart of dogs, but in operating upon the human pericardium and heart the advisability of drainage is an open question. If we feel certain of asepsis then the cavities may be closed, but if not it is best to drain each cavity at the lowest point. Should there be any signs of sepsis in the closed cavity we must open it at once and give free drainage.

TRANSIENT UNILATERAL OPHTHALMOPLEGIA EXTERIOR OF PERIPHERICAL ORIGIN WITH ATROPHY OF THE OPTIC NERVE.

BY

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of Newark, N. J.

Mrs. E. E., aged 35, a very healthy-looking woman, consulted me for the first time August 4, 1902. Before her marriage she had an attack of facial erysipelas, followed by falling out of the hair. The first pregnancy resulted in miscarriage at six months, following a fall. The second pregnancy resulted in birth at full term of a healthy child, who is still living and in good health. The next pregnancy ended in miscarriage at two months. The next year she gave birth to a healthy child, who died from cholera infantum when nine months old. In each of the following two years she gave birth to a healthy child, both of whom died from diseases of the respiratory organs. Shortly before the birth of the last of these she had paralysis of the right side of the face, which lasted two months and passed away. Five months before she came to me she had given birth to twins, one of whom has since died from cholera infantum. The other is living and in good health. She nursed the twins for two months, when her milk gave out. Soon after this she began to have severe pains over the right eye. This pain has continued uninterruptedly, and has increased in severity up to now. Two months ago she first noticed dimness of vision of the right eye. Now she is blind in this eye.

I found that she had perception of light only. The pupil was somewhat larger than that of the left eye, but otherwise the eye was normal in appearance. There were no changes in the fundus oculi. The mobility of the eye was unimpaired. There was marked anesthesia of the skin of the lids and of the ocular conjunctiva of this eye. The left eye was normal and vision five-fifths. As she had pain on pushing the globe backward, I looked upon the case as one of retrobulbar optic neuritis, and prescribed potassium iodid, .65 grams (10 grains), three times daily.

An examination of the urine showed absence of albumin and sugar. She denied having had symptoms of syphilis.

A week later I saw the woman again and found no change since the preceding visit. Seven days after this last visit I noticed a drooping of the right upper lid, which could be raised, however, for a moment by strong effort. The lid was neither swollen nor red. There was no other change except that the pain over the right eye was much less. A week later I found

complete ophthalmoplegia exterior of the same eye. The ptosis continued, but she could raise the lid more easily than before. There was no protrusion of the globe. The eye could not be moved in any direction except very slightly downward. When told to look down the eyeball would be rolled in and down. The pupil was still active. It contracted somewhat when strong light was thrown in the eye; it reacted consensually and contracted as much as that of the left eye on convergence. The fundus oculi remained normal except slight blanching of the optic nerve papillæ. The pain over the right eye had now entirely subsided and ptosis had disappeared completely. The ophthalmoplegia continued for about two weeks. After this time it gradually passed away and in about two weeks more no trace of it remained. The globe could be moved in all directions as well as the left one. By this time the optic disk had become quite white and the vessels were much smaller than those of the other eye. The pupil was somewhat larger than that of the left eye, and did not react to direct illumination, but still contracted consensually and in convergence. At the present time she has no perception of light in this eye. The left eye remains normal. There was at no time a paresis or paralysis of the second branch of the fifth nerve.

This case seems to me to be of more than ordinary interest for several reasons. One of these is its comparative rarity. In Wilbrand and Saenger's great work, "Die Neurologie des Auges," a few similar cases are mentioned on page 321, but none just like it. In the cases there mentioned syphilis was present and gummas or gummous exudation at the base of the skull, or periorbitis of the superior orbital fissure or optic foramen was the cause of the eye trouble. In my own case the patient denied having had a primary sore and secondary symptoms, but the abortions and perhaps also the fact that the pain and the paralysis passed away very quickly under the administration of potassium iodid make it at least probable that syphilis cannot be excluded. As to the nature of the lesion causing the atrophy of the optic nerve and the ophthalmoplegia we can only conjecture. It would seem, however, most probable that it was a periostitis, a circumscribed gummous meningitis, or a gamma at the base of the middle fossa, just back of the orbit. It probably first attacked the optic nerve between the chiasm and the optic foramen and then spread to the back of the sphenoid fissure where it compressed the branches of the third, sixth, fourth, and branches, and the first branch of the fifth.

That the disease of the optic nerve was not an inflammation is pretty certain as no signs of retrobulbar neuritis were present at any time and that the lesion was not in the orbit is shown by the absence of the slightest protrusion of the globe.

Speaking of such cases Wilbrand and Saenger (op. cit.) say "if the gummous process extends to the periosteal tissue which occludes the orbital fissure, this circumscribed inflammation will endanger the motor nerves of the globe to a still greater degree, as the oculomotorius and the upper branch of the fifth are here crowded together in a small space. The symptoms caused by this appear often very suddenly, and consist in complete ptosis and paralysis of all the interior and exterior nerves of the globe, with anesthesia of the cornea, the conjunctiva and other regions supplied by the first branch of the fifth nerve, as well as of great impairment of vision or blindness through involvement of the optic nerve, which passes through the neighboring optic foramen." In my case the interior muscles were not affected.

Why the nerve twigs supplying the ciliary muscle and the sphincter pupillæ should have escaped the fate of all the other branches of the third nerve is difficult to explain, unless we assume that their location in the trunk of the nerve shields them to a greater extent than the rest against pressure. I do not know that any one has thus far shown such to be the case. Bernheimer¹ says: "My investigations concerning the further course of the fibers of the center of the sphincter in the trunk of the oculomotorius are not yet completed, but I think I can say at this time that these fibers lie close to

¹ Graefe-Saemisch's Handbuch der Augenheilkunde, second edition, Bd. viii, Chap. xi, second supplement, p. 91.

one another not only in the cerebrum near the median cleft, but that they also further on toward the orbit form a compact bundle, which to all appearances occupies the central portion of the trunk." There is also on record an anatomic examination of a part of the trunk of this nerve before its passage through the dura, in a case of paralysis of the third nerve, in which the ciliary muscle and the sphincter were but slightly involved. The case is published by Ackermann:¹

A young man developed suddenly diplopia, for which he went to an eye clinic in Halle. Two months later his left eye was found to have ptosis and paralysis of the superior rectus muscle, the internal rectus and the inferior rectus. The accommodation was but little injured and the pupil was active, though sluggish. He died five days later. The autopsy showed among other lesions that the third nerve, at about 1½ centimeters before entering the dura, was surrounded by a rigid fold of arachnoid like a ring, and held very tense by an old partly organized blood clot the size of a pea, situated in the arachnoid. The trunk itself at this point was constricted by a deep furrow which reduced its size to that of a thick twine thread. The microscopic examination showed that at this point the nerve was changed to a thin strand of delicate fibers, closely surrounded by the sheath. With a low magnifying power nothing like nerve substance could be seen, only crumbled fragments of medullary substance were visible. While in sections of the lateral portion no signs of preserved nerve fibers could be seen even with a high magnifying power, there could be seen in sections of the medial portion a small number of well stained fibers. They could be traced for some distance in some slides, but their course could be followed much more satisfactorily in a series of consecutive sections through the atrophic portion of the nerve. These preserved fibers were substantially confined to the medial third and in sagittal sections occupied about its middle.

Ackermann thinks that the result of his investigations is of some importance as it gives us information as to the position of the nerve fibers which supply the inner muscles of the eye. He says: "As all the muscles with the exception of the ciliary muscle and the sphincter were completely paralyzed, the nerve fibers found in the trunk of the nerve must be regarded as those belonging to the muscles not paralyzed. The position of these fibers would therefore be in the middle portion in the regions of the medial third of the nerve. Like the other nerve fibers their course is not in a straight line in the trunk of the nerve, but they lie in different planes in different parts and frequently cross other nerve bundles." (Of course what has been said applies only to the described part of the nerve, about 1½ centimeters in front of its entrance into the dura.) This central position in the trunk of the nerve which protects it in an unusual degree against external insults furnishes us with an explanation of certain facts observed in paralysis of the oculomotorius. It brings us nearer to an understanding of the symptom-complex known as ophthalmoplegia exterior, in which the fibers supplying the muscle of accommodation and the sphincter papillæ remain intact while all others are destroyed, and in which nuclear paralysis is not present. He also points out that if such a grave insult as the one which, in his case, struck the nerve causing strangulation of all the entire nerve and destruction of nearly all the fibers around it was incapable of destroying all accommodative and papillary fibers that they will resist less severe injuries still more readily. It would be imaginable that in our case in which the pressure was exerted equally all around, the central position afforded a special protection. Nevertheless this must, in all other cases in which direct lesions reach the nerve, be of great advantage.

My case would seem to furnish further clinical support of the view that cases of ophthalmoplegia exterior are not necessarily of nuclear origin. Wilbrand and Saenger have this to say on this point: "Moreover, the clinical symptoms of an isolated ptosis and of an isolated ophthalmoplegia exterior caused by luetic affection of the trunk of the oculomotorius are the very ones which have so shaken Mauthner's doctrine, held to be well

founded, that at present we are unable to give either a test-proof definition or a trustworthy diagnostic sign for a supposed nuclear paralysis. And when, through a gummosus alteration confined to the trunk of the oculomotorius, an isolated ptosis is actually observed, as the only paralysis of this nerve trunk, it is allowable to transfer this diagnostic experience to other nerves, and v. Graefe's dictum that as a consequence of disease of a nerve trunk the muscles supplied by it must all be paralyzed, has only a limited validity in the future.

Bernheimer¹ says on this point: "It may even occur that it, the oculomotorius, is not affected in the entire diameter either by inflammation, degeneration, or pressure atrophy; that only separate fiber bundles are put out of function. This condition we meet not infrequently; we see isolated paralysis of a single or several bundles of the oculomotorius make its appearance, which seems most likely to be due to an intracerebral disturbance of nuclear or fascicular origin, while in fact the cause is to be looked for in a partial inflammation, degeneration, or pressure atrophy, which may even remain permanently partial of the trunk of the oculomotorius."

GLYCOSURIA GRAVIDARUM.

BY

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of Philadelphia.

That this important complication is not so uncommon as it is unrecognized is due to the neglect of most obstetricians to analyze carefully the urine of all their patients. Were this done more systematically, reports would be fuller and more frequent.

When we consider that important nutritive changes are taking place during the entire course of gestation, and that every solid and fluid constituent of the body is being affected, it seems only rational to anticipate functional disturbances in other organs than those in immediate relationship with the uterus. For instance, the kidneys are particularly affected.

Glycosuria gravidarum does not differ essentially from glycosuria in the nongravid subject. The presence of sugar in the urine, high specific gravity, polyuria, loss of strength, progressive emaciation, and great thirst make the picture complete. Vulvar pruritus is frequent, hydramnios has been observed, and asthma likewise. Ocular disturbance led to an analysis in one case.

The etiology of this disease has been plausibly explained by Oddi and Vicarelli,¹ who found that during gestation there is a largely increased consumption of hydrocarbons derived from the waste of nitrogenous material resulting from fetal nutrition and growth. This was found upon analyzing the air respired by pregnant women. Also heredity, acquired and hereditary syphilis, and pancreatic disease play important roles.

Diabetes insipidus and physiologic diabetes² must not be confused with true diabetes gravidarum; nor is the mere reaction of Fehling's solution conclusive evidence of true glycosuria, since phloroglucin, a so-called glucosid found in many cases, gives a similar reaction. It constitutes a type of glycosuria giving rise to no constitutional or systemic disturbance, nor is it found in the blood.³ Conjugal diabetes is diabetes existing simultaneously in man and wife. Climacteric diabetes is described by Lawson Tait⁴ as a special form beginning at or near the menopause and running a benign course and terminating in recovery after a few years.

In this paper glycosuria will only be discussed gynecologically. Amenorrhœa develops sooner or later; dysmenorrhœa and menorrhœgia are frequent, depending greatly

¹ Klinische Monatsblätter für Augenheilkunde, November, 1902, p. 306.

¹ Op. cit., Bd. viii, Chap. xi, Supplement II, p. 78.

upon local inflammatory changes. Vulvar eczema, pruritus, granular erosions of the cervix, and fungoid endometritis are also met. Persistent menstrual flow during pregnancy has also been reported.⁵

Diabetes is more rare among women than men and there is ground for belief that apart from its weakening and debilitating constitutional effect it has a special influence upon the sexual centers, producing impotence (although an opposite effect has been noted⁶). Senator⁷ notes with wonder "that conception has even taken place in diabetics."

The frequency of glycosuria gravidarum is a matter of speculation. Foreign investigators give some startling figures. Of 125 cases 60, or 48%, were affected.²⁶ Keim found 4 in 19 cases. Greisinger⁸ reports 2 in 53 cases; Duncan⁹ 1 in 104 cases. Hirst¹⁰ claims that not over 1% are affected. Dorland¹¹ claims 15% to 50%, with a maternal mortality of 25%. The Boston Lying-in Hospital has not had a case in 10,000 pregnancies.¹²

Glycosuria gravidarum may develop during pregnancy or conversely pregnancy may occur during glycosuria. In the latter event its malignancy is early established, usually before quickening, frequently resulting in the destruction of the fetus in utero at or about the fifth or seventh month, though not necessarily expelled until later or at term and showing the usual characteristics of maceration and decomposition. An infusion of the epiderm in one case gave positive sugar reaction.¹²

Those infants born at term invariably die early, living but a few hours, or at most, a few months; if still-born death results from degeneration of the placenta or apoplexy.

Puerperal glycosuria is probably a constant quantity. Brucke¹³ contends that this is a physiologic condition due to lactation. Iwanoff,¹⁴ Lecocq,¹⁵ and Hempil¹⁶ agree with him, qualifying their statement that it increases in proportion to the activity of the mammary secretions. Seegens and Lehman¹⁷ deny these assertions in toto. Lecote¹⁸ believes the reaction of the copper test is due to salts of urine. Weiderholt¹⁹ substantially agrees with him. Du Moulins,²⁰ Gubler and Chailley,²¹ Louvet,²² De Sinety,¹⁸ and Johannowsky²⁴ all emphatically declare their belief in Brucke's theory. It remained for Kaltenbach²⁵ to settle conclusively this vexing problem. He found after an exhaustive and painstaking chemical analysis of 34 puerperal cases that the urines all contained sugar at some time and some few all the time. He concluded it was a constant factor, forming a sort of resorption diabetes; also that any untoward disturbance of the milk secretion from mastitis, puerperal fever, or death of the fetus, augmented the quantity of sugar.

The treatment of glycosuria gravidarum does not differ very materially from that in the nongravid subject, viz., diet, exercise, massage, and the usual medical treatment directed to the cause if found. If, however, there is imminent danger of death to either mother or child, or both, premature labor should be considered.

Beside my own the following cases have been collected from various sources, notably from Fry's paper on "Diabetes Mellitus in Pregnancy:"²⁶

Warner²⁷ (one case; nine pregnancies, five at term and four miscarriages).—First pregnancy, labor at term—instrumental, child living, diabetes not suspected; second pregnancy, 2½ years later, pruritus pudendi at 5 months, labor at term, child died two weeks before birth; third pregnancy, 1 year later, child stillborn, labor at term; fourth pregnancy, 13 months later, child dead; fifth pregnancy, 10 months later, miscarriage at 5 months; sixth pregnancy, 4 months later, miscarriage at 2 months; seventh pregnancy, 3 months later, miscarriage at 6 weeks; eighth pregnancy, 10 months later, miscarriage at 2 months; ninth pregnancy, 2 years later, delivered at term, child dead 7 weeks previous. Quantity of urine rose from three to six gallons per diem, containing 8% of sugar to the ounce. In a personal letter dated February 16, 1903, Dr. Warner states these quotations upon the polyuria are authentic. The woman continued in poor health until her demise, some months after confinement.

Brooks (one case).—Glycosuria discovered at 7 months,

labor induced at the eighth month; child small and emaciated. Both living; no subsequent report upon diabetes persisting.

Duncans (three cases).—First case: Premature death of fetus; labor before term, mother died on third day. Second case: Glycosuria at quickening in the eleventh pregnancy, child dead, diabetes persisting, disappeared after one month, returned in five months, and patient died three months later. Third case (three pregnancies during glycosuria): First pregnancy, fetus dead at eighth month; second pregnancy, fetus dead at term, decomposed; third pregnancy, glycosuria discovered at fifth month; premature labor induced, fetus decomposed, mother died on third day.

Fry (one case; two pregnancies).—First pregnancy, labor normal, child living; second pregnancy, glycosuria discovered at fifth month, labor at seventh month, male child, well formed, dead some days before birth, mother died four days later.

Reid (one case; two pregnancies).—First pregnancy, macerated fetus at term; second pregnancy, four months later, diabetes discovered early, fetus dead at eighth month, resulting in premature labor, glycosuria persisting.

Newman (one case; three pregnancies).—First pregnancy, diabetes existed two or three years before conception; result, labor normal, child living; second pregnancy, normal; third pregnancy, labor at seventh month, child dead, mother died three days later.

Husband (one case; three pregnancies).—Diabetes in third pregnancy, premature labor at eighth month, child died a few hours after, mother died a few months later; liquor amnii saccharine.

Davidson (one case; four pregnancies).—Labor at eighth month, child feeble, lived 13 hours, diabetes disappeared, relapse, and death of mother four months later.

Seegens (one case; three pregnancies).—All three ended in miscarriage at middle of gestation, mother died after third pregnancy.

Lecorché²⁸ (one case; two pregnancies).—First pregnancy, glycosuria throughout, labor normal, glycosuria persisting in both mother and child; second pregnancy, labor normal, child living, also mother.

Taylor (one case; three pregnancies, all diabetic).—First pregnancy resulted in a miscarriage; second pregnancy, labor normal, child living, persisting glycosuria; third pregnancy, same as second, glycosuria persisting.

Bennwitz (one case; six pregnancies).—Glycosuria during fourth, fifth and sixth pregnancy. Child prematurely born dead in fifth pregnancy, also menstruated during this pregnancy.

Winckel (one case; two pregnancies).—First child stillborn, second child alive.

Harmon²⁹ (one case; two pregnancies).—First pregnancy, normal; second pregnancy, glycosuria discovered at fourth month, both living.

Born³⁰ (one case; one pregnancy).—Glycosuria possibly existing several years before conception; seen first at fifth month, urine not examined until a few hours before death (one month later), contained 8% sugar.

Hehir³¹ (two cases; two pregnancies).—First case, patient aborted at fifth month, lived only 12 hours; second case, patient suffered from obesity; glycosuria existed for two years, labor at term, child dead and macerated; both liquor amnii and an infusion of the epidermis of the child showed positive reaction for sugar.

Williams (three cases).—First case (mother and three sisters diabetic): First pregnancy, glycosuria after first confinement, labor at term; second pregnancy, glycosuria, child alive at term, glycosuria persisting; third pregnancy, labor at term, child living, mother died after third confinement. Second case: Glycosuria early in pregnancy, sixth child dead at eighth month; had one abortion, in fourth pregnancy; mother died four months after last confinement. Third case: First pregnancy, labor normal, glycosuria (?); second pregnancy, labor normal, glycosuria (?); third pregnancy, labor normal, glycosuria (?); fourth pregnancy, labor normal, glycosuria negative; fifth pregnancy, labor normal, glycosuria negative; sixth pregnancy, glycosuria; seventh pregnancy, glycosuria, mother recovered.

Friehls.³²—Glycosuria discovered in tenth pregnancy, labor at term, died 15 months later of gangrene and phthisis. Postmortem, tumor of medulla oblongata.

Poulet.³³—Girl of 16, pregnant at 15, glycosuria developed early; miscarried at eighth month; living.

Bennett³³ (one case).—Reports incomplete.

Esterle³⁵ (one case).—Reports incomplete.

Packard.³⁴—Multipara covering period of 21 years, during which time she had numerous miscarriages and two stillbirths.

My own case is as follows:

Mrs. C. G., aged 25, of German extraction; family history negative; previous history of having always been well; her first child was born dead in 1893, but she recovered without any unusual symptoms persisting.

Second pregnancy, one year later (1894); in July, she complained of asthma, aggravated by hydramnios, also of pruritus pudendi; both yielded slowly to treatment, labor came on three months later, at term, transverse position, L. Scap. Ant.

Under anesthesia she was delivered per podalic version with good results. The child weighed nine pounds and was apparently healthy, but died suddenly twelve hours later. My attention being drawn to the patient's great thirst, I was reminded of the sticky character of the liquor amnii, which prompted me to examine her urine, which showed 4% sugar, sp. gr. 1.032, Roberts' test. She recovered and the sugar gradually disappeared.

Fourteen months later (1895) she was again delivered of a stillborn male child. No sugar.

In 1897 she was again pregnant, with sugar in varying quantities from fourth month on. Labor at term, instrumental, child (male) dead, weight ten pounds; recovery, sugar again disappeared.

She remained fairly well, showing no trace of sugar until January 23, 1898, when she applied to me for distressing tenderness of thighs and a feeling of fullness in the abdomen, menses scanty and thin, constipated, polyuria and great thirst. She tires on the least exertion, but has not lost flesh. Urine, sp. gr. 1.040, containing 5% sugar for a. m. specimen and 7% for p. m. specimen; quantity, 180 ounces per diem.

February 11: She missed expected menstrual period. Urine showed 5% sugar for a. m. and 6% for p. m. Fermentation test. Codein, 3 cg. (½ grain) t.i.d. diet. March 14: No appreciable difference; urine, a. m., 1.030 = 4%; p. m., 1.032 = 5%. Fermentation test. Codein was pushed 3 cg. (½ grain) per day until slight effect. March 19: Amount of urine voided, 6½ pints (104 ounces); codein continued, adding podophyllin in small doses until March 29. On this date the urine passed was 80 ounces, sp. gr. 1.032, containing 4 grains sugar to the ounce, or about 1%. Codein diminished gradually until May 14, when urine showed 1.5% sugar for a. m. and 2.5% for p. m. Codein increased. May 17: Urine, 48 ounces per day. Sugar, a. m. = trace; p. m., 3.5%. May 27: Urine, 60 ounces; a. m., 1% = 1.020; p. m., 1.5% = 1.028. Codein increased to 6.5 cg. (1 grain) four times daily. July 24: Sugar in small quantities, refused to continue diet or codein. September 3: Labor induced at eighth month. Child lived three months; sugar disappeared; mother living.

In reviewing this case I was struck by the spontaneous disappearance of sugar in the second pregnancy, only to reappear in the fourth; the repeated stillbirths; the death of the infant after the second labor; the death of the child three months after birth, of inanition, in the fourth instance. In her third pregnancy potassium iodid in ascending doses to saturation was prescribed, hoping to counteract any latent syphilitic taint, but the results were negative. The inference is that glycosuria in the mother was the ultimate cause of death in her offspring. The father is healthy.

All other conditions being equal glycosuria has no effect on labor, this is the consensus of opinion of all writers. Hydramnios has been remarked in several cases. Transverse position a mere coincident. Degeneration of placenta also occurred. Sticky nature of amniotic fluid has been commented upon. This saccharine reaction of amniotic fluid is due to the maternal secretions and not to any fetal urine, since micturition is not established functionally until after birth.

To recapitulate, we have a total of 28 pregnancies with 66 births, with results as follow:

Number of cases reported.....	28
Number of pregnancies.....	66
Number of mothers living.....	15
Number of mothers dead.....	13
Number of labors at term.....	42
Number of miscarriages.....	9
Number of premature labors.....	15
Number of children living.....	81
Number of children dead.....	25
Percentage of mortality to mothers.....	46%
Percentage of mortality to children.....	31

These results need no exhaustive argument to convince the most skeptical of the gravity of glycosuria gravidarum; even syphilis can hardly show so alarming a condition as this.

CONCLUSIONS.

Glycosuria gravidarum may arise at any stage of pregnancy. It is not so serious as when diabetes antedates pregnancy.

It may disappear in one pregnancy and reappear in another, and end fatally after successive attacks. It frequently arises during parturition, but is of no great importance.

Labor is not materially affected, other conditions being equal.

Pregnancy is most likely to be interrupted. Is very destructive to the fetus. More so than syphilis. Maternal mortality is nearly 50%. Diabetics should not marry. Death is usually by coma, no case of eclampsia having ever occurred in a diabetic.

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SPECIAL ARTICLES

THE BUREAU OF GOVERNMENT LABORATORIES FOR THE PHILIPPINE ISLANDS: SCIENTIFIC POSITIONS UNDER IT, ETC.

BY

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The Bureau of Government Laboratories for the Philippine Islands has now been organized for nearly a year and is at present quartered in a temporary building. The commission has decided upon the erection of a comprehensive and fitting structure for scientific work. The land has been secured and the government architect is already at work upon the building. This new Laboratory will be fitted with all modern appliances for thorough scientific work. It will be supplied with gas, water, vacuum, and steam and air pressure. Electric power is to be furnished wherever it is needed and the equipment will be complete. The scheme of the bureau contemplates a central institution in which laboratory work shall be done for all the bureaus which may need scientific assistance, so that a scattering of individual laboratories and a consequent loss of efficiency and equipment is avoided.

The work is separated into two divisions, a Biological and Chemical Laboratory, each occupying a wing of the new building, with the Serum Institute located in the rear in conjunction with the power-house. The building is divided into sixty rooms, so that separate lines of work can be carried on in individual quarters, each person engaged in scientific investigations being thus enabled to have his apparatus and appliances in the most convenient form. The division of the space is as follows:

GROUND FLOOR.

- Physical laboratory with constant temperature room below.
- Assay laboratory.
- Balance room.
- Combustion room.
- Distilling room.
- Research room for vegetable products.
- Chemical stores.
- Apparatus stores.
- Storekeeper's office.

Bacteriological diagnosis, two rooms.
 Animal parasites.
 Culture media.
 Mechanic.
 Incubator and cold storage.

FIRST FLOOR.

Mineral analysis.
 Chemical director's laboratory.
 Chemical director's office.
 Sugar and food analysis.
 Library.
 Plant pathology.
 Biological director's office.
 Biological director's laboratory.
 Biological research.
 Spectroscopic rooms.
 Clinical research.
 Pharmacology.
 Balance room.
 Photography.
 Collections.
 Pathology.
 Physiological chemist.
 Three research rooms.
 Outdoor laboratory.

POWER-HOUSE.

Cold storage plant and cold storage rooms.
 Serum packing room.
 Serum laboratory.
 Serum kitchen.
 Crematory.
 Engine room.
 Boiler room.

The plans of the Bureau contemplate research work not only in the realm of tropical diseases of both man and animals, but also in the resources of the islands.

The work during the past year has included a large number of analyses for the Board of Health, Custom House, Mining Bureau, Forestry Bureau, and Agricultural Department, diagnostic work for the various government hospitals, and investigations in tropical diseases, as well as researches on gutta-percha, rubber, and gums found in the islands. The scope of the work is continually widening, and there is no doubt but that the Bureau offers large opportunities for young men who desire to acquaint themselves with the conditions in the tropics and to advance our knowledge of lines of work which are each year concentrating more and more the interest of the scientific world.

The positions in the Bureau, outside of the Directors, are all under the Civil Service, and qualifications can be obtained through the Civil Service Commission at Washington. The scheme of the Bureau contemplates the following additions to the laboratory force during the next year:

One soil and water analyst	\$1,500
One plant pathologist	2,500
One physical chemist	2,400
One analytical chemist and mineral analyst	2,000
One assayer	1,500
One entomologist	2,500
One animal parasitologist	2,500
One pathologist	2,400
One drug assayer and toxicologist	1,500

The candidates for the higher salaried positions, by understanding, will not be subjected to a rigid examination, but their previous research work, university degrees and general knowledge will qualify them, after the facts have been submitted to the Civil Service Board and found satisfactory.

The salaries for young men are good, and although expenses in Manila are at present higher than in the United States, nevertheless the difference in salaries is large enough so that prospective workers will be better paid here than they would be in America. It is the intention to engage none but the most efficient workers in the corps, and it is hoped that in the course of a few years a connection with the Bureau of Government Laboratories will be equivalent to a certificate of their superior attainments.

The plan of the institution contemplates the reservation of a certain number of research rooms in the laboratory building. These are to be at the disposal of independent investigators who wish to come to the islands for a temporary period as the guests of the Laboratories. These workers will be furnished all the laboratory facilities they desire, and it is hoped that the opportunities offered will render scientific study in the

tropics easy of access to all who have planned to undertake certain lines of work in which they are interested.

The recent report of the Director of the Biological Laboratory at Manila, P. I., says that while the practising physician of today, even in temperate climates, continually calls upon the clinical laboratory for diagnostic aid, the medical man of tropical countries must much oftener feel the need of the microscope end of the laboratory for the intelligent and correct diagnosis of his cases. Particularly is this so in regard to the febrile and intestinal diseases of hot countries, and without the accurate diagnosis of which much of the treatment must necessarily often be doubtful and of no avail. Thus in Manila we find typhoid, malaria, dengue, Malta fever, occasionally filariasis and a group of unclassified febrile disturbances. Without laboratory aid it is sometimes impossible to differentiate between these febrile conditions, while with such help the diagnosis is often at once rendered clear and final. For example, in typhoid and Malta fever we have specific serum reactions, while in malaria the hematozoon of Laveran is present in the blood. In filariasis, the discovery of the nematodal parasite in the circulation at once determines the nature of the disease, while in dengue fever, the absence of all these manifestations and the presence of a normal leukocyte count give us often valuable aid in differentiation. The laboratory examinations are, therefore, indispensable in this class of cases. So in regard to the intestinal troubles. Acute amebic dysentery must be frequently differentiated in the laboratory from bacillary dysentery, the former by the presence of the ameba dysenteriae in the stools and the latter by its specific serum reaction. How necessary this early differentiation is at once becomes evident when one considers how different is the treatment in each of these diseases. Likewise in regard to the specific diarrheas, such, for example, as owe their origin to *Strongyloides intestinalis* and *Balantidium coli*, and which are not amenable to ordinary treatment and soon result in chronic disease, it is impossible to correctly diagnose these affections without microscopic aid. Further than this, we shall only mention one other example of this group of animal parasitic diseases common here, namely, uncinariasis. In this malady, in severe cases, the untreated or incorrectly treated patients soon arrive at an advanced state of chronic anemia with marked debility and wasting. The diagnosis of the condition can only certainly be made by a microscopic examination of the feces, which examination also differentiates at once the affection from other forms of anemia. With the nature of the disease understood the parasite may be immediately attacked and the patient soon put on the road to recovery, while without such differentiation the individual often suffers for months and grows steadily worse under all treatment other than that directed against the uncinaria.

In still another class of cases, namely, those that are not only of importance to the individual infected, but also to the general public health, and upon the early and definite diagnosis of which so much depends in regard to the safety of the community, the laboratory must again be consulted for a final decision. Examples of such diseases are seen in bubonic plague and Asiatic cholera. Before the appearance of an epidemic it might be clinically impossible to differentiate a few cases of the latter disease from cases of cholera nostras of severe type, and only by laboratory aid could such a distinction be made possible. At the beginning of our recent epidemic we were able through such aid to strongly suspect the presence of Asiatic cholera within four hours of the appearance of the first case in Manila, and such a suspicion was made a certainty and the specific organism isolated and identified within 48 hours of this time. The importance of this fact can hardly be overestimated, as without such a laboratory diagnosis it would have been impossible to convince a large number of physicians for probably several weeks that Asiatic cholera really existed in the city. In regard to bubonic plague it is often possible by laboratory tests to diagnose the disease some time before the clinical symptoms are such that the malady may be definitely identified by them, and the early diagnosis of the first case of plague in a community is a most important factor in the suppression of the disease in that vicinity. The above instances have been cited merely as illustrations (of which many more might be given) of the importance of the Biological Laboratory in

Manila in its relation to the practising physician here in the problems that present themselves daily to him and of its direct practical value in the study of human tropical disease in which not only the physician, but the afflicted individual or even the community may be benefited.

Of its relation to the study of animal diseases I shall not weary you with many instances, but shall merely mention here that the diagnosis of such diseases as surra, glanders and farcy, pseudofarcy, hog cholera and swine plague and other diseases, all present here, are being diagnosed and differentiated very frequently in our Biological Laboratory¹ and that the presence in the Philippines of all of the above diseases was first recognized in the Laboratory. I, however, wish to mention particularly the discovery and report of a form of pseudofarcy occurring here which was formerly mistaken by veterinarians, from its clinical manifestations, for true farcy or cutaneous glanders, and the fact that a considerable number of horses suffering from this disease were destroyed. Through Circular No. 1² an effort was made to acquaint veterinarians and horse-owners with this malady, and doubtless now many animals will be saved that would formerly have been promptly killed. This serves merely as an example of the close relation of the Laboratory to important economic interests. Since Circular No. 1 has been published, a number of veterinarians have visited the Laboratory and admitted that they had destroyed horses which were probably suffering from this pseudofarcy. Specimens have also been sent for diagnosis which have proved to be from cases of this disease.

From, however, still two other points of view must the importance of the Biological Laboratory, particularly in Manila, be considered, and from both of these it is probably of equal or even of greater importance than from those points mentioned above, although it will perhaps sometimes be difficult to convince the laymen of this fact.

We refer, first, to its educational value, not only to the practising physician both native and foreign, but to the community in general. The other point of view is the influence it will exert on the progress of research in tropical diseases of man and animals in these islands. At this moment, however, it seems that the time is hardly ripe for the discussion of both of these questions. Still, in regard to the education of physicians and of the people, it may already be stated that the laboratory is today doing a much larger amount of diagnostic work than it did formerly, and that this work is increasing daily. The practising physicians, both native and foreign, and the doctors of veterinary medicine are continually making use of it in the diagnosis and differentiation of those diseases already mentioned in this article and in other affections. Occasionally a physician submits a specimen to the Laboratory for examination. The return blank informs him of the presence of some parasite which he had not suspected, or one which may be even unfamiliar or unknown to him. He is then of necessity compelled to inquire into the nature of the parasite and the treatment of the disease which it produces, and his knowledge is increased thereby, and the patient indirectly benefited. It has not been difficult for the writer to see the influence which the Laboratory has had upon the practice of both human and veterinary medicine in these islands. Educational influence exerted formerly by the Army Pathological Laboratory and the Laboratory of the Board of Health (both at present disbanded), and now by the Biological Laboratory can be easily traced. For some time after arriving in these islands, three and a-half years ago, it was a very rare thing for a blood or fecal examination to be performed for diagnostic purposes. The diagnoses in a certain class of cases were "guessed at." Today it is comparatively unusual here for a physician to treat a case of intestinal disease without a microscopic examination of the excreta. The people of Manila have likewise shared in this education, and it is not unusual for them now to suggest or ask during their illnesses that a laboratory examination of their blood or feces be made. Also in their daily hygiene, their choice of food and drinking

¹ The importance of the certain and early differentiation and diagnosis of these diseases is obvious. For example, an animal infected with surra endangers every other horse in the immediate vicinity. The same may be said of glanders for horses, rinderpest for cattle, and hog cholera and swine plague for pigs.

² See page 34 of the report.

water and in their protection of themselves against mosquitos they have been informed and instructed by the Laboratory (though sometimes indirectly). The value of its educational influence upon the veterinarians here is at once apparent from what has already been said, and we shall not dwell upon this topic further.

In regard to its influence upon the progress of research in the islands, we shall merely add that by laboratory aid only has it been possible to demonstrate the presence of both human and animal diseases in these islands which were hitherto unknown to exist here. Likewise, many new points have been added to our knowledge of these and other prevalent diseases.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

[April 18, 1903. Vol. XL, No. 16.]

1. Treatment of Puerperal Fever. C. S. BACON.
2. Flatfoot in Infants and Children. ROBERT W. LOVETT.
3. The Present Position of Gallstone Surgery. WILLIAM WOTKYNSEY SEYMOUR.
4. Bromid of Ethyl in Adenotomy and Tonsillotomy. A. R. SOLENBERGER.
5. Rupture of Gallbladder or Duct from Vomiting, with Rupture of Appendix in Same Patient; Two Cases of Appendicitis; Acute Yellow Atrophy of the Liver. W. W. GRANT.
6. Accessory Pancreas. G. F. RUEDIGER.
7. Poisoned Wounds by the Implements of Warfare. LOUIS A. LA GARDE. (Concluded.)
8. Transplantation of the Omentum: A Clinical and Experimental Contribution. EMANUEL J. SENN.
9. Fibrosis of the Larynx and Trachea. RALPH W. SEISS.
10. The Pathology that Remains After the Nonsurgical Treatment of Peritonitis. H. D. NILES.
11. The Use of a Mydriatic After the Age of Forty-five. HORACE M. STAREY.
12. Prescription Repetition and Its Dangers. WILLIAM C. ALPERS.

1.—Puerperal Fever.—C. S. Bacon notes that puerperal infection carries off more women in the prime of life than any other disease except tuberculosis. This is due to failure of recognition by the laity and the profession of the importance of the management of labor. The writer discusses the differentiation of true infection and sapremia and the treatment of both. [H.M.]

2.—Flatfoot in Infants and Children.—R. W. Lovett describes the method of walking on the inner border of the foot in an attitude suggesting knock-knee, and believes that a lacing about the ankle makes it easier for the muscles to exert their force. Making the inner edge of the sole and heel thicker than the outer edge by $\frac{1}{8}$ or $\frac{1}{4}$ of an inch (3 to 6 mm.) will sometimes throw the weight more on the outer border and correct the deformity, but this may produce corns. The most useful method of correction is a graduated pad of leather or felt incorporated in an insole which raises the arch and holds the foot on the outer border. In the severest cases some pull on the inner malleolus is required. A steel plate jointed at the ankle to an upright running on the outer side of the leg to the upper part of the calf is necessary. The child should be drilled in use of the muscles and correct standing. [H.M.]

3.—See *American Medicine*, Vol. IV, No. 18, p. 689.

4.—Ethyl Bromid.—According to A. R. Solenberger, for the brief anesthesia of ethyl bromid all of the forked guillotines and the old patterns of McKenzie are too slow and clumsy, and those intended for the associate use of vulsellum and cold snare are not practical. To make ethyl bromid thoroughly effective it must be limited to selected cases and the use of a guillotine whose fenestrum can be opened with one hand, and whose blade and fenestrum ring are as thin as adequate strength will permit, and which allows of a grasp so firm that the tonsil can be crowded into the fenestrum to its fullest extent with a precision and quickness commensurate with the evanescence of the anesthetic. The writer describes a modification of the McKenzie guillotine intended to fill these indications. Three children's sizes are necessary. When anesthesia is complete 45 seconds are required to excise the tonsils, leaving one minute of unconsciousness to clear the vault. If the operator has not the dexterity necessary to complete both operations in this time there may be two sittings with bromid of ethyl. [H.M.]

6.—Accessory Pancreas.—G. F. Ruediger reviews the

literature and reports a case of recent occurrence in which the mass was located in the wall of the jejunum. He discusses the investigations as to the development of the pancreas from the intestinal tract and believes we are justified in concluding that it is formed from three embryonal matrices, one dorsal and two ventral. If one of the original diverticula fails to unite with the others we can understand how it would give rise to an accessory pancreas. Abnormalities of the duct may occasionally be a factor in causing hemorrhagic pancreatitis from impaction of gallstones in the ampulla of Vater. Annular pancreas may so constrict the bowel as to cause marked dilation above the point of constriction. Diverticula of the intestine may be produced by continuous traction. The anomaly may at times be the starting point of carcinoma. Obstruction to the movements of the intestinal contents may be caused. [H.M.]

7.—Poisoned Wounds.—L. A. La Garde finds that although the composition and manufacture of ammunition, with the exception of the wad, rather negative the presence of bacteria in original packages observations show contamination in the explosive in 12% and in the ball in 47%, and this is increased by handling. The wad and wadding materials are always contaminated. Bacteria are not destroyed by the heat generated in firing. When placed in the barrel they can be recovered by shooting into culture media or animals. This has been demonstrated by anthrax placed on bullets and in black and smokeless gunpowder. Tetanus has been transmitted with fatal results when placed anywhere from the powder to the point of impact on the skin. It follows that all forms of bacterial life can be transmitted by portable firearms. Hematoma confer a special predisposition to infection, and gunshot lesions are of this nature, the lacerations and other injuries leading to a condition of necrosis beside, making them still more susceptible. The necrosis caused by burning is another factor, manifested in toy pistol tetanus. Vegetable poisons like curare and ricin and animal poisons like snake venom can be conveyed in the same way. Clean incised wounds absorb poison more readily than other wounds. In all criminal attempts a chemic and bacteriologic examination of weapon and ammunition and of the point of impact should be made. [H.M.]

8.—Transplantation of the Omentum.—E. J. Senn concludes from a review of literature and clinical and experimental work which he reports that transplantation of omentum over defects in the stomach is an established operation. He recommends it in intestinal defects, but it is still in the developmental stage; the most favorable portion of the intestinal tract is the cecum. Transplantation of omentum over defects in the small intestine should be preceded by fixation of the segment of intestine to the abdominal wall. Gauze drainage should be resorted to, excluding the general peritoneal cavity. [H.M.]

9.—Fibrosis of Larynx and Trachea.—R. W. Seiss finds meager attention given to this type of disease in the textbooks. The progressive sclerosis is unexplained. Stiffening of the muscles, changes in the epithelium, and the close adherence of the mucus give rise to inability to use the larynx in a normal manner for longer than a few minutes at a time. There is extreme vulnerability to acute inflammation. Spasmodic asthma is found in 10% of cases. The treatment should be stimulating—chloroform, volatile oils, carbolic acid, and iodine are most useful, with alkalis for dissolving the mucus. Massage may be cautiously attempted, or may be combined with faradism. Breathing and vocal exercises often do good. Climatic change sometimes arrests the process. [H.M.]

10.—Pathology After Nonsurgical Treatment of Peritonitis.—H. D. Niles believes that absorbed in our efforts to avert immediate sepsis we forget the sufferings and deaths from recurrent attacks and from adhesions, dangers vastly greater than those occurring in primary attacks of acute peritonitis. Just how much general absorption may occur from a low-grade infection of appendix, gallbladder, or fallopian tube is impossible to determine. Febrile and circulatory disturbances, gastrointestinal disorders, headaches, fugitive pains, etc., may be due to such toxemia. Rheumatism is a not infrequent result of the nonsurgical treatment of peritonitis. Adhesions are more reliable evidence of infection than any available microscopic or bacteriologic proof. With adhesions gastric symptoms are

rarely absent, the dragging gives rise to ulcers, and the regions in which adhesions are most likely to occur are also the most frequent sites of malignant disease. In deciding for or against operation this pathology must be taken into the strictest account. [H.M.]

11.—See *American Medicine*, Vol. III, No. 25, p. 1054.

12.—Prescription Repetition.—W. C. Alpers believes the physician should be considered the owner of the prescription. The laws as to ownership differ in different States. The renewal of prescriptions is an evil. Physicians should bring enough influence to bear on legislation to prevent it. [H.M.]

Boston Medical and Surgical Journal.

April 16, 1903. [Vol. XLVIII, No. 16.]

1. A Case of Interscapulothoracic Amputation for Sarcoma of the Brachial Plexus. F. B. LUND.
2. The Diagnosis of Gonorrhoeal Urethritis. ALFRED H. GOULD.
3. Cream for the Home Modification of Milk. CHARLES W. TOWNSEND.
4. Variation in the Composition of Human Milk. PHILIP P. SHARPLES and EUGENE A. DARLING.

1.—Interscapulothoracic Amputation for Sarcoma of the Brachial Plexus.—F. B. Lund reports the case. A man of 40, 11 months previous to the report, was struck by a falling case of goods. The left arm in the region of the deltoid and the left knee were the seats of injury. The knee was put on a splint and retained there for 11 weeks; it is yet somewhat stiff. The arm in the region of the deltoid was bruised and painful, but otherwise attracted no great attention. It steadily grew worse, with darting pain in the radial side of the forearm and hand, and the latter has become weak, with shrinking of the thenar eminence. The left arm became atrophied, nearly completely paralyzed and anesthetic in the median nerve distribution. Treatment was unavailing. Later a hard, movable, tender tumor appeared in the left axilla. Operation was undertaken for removal of the tumor which appeared, on being exposed, to have its principal point of origin in the median nerve. In removing the tumor the axillary vein was torn. It was at once closed by three fine silk sutures. Not all of the tumor could be removed, and a month later, the remaining portion having greatly increased in size, interscapulothoracic amputation was done. Recovery was prompt, and as yet (three months) there is no evidence of recurrence. Microscopic examination showed the tumor to be a sarcoma, and the author is of opinion that it began in the brachial plexus of nerves. A point in amputation which is advocated by the author is ligation of the artery, then elevation of the hand and arm to return the venous blood, after which ligation of the vein. [A.B.C.]

2.—Diagnosis of Gonorrhoeal Urethritis.—A. H. Gould calls attention to the frequent tetrad arrangement of the gonococci as seen under the microscope, especially in the early stages. The organism decolorizes by Gram's method but absolute proof that the cocci seen are the gonococci can be determined only by culture. In the earliest stages the gonococci are extracellular, but the presence of pus at once gives them an unlimited medium in which to proliferate. They invade or are taken up by the pus cells where they rapidly multiply. The leukocyte at once begins to show degenerative changes, the nuclei increase in size and stain less perfectly. As the organisms multiply they invade the cell nucleus, which may in this way be completely destroyed and the entire cell be disintegrated by the rapidly multiplying germs. With this destruction the clump of gonococci are liberated and are free to attack other cells. When the germs seek the deeper structures in the urethra the pus becomes thin and the subacute stage is reached, this gives way to a more or less chronic condition and shreds are noticed in the urine. The amount of shreds floating in the urine indicates fairly well the amount of pus in suspension. The gonococci are rarely found in the shreds but in the pus cells floating in the urine. [A.B.C.]

3.—Cream.—C. W. Townsend concludes from his analyses that centrifugal cream is probably less desirable for infant feeding than gravity cream. As obtained from dealers it is often far from accurate in percentage. Siphonage is accurate but requires skill. Dipping off the top milk is accurate, if care is used. Pouring off the top is accurate and extremely simple. By this method it is possible to obtain cream of any desired

percentage. The upper 3 oz. gives 22%, the upper 6 oz. 14%, the upper 8 oz. 10%, the upper 12 oz. 8%, and the upper 16 oz. 6%. To ensure perfect accuracy frequent examinations with the Babcock machine are required; but for practical purposes this is not necessary, provided the mixed milk from a well-regulated dairy is obtained. [H.M.]

4.—**Variation in Human Milk.**—P. P. Sharples and E. A. Darling endeavored to collect samples under as uniform conditions as possible, 1 oz. being drawn by the breast-pump after the child had sucked for a few minutes in the morning. One hundred and seventeen analyses show the average composition to be: Fat, 2.91; sugar, 7.01; proteids, 1.34; ash, 0.13; total solids, 11.39; solids not fat, 8.48. There are wide variations from the average in milk from the same individual at different times and from different individuals. The average composition does not vary to any marked extent at different periods of lactation. During the first lactation the milk on the average is weaker in fat and proteids but stronger in sugar than in subsequent lactations. These differences may or may not be due to age. [H.M.]

Medical Record.

April 18, 1903. [Vol. 63, No. 16.]

1. A Report of Final Results in Two Cases of Polyarthrits in Children of the Type First Described by Still, Together with Remarks on Rheumatoid Arthritis. ROYAL WHITMAN.
2. "Eye-strain" in Youth and Its Modern Treatment. AMBROSE L. RANNEY.
3. Tuberculous (Basilar) Cerebrospinal Meningitis and Delusional Insanity Complicating Pulmonary and Laryngeal Tuberculosis. HENRY LEVIEN.
4. Resection of Intestine, with Report of Three Interesting Cases. A. E. ISAACS.

1.—**Polyarthrits in Children.**—R. Whitman reports two cases, differing in some particulars from those described by Still. In one there was complete recovery, of which Still records no instance. He mentions enlargement of the spleen only, yet in both these the liver was enlarged, in one ending in amyloid degeneration. In Still's cases the joints of the fingers and toes were exempt, while the spine was involved at an early period of the disease. In one of these all the small joints were diseased, while in neither was the spine affected. Still mentions slight pitting of the cartilage in one case that came to autopsy, while the writer's examination shows that such erosion is inevitable. The case in which recovery occurred was treated by daily exposure of the naked body to heat and light supplied by numerous electric lights beneath a tent-like covering. The cure was apparently completed by an attack of scarlet fever. The writer classes this disease as an atrophic form of rheumatoid arthritis, considering it as distinct from osteoarthritis or the hypertrophic form of arthritis deformans. It is the common form in early life. The symptoms simulate tuberculosis so closely that diagnosis is impossible until extension to other joints shows the true character. The appearances suggest the effect of a continuous feeble irritation within the joint and a feeble reaction. This indicates the removal of depressing influences, proper nourishment and stimulation of local nutrition. Deformity should be prevented and corrected and there should be local support to relieve painful motion. The cause of the disease is obscure. [H.M.]

2.—**Eye-strain.**—A. L. Ranney emphasizes the statement that too much stress cannot be laid upon the fact that severe types of eye-strain often exist in connection with eyes that have the most acute vision and that cause no apparent discomfort. He cites his own case, in which atropin cycloplegia revealed the cause of terrific headaches, uncontrollable vomiting, and extreme nervous debility after his eyes had been examined by three oculists without discovery of a latent refractive error. He deplors the use of the ophthalmoscope for determination of refractive errors. It is unfortunate that very careless refractive work is constantly done by oculists of international reputation. Some refractive errors enhance the acuteness of vision. It is gross injustice to the patient to omit any measure that may throw light on the diagnosis. He suggests methods by which parents and teachers may test visual acuity and muscle imbalance, and calls professional attention to the diagnostic importance of certain facial expressions and peculiar attitudes that tell of visual perplexities, illustrating these by cuts. No child

should begin education till its eyes are properly fitted for the work. Legislative enactment should compel examination. Test of muscle imbalance should be made as thoroughly as for refractive errors. A knowledge of the effects of eye-strain should be widely disseminated. The modern methods of testing are the only ones that furnish accurate information. [H.M.]

3.—**Tuberculous Cerebrospinal Meningitis.**—H. Levien reports these two cases because meningitis in adults is rather uncommon and because they corroborate the opinion that the disease affects men oftener than women. The symptoms in one case pointed to positive organic lesions in the brain substance, in the other the disorders were apparently only functional. [H.M.]

4.—**Resection of Intestine.**—A. E. Isaacs reports three interesting cases. A man of 52 suffered from an attack of apparent appendicitis. In addition to the symptoms of appendicitis there was absolute constipation. Refusal on the part of the patient delayed operation 24 hours. Laparotomy showed a normal appendix, but a mass of adhering intestines in the right iliac fossa. The origin of the trouble lay in the presence of a band passing apparently from the bladder to some structure in the region of the cecum. The desperate condition prevented this being ascertained definitely. A loop of intestine had slipped under this band, become strangulated and gangrenous. Some 23 inches of the gut was resected, anastomosis accomplished with a Murphy button, which passed on the ninth day. Recovery was complete. The second case was that of a boy of 9 years, who suffered from all the symptoms of acute appendicitis. A mass could be palpated in the region of the appendix. Operation showed a lumbar abscess, which instead of following the psoas muscle or pointing posteriorly, had worked its way forward and pointed in the usual site of an appendiceal abscess. The normal appendix was removed and the wound closed with drainage. The patient did well for three weeks, when he developed all the symptoms of acute intestinal obstruction. The abdomen was opened in the median line, the intestine quickly opened and an artificial anus established. Natural bowel movements being reestablished a third operation was done to close the artificial anus. This was but partially successful, and later a fourth operation was done, several inches of the gut being resected and anastomosis accomplished. The stump of the removed appendix failed to unite, producing a fistula at this situation. A fifth operation was done to effect its obliteration. The patient finally recovered, having been under treatment for nearly six months. The third case was one of strangulated femoral hernia, occurring in a woman of 56. Six inches of gangrenous gut was resected and the patient recovered. [A.B.C.]

New York Medical Journal.

April 11, 1903. [Vol. LXXVII, No. 15.]

1. Intestinal Obstruction. JOHN B. HARVIE.
2. On the Physiologic Action of Silver Sulfoichthyolate. HORATIO C. WOOD, JR.
3. Practical Points on Intubation of the Larynx for Croup, with a Report of 36 Cases. FIELDING LEWIS TAYLOR. (Concluded.)
4. Food and Nutrition in Disease. L. H. WATSON.
5. Methods which Render Some Therapeutic Agents More Palatable. SAMUEL E. EARP.

1.—See *American Medicine*, Vol. IV, No. 18, p. 690.

2.—**Silver Sulfoichthyolate.**—H. C. Wood, Jr., has made some experiments to determine the physiologic action of ichthargan. He finds that it is rapidly precipitated by the alkalies, the chlorids, and the albumens of the body, and that it is therefore unabsorbable as the sulfoichthyolate if given by the mouth. It can be absorbed after its hypodermic administration only with the greatest slowness. He failed to obtain in the rabbit any sign of its action from subcutaneous injection, except locally, with doses reaching as high as 1.4 grams to the kilo of body weight. The injection of ichthargan into the posterior lymph sac of a frog caused motor weakness and finally complete paralysis. This palsy was associated, if the dose was very large, with diminution in the irritability of the motor nerve, but was not entirely dependent on changes in the nerve or muscle, as the experiments show. The paralysis was chiefly central in origin. When injected into a vein there occurred an immediate fall of the blood-pressure which, if the

dose was sufficient, progressed steadily until death. After death the lungs were found filled with a frothy fluid and markedly congested at the bases. [C.A.O.]

3.—Intubation for Croup.—F. L. Taylor gives some practical points on intubation of the larynx for croup and reports 36 cases. In 2 cases the Klebs-Loeffler bacillus could not be found, leaving 34 cases of laryngeal diphtheria with 10 deaths. In 4 cases the patients already had marked evidences of bronchial diphtheria when intubated. He prefers the hard rubber tubes, as they do not become incrustated in spots with calcium carbonate. Some of the dangers mentioned are: Asphyxia from too prolonged attempts to introduce the tube; making a false passage and pushing down false membrane. Sometimes it will be found that the patient can inspire, but that expiration is impeded or impossible. This is due to valvular action of a piece of partially detached membrane at the lower orifice of the tube. In such cases if the tube is suddenly withdrawn, after giving a teaspoonful of brandy to produce cough, the false membrane will be expelled. If this is ineffectual the short O'Dwyer foreign body tubes may be used or tracheotomy may be performed. [C.A.O.]

4.—Food and nutrition in disease is discussed by L. H. Watson. Protein, fats, carbohydrates, mineral salts, etc., are taken up in order. The most important of these is protein, which for the sick is usually selected from the meat foods, milk and eggs, on account of their more perfect digestibility. The carbohydrates act as heat producers and spacers of protein. Bulk for bulk with protein food, they contain much less nourishment, furnish a larger refuse, and are not so easily digested, but they supply fuel to the body and protect it from waste, allowing the albuminoids to build up tissue and furnish secretions. The fuel value of protein and the carbohydrates is about the same. In speaking of milk the author says that when cooked with rice it furnishes the most easily digested food, with the largest amount of nutrients contained in moderate bulk of any combination of foods known to him. [C.A.O.]

5.—Palatable Therapeutic Agents.—S. E. Earp calls attention to some methods which render some therapeutic agents more palatable. To give castor-oil in one dose as a purgative the best method is to put in the bottom of the glass a small quantity of glycerin, then the oil, lastly half an ounce of sherry wine, and take at one draught. This will also apply to a simple dose of codliver-oil. In case either agent is dispensed in quantities an emulsion in which the flavor of cinnamon or gaultheria predominates generally serves the purpose. A glass of soda is a good vehicle for Epsom salts, but the ordinary "soda pop" is better. Chocolate, yerba santa, and licorice in the form of a heavy syrup may be used to disguise quinin, but the author believes that one grain of tannic acid to each three grains of quinin in a vehicle of syrup of tolu is better. Potassium iodid and potassium bromid and salicylic acid may be given in milk, which also prevents gastric irritation. In case copaiba and turpentine are not used in gelatin capsule form an emulsion flavored with gaultheria comes next in order. Equal parts of peppermint water and simple syrup make a good solution for sodium salicylate. If the mouth is flushed quickly with a small quantity of whisky the medicinal oils may be taken immediately afterward and the disagreeable taste is not so perceptible. [C.A.O.]

Medical News.

April 18, 1903. [Vol. 82, No. 16.]

1. Intestinal Indigestion (Dystrypsia). JOHN C. HEMMETER.
2. A Brief Review of Some of the Etiologic Factors in Intestinal Dyspepsia. E. FRANKLIN SMITH.
3. The Rational Treatment of Tetanus: A Report of Successful Treatment by Spinal Subarachnoid Injections of Antitetanic Serum. W. H. LUCKETT.
4. Notes on Systemic Infections by the Staphylococcus Aureus. E. LIBMAN.
5. Itching: Its Occurrence Both as a Concomitant and as a Cure of Disease. EDWARD BENNET BRONSON.
6. The Röntgen Ray: Its Mechanics, Physics, Physiology, and Pathology. EDEN V. DELPHEY.
7. The Congenital Criminal. ROBERT T. IRVINE.

1.—Intestinal Indigestion.—J. C. Hemmeter considers first dystrypsia due to stomach disease. Chymaze in the gastric secretion does not digest food, but accelerates the action of the

ferments of the pancreatic secretion. The most efficient means of counteracting pancreatic insufficiency is to bring about a healthy appetite. The mistake of older experimenters was that they ignored psychic secretion, under which a more effective juice is formed than that secreted under purely chemical stimulation of the food. Psychic secretion may be due to a special ferment in the saliva. The stomach detects the composition of foods, regulating its secretion accordingly, even distinguishing between various organic acids. The writer has discovered a ferment in saliva, which, if added to gastric juice accelerates its digestive power, and proposes the name salivary secretion for it. He limits himself to the discussion of dys-trypsia due to abnormalities in diet. Excess of carbohydrates causing formation of acetic and lactic acids interferes with the alkalinity needed by the pancreatic secretion. This is the most frequent cause of infantile diarrheas. The abnormal peristalsis excited hurries on the jejunal chyme rich in mucin. Catarrhal stools exhibit epithelia and round cells, absent in jejunal stools. The latter are rich in bile pigment, have only slight fecal odor, and are generally acid. Starch may not be demonstrated by Lugol's solution because decomposed by fermentation, not digested. Starch residues signify intestinal disturbance, and starch should be excluded from the diet in quantities graduated by the iodine reaction. Muscle nuclei show insufficient pancreatic secretion. Excessive connective tissue points to abnormal gastric secretion. Treatment is principally dietary, indicated by the stools, together with general hygiene. The author gives a number of drug formulas for special symptoms. [H.M.]

2.—Etiology of Intestinal Dyspepsia.—E. F. Smith discusses the predisposing factors, and among the exciting causes anatomic alterations, deficiency of bile and pancreatic juice, irregularities of diet, abnormal bacterial activity, abnormal gastric chemistry, neurasthenia intestinalis, abnormal substances in the blood, intestinal parasites (exclusive of bacteria), and hyperperistalsis due to motor, sensory or secretory neuroses. [H.M.]

3.—Tetanus Treated by Spinal Subarachnoid Injections of Antitetanic Serum.—W. H. Lockett gives a brief synopsis of various treatments introduced for tetanus, and our present belief as to the pathology of the disease, viz., that the toxin of tetanus appears to have a special action on the cells of the anterior cornua of the gray matter in the spinal cord. He reports a case occurring in a boy of 12, who six days after a blank cartridge pistol wound in the hand developed marked symptoms of tetanus and died, after the ordinary symptomatic treatment, especially with bromids and chloral had been employed. In contrast with this case, two others are reported. A boy of 12 likewise received a blank cartridge pistol wound in the left hand. On the seventh day symptoms of tetanus were manifested, and they became violent. Lumbar puncture was made between the third and fourth lumbar vertebrae, a few drops of the cerebrospinal fluid withdrawn, and 8 cc. (2 drams) of antitetanic serum injected. This was soon followed by cessation of the violent symptoms, which cessation lasted some six hours, when convulsions, etc., returned. On the following day another injection (of 11 cc.) of antitetanic serum was given with a similar result. This treatment was continued, subarachnoid injections being given each day for 12 days, when the patient was considered out of danger. The doses of antitetanic serum ranged from 8 cc. (2 drams) on the first day to 15 cc. (4 drams) on the last day, a total of 92 cc. (23 drams) being given, and a total of 161 drops of cerebrospinal fluid being withdrawn. Another patient, a boy of 10, developed tetanus five days after being cut on the wrist with dirty glass. Daily subarachnoid spinal injections of antitetanic serum were given for five days, when all symptoms abated and recovery was complete. A total of 605 drops of the cerebrospinal fluid was withdrawn and 59 cc. (15 drams) of antitetanic serum injected. The author believes the rational treatment of tetanus lies in the withdrawal of a portion of the toxic cerebrospinal fluid, and the subarachnoid spinal injection of antitetanic serum. [A.B.C.]

4.—Staphylococcus Aureus in the Blood.—E. Libman reports in some detail 23 cases in which he found *Staphylococcus aureus* in the blood during life. Five of the 23 recovered.

In each case which came to postmortem the bacteriologic findings confirmed the findings before death. The relative number of bacteria found appeared to bear no definite relation to the malignancy of the case, this number depending much on the time at which the examination is made. In the series of cases there are a number of osteomyelitis, and this is especially true in those cases in which children were the victims; that is, children with systemic *Staphylococcus aureus* infection are apt to have the bones involved, whereas adults with a similar infection are more apt to have other forms of metastatic lesions. [A.B.C.]

5.—Itching.—E. B. Bronson believes it is the disturbance of the sense of contact which causes itching. It accompanies only those skin diseases in which there are changes in the superficial layer. Like pain, smarting is antipathic to itching and tends to extinguish it. Pruritus associated with vasomotor affections is frequently due to urticaria. In a number of pruriginous diseases hypertrophy of the arrectors is present. Pruritic affections are commoner in the hairy regions than elsewhere. The distinctive feature in eczema is vesiculation in the prickle cell layer, atrophic change, and the essential cause of the itching. At a higher level, as in sudamina, itching is absent. When skin changes occur slowly itching is generally absent. Itching without obvious disease is called *Pruritus essentialis*. In pruritus hiemalis the intermediary may be the motor disturbance. Itching is sometimes a pure neurosis, a symptom of hysteria or neurasthenia. It may be due to suggestion. In pruriginous papular diseases it is not the papule which causes the itching, but *vice versa*. In all pruriginous affections measures directed to the relief of itching are of the first importance. The first case is to avoid irritating contacts. The substitution of another sensation for that of itching is the rationale of many antipruritics used. Menthol, one of the most valuable, substitutes temperature sense. Some remedies, as hot water, relieve through sedative action. Carbolic and bichlorid solutions are anesthetic. General sedatives and motor depressants are sometimes indicated, and in toxic urticarias, antiseptics. In pruritus senilis, faradism, cannabis indica and strychnin are valuable. Bath pruritus may be mitigated by regulation of the temperature and amount of soap, or by adding salt. Heat, carbolic acid, and menthol are often efficient in pruritus vulvæ and a conical plug of bone will sometimes relieve pruritus ani. [H.M.]

6.—The Röntgen Rays.—E. V. Delphy describes in some detail the mechanism of the Röntgen ray apparatus, gives briefly a review of the literature bearing on the physiologic and pathologic effects of the rays—dealing largely in theory. Little that is of value clinically is added. Having reference to the pathologic and physiologic effects, he gives Beck's summary, as follows: (1) The Röntgen ray causes slow degeneration. The connective tissue, the elastic fibers, musculature and the bones are not at all or but slightly affected, and only suffer secondarily to inflammatory action. The first change is a degeneration of the epithelia. There were also localized masses of the cells of the glandular organs, of bloodvessels, of muscles and of connective tissues which show degeneration. This degeneration is both of the cell body and nucleus; (2) as soon as the inflammatory reaction has reached a sufficient degree, there is increased vessel dilation with serous effusion, infiltration of cells and emigration of leukocytes until the structure is lost in a mass of infiltration. [A.B.C.]

7.—The Congenital Criminal.—R. T. Irvine notes that only the physician knows how often moral insanity and epilepsy are associated with high grade intellectuality, and how difficult these forms of mental alienation are to verify. The primary data in the study of the criminal are his ancestry. A predisposition to destroy human life may be due to the mother having contemplated destruction of the child during gestation. The type of a species is more clearly represented in the female, and her greater longevity means a proportionate increase in criminal progeny. Proofs of hereditary predisposition will always be scientifically unsatisfactory. It is a mere matter of probability in a given case. The possibility of improving the race depends on increasing the productivity of the best stock. Brain cells will not proliferate after birth. The

problem is to seek means by which the cells may avoid atrophy or morbid change. [H.M.]

Philadelphia Medical Journal.

April 18, 1903. [Vol. XI, No. 16.]

1. The Syphilitic Nature of Tabes and General Paralysis. DR. LEREDDE.
2. Pulmonary Abscess Producing Dextrocardia: A Case Report. THOMAS L. COLEY.
3. Methods of Röntgen-ray Treatment of Malignant Diseases of the Uterus, Rectum, and Bladder, with Description of Tabes. MARGARET A. CLEAVES.
4. The Surgical Treatment of Tuberculous Peritonitis. D. S. FAIRCHILD.
5. The Operative Treatment of Laryngeal Tuberculosis. LORENZO B. LOCKARD.
6. Pernicious Anemia Following Thyroid Enlargement. V. S. MERRITT.

1.—The Syphilitic Nature of Tabes and General Paralysis.—Leredde believes that the lesions of tabes and general paralysis may be syphilitic in nature, omitting secondary degenerative lesions which are only of syphilitic origin, to which no objection can be made on account of the absence of the usual histologic lesions of syphilis, a fact formerly insisted upon. The meningitis accompanying these lesions, minutely studied in tabes at least, may be found to markedly resemble ordinary syphilitic meningitis, in accord with Nageotte. In many cases of general paralysis, also at autopsy, classic lesions of syphilis, gummas, have been noted, besides the lesions of the disease. Further, lesions of tabes have been found coinciding with gummas of the meninges. If there is any affection of the nervous system, the nature of which can be decided by mercury, that affection is syphilitic in origin. The word recovery in tabes and general paralysis means, for the physician, nothing but arrest of the disease. Numerous cases are quoted which have been reported as recoveries from general paralysis and tabes. The existence of the cases cannot be denied; the only thing left is to attempt to find some other interpretation of them than the conclusions drawn by their writers. Leredde thinks of but one possible diagnosis outside of the diagnosis of true tabes and true general paralysis: syphilitic tabes or abortive tabes, and syphilitic pseudogeneral paralysis or abortive general paralysis. True general paralysis is incurable, pseudogeneral paralysis is not often cured, but recovery is not impossible. As the diagnosis is impossible all cases of general paralysis should be treated from the beginning of the disease with mercury; those of syphilitic origin are curable upon injections of large doses of mercury. [F.C.H.]

2.—Pulmonary Abscess.—T. L. Coley details a case of pulmonary abscess following pneumonia in a farm hand of 24, who was admitted to the Methodist Hospital, cyanosed and pulseless with intensely foul-smelling pus pouring from the mouth and nose; death occurred on the sixteenth day. The case is noteworthy in that the patient worked daily throughout his initial attack of pneumonia, and until a few hours before the rupture of the abscess; on account of the abscess and the complete dextrocardia produced by it; and from the point of view of differential diagnosis. The dextrocardia was readily accounted for by the massive pulmonary abscess. The pressure symptoms produced aphonia, stridor, loss of power in the left arm and a clinical picture similar to that so frequently seen in cases of aortic aneurysm. [F.C.H.]

3.—Röntgen-ray Treatment of Malignant Diseases of the Uterus, Rectum and Bladder.—External applications of the Röntgen ray to malignant growths, approachable by accessible mucous cavities, and especially when the natural course of drainage is such as to prevent, to a very great extent, the danger of systemic absorption, as in the female pelvis, should not be made. From clinical observations in extensive and inoperable malignant growths of the uterus, adnexa and adjacent organs in women, M. A. Cleaves believes that the danger of the establishment of metastases in the liver and peritoneum, as well as a general toxemia, is very great from external applications, and that the approach should be by way of the accessible mucous cavities, just so far as it is possible to devise the means of conveying the Röntgen ray energy within these cavities. The writer describes the tubes which she has so successfully employed for this purpose. [F.C.H.]

4.—**The Surgical Treatment of Tuberculous Peritonitis.**—D. S. Fairchild concludes as follows: If an intraabdominal focus of tuberculosis is diagnosed or is suspected, an abdominal section should be made with the view of efficient treatment; if a chronic tuberculosis of the peritoneum with ascites is diagnosed or believed to exist, laparotomy is indicated as soon as it is found that medical and hygienic treatment has failed; in fibrous tuberculosis of the peritoneum the same course should be pursued, and if cheesy degeneration has not commenced or progressed too far, a certain percentage of recoveries will follow. In acute tuberculous peritonitis with ascites and high temperature, laparotomy is useless. In extensive adhesive tuberculosis with matting of the intestines, laparotomy is useless, and the attempt to separate the adhesions is dangerous in its immediate results. [F.C.H.]

5.—**The Operative Treatment of Laryngeal Tuberculosis.**—L. B. Lockard concludes as follows: The treatment of tuberculous laryngitis usually should be the same as that for tuberculosis of the tongue, bones or skin, complete removal of the affected parts at the earliest possible moment, provided a conscientious trial has been given the more conservative methods. [F.C.H.]

6.—**Pernicious Anemia Following Thyroid Enlargement.**—V. S. Merritt details the case of a married woman 43 years of age, terminating in death. The interesting points are fright as a possible etiologic factor; coexisting goiter, which became less pronounced as the disease progressed, and menstruation again established after two months' cessation. The treatment was Fowler's solution in ascending doses, together with beef extracts. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

EDITORIAL COMMENT

The Dietary of the Laboring Classes in Edinburgh.—Some interesting sociologic data are contained in the report of D. N. Paton, J. C. Dunlop and E. Inglis on the Diet of the Laboring Classes of Edinburgh.¹ Taking as a standard the recognized requirements of an economical diet for an adult (viz., 3,500 calories, consisting of: Proteids, 130 grams, yielding 533 calories; carbohydrates, 800 grams, 2,050 calories; fats, 100 grams, 930 calories), we find that a typical laborer's diet in Edinburgh is deficient, for it has the following composition: Proteids, 107.74; fats, 88.44, and carbohydrates, 479.42, yielding an energy value of 3,228 calories. Such a diet costs 7.29d. (about 15 cents). In this country the statistics of the Department of Agriculture show the following figures among families in the poorest districts of different cities:

	Families.	Grams of proteid.	Caloric value of food.
Chicago	29	119	3,425
Philadelphia	26	109	3,235
New York.....	19	106	3,030

Paton, Dunlop, and Inglis believe that the energy value and the proteid value of the Edinburgh diet, especially the latter, are too small. To improve the dietary of the laboring classes, the following principles should be instilled into them: 1. That a diet of tea and bread, or of tea, bread and butter (the lazy diet) is faulty. 2. That the faults of the tea and bread diet may be corrected by the free use of eggs, meat or other animal food, but this mode of correction is expensive. 3. That these faults may also be corrected by the free use of oatmeal with milk, or of peas or beans, without extra cost. 4. That to correct the faults of a tea and bread diet, either money spent on animal food, or labor spent on the cooking of vegetable food is necessary. If the people have not the money they must give the labor of properly cooking more nutritive food.

¹ Reports from the Laboratory of the Royal College of Physicians of Edinburgh, Vol. viii, 1903.

REVIEW OF LITERATURE

Typhoid Pericarditis.—Gandy and Gouraud¹ report the following case: A woman of 30 entered the hospital on the eighth day of a benign typhoid fever. Examination showed the presence of a distinct pericardial friction, without any enlargement of the area of cardiac dulness. A diagnosis of dry pericarditis was made. The patient's condition steadily improved; and when seen on the morning of the twenty-fifth day of her illness she stated that since the beginning of her illness she had not passed such a good night. Shortly afterward, just as the bed linen had been changed, she uttered a loud cry and fell over dead. No autopsy was permitted, but a puncture of the pericardium was made and 90 cc. of a lemon-yellow, serofibrinous fluid were drawn off. This was centrifuged, and the sediment was found to contain red corpuscles and an almost equal number of lymphocytes, with a few polymorphonuclear cells. An exhaustive study of the history of typhoid pericarditis is appended to this report. The condition is very rare, and presents itself under two forms: that of a fibrinous and that of a purulent pericarditis, the former being the more frequent. Sometimes the pericarditis exists alone, and sometimes it has associated with it endocarditis, myocarditis, or bronchopulmonary lesions. The etiology is as yet not definitely known. The purulent form is due to a secondary infection; while for the fibrinous form the typhoid bacillus is probably responsible. [D.R.]

Hypertrophic Cirrhosis of the Liver With Splenomegaly.—The case reported by Eshner² is that of a young man of 19, presenting jaundice, enlargement of the liver and spleen, and a history of periodic excessive indulgence in alcohol and of chills and fever. There was no enlargement of the axillary, inguinal, supraclavicular, cervical, or epitrochlear glands. Blood examination showed red cells, 4,100,000; leukocytes, 3,000; hemoglobin, 73%. Of the leukocytes there were large mononuclear, 9.2%; small mononuclear, 15.2%; polymorphonuclear, 62.8%; transitional, 3.2%; eosinophile, 2.5%; myelocytes, 4; mast cells, 2.8%. Malarial plasmodia of the quartan type were present but disappeared under quinin injections. The case is considered as one of hypertrophic cirrhosis of the liver with splenomegaly, though it exhibits many of the features of so-called splenic anemia, the symptoms of that disease which are lacking being hemorrhages and ascites. In the absence of urgent or alarming symptoms, splenectomy has not been recommended. [A.G.E.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

REVIEW OF LITERATURE

A Case of Salivary Fistula.—This condition is infrequent but obdurate. No less than 30 different methods have been recommended for its cure, and yet it often becomes necessary in spite of them all to treat the fistula radically by ligating the glandular duct, or even by extirpating the gland itself. A. N. Zimin³ reports a case occurring in a girl 19 years old. The fistula existed since the age of 3 years, and followed a "boil" in the masseter region. The boil led to an ulcer, and the ulcer healed, leaving a dimpled scar with a central opening through which saliva was discharging drop by drop. After futile attempts to cure the fistula with silver nitrate and the paquelin, an operation was performed. By freshening the fistular area and cutting through the cheek into the mouth, an internal fistula was formed, the freshened edges having been united with sutures and the artificial inner tract packed with gauze. However, the wound soon began to suppurate, the sutures were removed, and the original fistula returned to its former state. A second attempt was now made by burning a hole through the cheek with the paquelin and inserting a rubber tube 3-4 millimeters in diameter in this canal. On the eleventh day the tube could be removed. The granulating fistular surface was covered with an ointment of silver nitrate. About four weeks

¹ Gaz des Hôp., March 28, 1903.

² Medicine, March, 1903.

³ Chirurgia, February, 1903.

later the salivary discharge gradually came to a stop, and a cure was thus finally obtained. [L.J.]

Is Rupture of the Aortic Valve an Accident?—This question having arisen in connection with the application under the Workmen's Compensation Act for benefit due to those holding policies payable as compensation for accident was described in the *British Medical Journal* for January 3. Theodore Fisher¹ holds that it would be difficult to prove that rupture occurred in a healthy aortic valve. In the many reports which have been made of such rupture necropsy has in each of the reported cases shown that there was disease of the aortic valves prior to rupture. This disease of the aortic valve, as is well known, may arise in any of the diseases which attack bloodvessels and the endocardium. He states that it is possible for a healthy valve to rupture as the result of severe muscular strain, but he apparently believes it highly improbable. The rupture of the valve almost presupposes a diseased condition of the aorta. [A.B.C.]

Syphilis and Life Insurance.—J. J. G. Brown² thinks the comparative lightness of the disease in connection with insurance work as compared with hospital experience is dependent on closer following of the rules of cleanliness and the prescribed treatment. Mortality is almost entirely limited to the tertiary period, resulting from cerebral or spinal syphilis, or from general paralysis or tabes. It is impossible to say to the end of life that syphilis has been cured. Fatal symptoms may develop after 50 years of abeyance, though tertiary and parasymphilitic manifestations generally show themselves within 12 or 15 years. This suggests an extra loading, nine-tenths of which to be removable at the end of the fifteenth year from infection, provided the health is then good. Conditions predisposing to the development of serious syphilitic symptoms are intercurrent tuberculous disease, immoderate use of stimulants, irregular habits, and infection late in life. Severe tertiary symptoms are more likely to occur when the primary and secondary manifestations were slight. A syphilitic has not a normal longevity and should not be insured at normal rates. If the health is otherwise good, habits steady, if the primary affection occurred at least four years before date of proposal and no secondary symptoms have appeared for a year and there is evidence of thorough treatment, a moderate loading—say five years for a man of 30—would cover the risk. Tertiary symptoms would make the life uninsurable. [H.M.]

Calomel Injections in Leg Ulcers.—A remarkable cure is reported by G. T. Meshtcherski.³ The patient was a man of 61, who had for the past seven years undergone fruitless treatment for a crural ulcer of varicose origin. Elephantiasis complicated the condition. In view of the beneficial influence of calomel on elephantiasis, first noted by Pospelow, this remedy was administered hypodermically in conjunction with tight bandaging and fomentations with 3% boric acid solution. In all, four injections were given, one grain calomel each, according to Veisser's formula. The injections were made with weekly intervals, and the chronic ulcer healed completely at the end of four weeks. The edematous and thickened condition of the leg also disappeared almost entirely. This noteworthy result must be credited to the stimulating influence of calomel on granulations and epithelial cells. [L.J.]

Dilation of Pylorus for Simple Stricture.—H. P. Symonds⁴ reports the case. The patient was a man of 40. He had been in comparatively poor health for a number of years. That the stomach was dilated could be easily ascertained. No tumor could be made out. There was no history of vomiting or of blood; this, together with the length of time which the symptoms had persisted, excluded malignant disease. Operation, however, was deemed justified. The pylorus was found stenosed by a benign growth. This was dilated by picking up a fold of the anterior wall of the stomach and invaginating it through the pyloric opening and causing dilation of this orifice. A tuck or fold of the stomach was then made upon its gastric wall. The portion of the stomach employed in the invaginating and dilating process was included in the tuck or fold. [A.B.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

To What Extent May the Female Genitals be Saved from Mutilation.—J. H. Dowd¹ concludes as follows: Gonorrhoea in the female being curable in at least 95% to 98% of cases, it is only natural to make the bold statement, if the disease is healed rationally and until all danger of infection has been obliterated, the percentages of inflammation in the female genitals should be reduced to a minimum. The argument that the druggist treats three out of five cases of gonorrhoea in the male has no standing, for the reason that they do not stop the discharge in 1 out of 10, the remaining 9 being compelled sooner or later to consult a physician. [F.C.H.]

Immediate Repair of the Soft Parts Following Labor.—C. E. Congdon¹ advocates the immediate repair of lacerations of the cervix, vulva, and vagina, and firmly believes that if the sutures are properly introduced, and the tissues brought into perfect apposition, primary union will almost invariably be secured; if the repair work has been properly executed, the after treatment is of little moment. [F.C.H.]

Clinical Thermometer in the Bladder of a Woman.—This case, seen in consultation, is reported by M. Tixier.² The patient was a woman of 40. The vaginal temperature being desired, the attending physician inserted the thermometer without exposing the patient. When, after a sufficient lapse of time, an attempt was made to remove the thermometer, it could not be found. Examination revealed that it was in the bladder where it caused the patient but little discomfort. After slight dilation of the urethra the thermometer, unbroken, was removed from the bladder by means of forceps. The only explanation of the easy passage of the instrument, which was 8 cm. (3½ inches) long, into the urethra was that an operation two years before for prolapse and cystocele had left the anterior vaginal wall with the meatus unduly prominent. [A.G.E.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

EDITORIAL COMMENT

Substitutes for Salicylic Acid.—The number of organic compounds of salicylic acid which have been put upon the market is so large as to forbid even a casual notice of them all. We shall therefore limit this article to the consideration of those which are employed chiefly for the relief of rheumatism, excluding the antiseptic preparations of salicylic acid and those in which through the union of a more powerful antipyretic, as in salipyrin and saliphenin, the salicylic acid becomes of secondary importance. We shall also omit any consideration of salicin, salol, the oils of wintergreen or of birch and synthetic methyl salicylate, as these are so well known that any note of them is superfluous.

Aspirin.—By far the most important substitute for the ordinary salicylates is aspirin. This substance, which is chemically a diacetyler of salicylic acid, has indeed achieved in the few years in which it has been before the profession such an important place among practical remedies that those who use it, use it almost to the exclusion of the other salicylates. It is impossible to review in detail even a percentage of the literature which has accumulated upon this drug, but as all those who use it are in accord, and as our own experience with it agrees with that of other observers, we shall simply recite the advantages and methods of using this compound. Being practically insoluble in water the powder has little taste, such as there is being that of acetic acid; the unpleasant nauseating taste of the salicylates is entirely absent. On account of its insolubility it has practically no irritant effect upon the stomach, and although we have used it in large doses in a great

¹ British Medical Journal, February 21, 1903.

² Scottish Medical and Surgical Journal, January, 1903.

³ Medizinskoje Obosrenie, lix, No. 1, January, 1903.

⁴ British Medical Journal, February 23, 1903.

¹ Buffalo Medical Journal, January, 1903.

² Lyon Medical, March 22, 1903.

number of cases, we have seen but one case in which it caused any nausea, and we know of no instance in literature of any untoward effects upon the digestion. It was originally asserted that the drug would not produce symptoms of salicylism. This, however, is not strictly true, for although comparatively large amounts of it are well borne we have seen typical symptoms of salicylism produced by small doses. Aspirin is slowly decomposed in the stomach with the liberation of free salicylic acid; in the intestines, however, it is broken up much more rapidly. Hill¹ found the salicylic reaction in the urine within 20 minutes after the ingestion of aspirin. According to this same experimenter the reaction persists for 20 hours after a single dose of 15 grains. Aspirin may be used in almost every condition in which sodium salicylate has been found useful. It is of equal merit with the salicylates in acute articular rheumatism and various forms of muscular and subacute rheumatism as lumbago and in the treatment of rheumatic neuralgia, as sciatica. Like the salicylates it is of less value in gouty and gonorrhoeal rheumatism than in true rheumatism. It always exerts some antipyretic effect, but when this is manifested in a decided manner the result should be considered as a demand for greater care in the use of the drug. It is best administered in the gelatin capsules, and in most cases may be given in doses of 5 to 15 grains three or four times a day or as often as may be necessary. Nevertheless, there are cases in which it produces untoward effects—cardiac weakness and even collapse, and sometimes these symptoms follow the use of comparatively small doses. This is especially apt to be the case in depressing infections, as scarlatina and influenza. Care and caution must therefore be observed in every instance, and full doses should never be given until the susceptibility of the individual has been ascertained.

Mesotan.—Mesotan, the methyloxymethylester of salicylic acid, is a clear, yellowish fluid. It is used by dermal absorption. According to Reichmann,² a weak salicylic reaction occurs in the urine within a half hour after painting the skin with this drug. That enough of it is absorbed through the skin to have an effect is shown by the results which he has achieved in various rheumatic and febrile conditions. For practical use it may be diluted by the addition of 10% to 20% of either olive or castor-oil. Roeder³ has also used it pure. Reichmann believes that there is a local as well as a systemic effect and advises therefore the painting of the preparation directly over the affected part. Floret⁴ has found it especially useful in muscular and aponeurotic rheumatism and also in cases of rheumatic neuritis, including torticollis and sciatica. It is usually advised that the application should be covered with some impenetrable covering, as parchment, paper or oiled silk, which should be allowed to remain in place for two days. According to Roeder, however, this is unnecessary so far as the therapeutic effects are concerned, although some sort of covering is desirable as a protection to the parts. The quantity of mesotan employed at a single application varies from 6 to 14 cubic cm. (1 to 2 drams).

Ulmaren.—Ulmaren, which is recommended especially as a substitute for oil of wintergreen and methyl salicylate, is a mixture of ethyl and amyl salicylates. It is an orange-colored fluid with a faint odor recalling that of salol, boiling point 237 to 240, soluble in alcohol and insoluble in water. It represents, according to Hibert,⁵ 75% of salicylic acid. Animal experimentation⁶ showed that in moderate dose it is well taken, but if given in large doses by the mouth it causes in the dog vomiting and purging and in the rabbit a dose of 0.07 gm. per kilo intraperitoneally injected caused death from asphyxia. It is recommended to be used as an external application

in rheumatic neuralgia diseases as well as in gout, either to be painted on the part or used in the form of an ointment made up with lanolin, in which case it should be present in the proportion of 30%. After epidermatic application the salicylic reaction may be demonstrated in the urine in three hours and lasts for three days.

Salophen.—Salophen is closely allied to salol. It differs from the latter, however, in that the carbolic acid it contains is so bound up in an organic radical as to be practically nontoxic. It is insoluble in water but soluble in alkaline solutions as shown by Sieben.¹ In the intestines it is broken up into its constituent parts, paramidophenol and salicylic acid, liberating about 50% of each. It has been extensively employed in various rheumatic and neuralgic conditions with good results. Like salol, however, it finds its chief value in chronic types of the disease being generally considered less useful in acute rheumatism than the other salicylates. Audebert² has found it useful in the after-pains of parturient women. Jacobi³ has found it of marked service in influenza, especially of a nervous type. It has also been used as an intestinal antiseptic. It may be given in doses of 15 to 30 grains, two or three times a day. Ghetti⁴ has obtained good results in sciatica by the injection into the gluteal muscles of 10% solution in sterile alkaline water.

Salacetol.—This is another substitute for salol; in it the toxic phenol has been replaced by an acetone radical. It does not seem to have achieved so much popularity as salophen. The dose is 30 to 45 grains.

REVIEW OF LITERATURE

Aconite the Toxic Agent in Aino Arrow-poison.—Anno Noki is the arrow-poison used by the Ainu, a tribe of about 17,000 inhabiting Yezo, an island belonging to Japan. Very little is known concerning this poison. Owing to a Japanese law forbidding its preparation, it can be made only surreptitiously and obtained only with great difficulty. Dr. H. M. Hiller, during his recent travels in the East, procured a fresh specimen, which he presented to Dr. S. Weir Mitchell, from whom Dr. E. T. Reichert⁵ obtained it for study. The specimen is in the form of a short cylinder with rounded ends, 35 mm. long and 26 mm. in diameter, supported on a stick 150 mm. long. When fresh, it weighed about 50 grams. When rubbed up with water, a gelatinous mixture was formed which gave the starch reaction with iodine. Both the aqueous and the aqueous-alcoholic filtrates were poisonous. It was found by Eldredge, of Yokohama, that the killing power of this poison depends upon aconite; and experiments made by Reichert upon dogs leave no doubt that the toxic agent is aconite. The symptoms caused by subcutaneously injecting an aqueous or an aqueous-alcoholic filtrate did not differ in any important particular from those following the injection of the official tincture of aconite root. Reichert found no evidence of the presence of tobacco, capsicum, venom, or any other poison than aconite. [D.R.]

Atropin Hypodermically in Spasmodic Torticollis.—C. S. Potts⁶ reports the cure of a case of spasmodic torticollis by means of hypodermic injections of atropin. The patient was 30 years of age and had been afflicted for a year. The injection was made directly into the affected sternocleidomastoid. It at first consisted of .3 mg. ($\frac{2}{100}$ grain) and was made daily into the muscle and into the back of the neck alternately. The dose was gradually increased until at the end of three weeks 1 mg. ($\frac{1}{100}$ grain) was used. Throughout this period electricity was also given. The patient was comparatively well for four months after this. There was then some return. Treatment was therefore recommenced and was continued, though not daily, for three months longer. The patient was then able to return to work. More than 1 mg. ($\frac{1}{100}$ grain) could not be tolerated. [D.R.]

¹ Therapeutic Gazette, 1903, Vol. xxvi, p. 709.

² Therapie der Gegenwart, 1902.

³ Münchener med. Wochen., 1902, No. 50.

⁴ Medicinische Woche., 1902, 42.

⁵ Thesis, Paris, 1902.

⁶ Therapeutische Monatshefte, 1903, 17, p. 97.

¹ Therap. Monatsh., January, 1892.

² Arch. de Med. de Toulouse, February 1, 1901.

³ Medical News, December 15, 1900.

⁴ Gaz. d. Ospedali, 1900.

⁵ Univ. of Penna. Medical Bulletin, April, 1903.

OPHTHALMOLOGY

WALTER L. PYLE

EDITORIAL COMMENT

Misuse of the Word Lorgnette.—With due deference to the authority of common usage, there seems good reason for believing that the ordinary interpretation of the word lorgnette, as used in American ophthalmic practice, is not correct. The word is derived from the French *lorgnier*, to spy or peep; perhaps allied to *loren* of German dialect. In all the standard French dictionaries the word *lorgnette* is distinctly defined as an operaglass or a spyglass, while the word *lorgnon* is used to indicate an eyeglass or eyeglasses mounted on a handle, or, to be more explicit, a quizzing glass. *Lorgnon à deux branches* is a double eyeglass. There is, however, the French term *lorgnette de spectacle*. Worcester defines lorgnette as an operaglass, giving Spiers as the authority. The last edition of Webster interprets lorgnette as an operaglass; *pl.* elaborate double eyeglasses. The Century dictionary defines lorgnette first as an operaglass, but gives a second definition as an equivalent to lorgnon. Lorgnon is described as an eyeglass or a pair of eyeglasses shutting into a frame, which, when in use, serves as a handle intended for examining objects at a little distance. This is a perfect description of the common American acceptance of the word lorgnette.

"She raises to her eyes of blue
Her lorgnon, as she looks at you."
—*The Atlantic*, lxiii, 649.

It is also stated in the Century that lorgnon is sometimes used synonymously with operaglass or lorgnette. The definitions of lorgnette in the Standard dictionary are: 1. A pair of eyeglasses carried on a long ornamental handle, into which glasses shut when not in use. 2. An operaglass, especially one with a long handle. Lorgnon is made synonymous with lorgnette and is also defined as a monocle.

The Ocular Signs of Hysteria.—Among the ocular affections observed in hysteria are disorders of accommodation, anomalies of convergence, profound asthenopia, disturbances of the external ocular muscles, polyopia, monocular diplopia, micropsia, megalopsia, hemianopsia, central scotoma, and monolateral blindness. As a rule the pupillary reflexes are preserved, an important point in differential diagnosis. Disorders of sensation, such as the so-called "islands of anesthesia in the skin, and anesthesia of the mucous membranes," particularly of the pharynx and conjunctiva, are also important distinguishing associate symptoms. The study of the visual fields likely affords the greatest opportunity for accurate diagnosis. A common phenomenon is concentric, or almost concentric, contraction, often modified by exciting the skin as by pin-pricks. Sometimes continuous irritation of the skin will be followed by a marked restoration of the fields. Associated with the contraction is often found dyschromatopsia, with perhaps inversion of the fields for colors. In such cases the fields for red and green may be distinctly larger than that for blue. Recently Greef and others have called attention to the tubular form of the visual fields in hysteria, and insist on the importance of testing for this phenomenon in suspected cases. In ordinary projection of the visual fields on perimetric charts, the farther the fixation point is from the eye the larger will be the field. It is now affirmed that in hysterical patients the outlines of the fields on the chart may have nearly the same dimensions whether taken with a standard perimeter or at several times the usual perimetric distance, but of course still within the range of distinct vision. Repeated observations of the tubular fields are being reported, and it is likely that they may be added authoritatively to the other significant ocular signs of hysteria.

Photographing the Ocular Fundus.—The difficulties of photographing the intraocular picture are many, and heretofore efforts in this direction have met with little success. The retina must be illumined from without through the small pupillary aperture, and the rays of light must traverse all the media twice. Again, the dark red of the ocular fundus is a very poor photographic color, and the photograph must be taken almost instantaneously. However, Dimmer has recently exhibited at Gratz some very satisfactory photographs of both normal and diseased eye-grounds. One-half of the pupil was utilized for illumination with a special mirror covering only that half, while through the other half a photograph of the corresponding side of the retina was made. The pupil was dilated *ad maximum* and the patient was instructed to fix one eye upon a bright point while the camera was directed toward its fellow.

Division of the Anterior Ciliary Arteries in Chronic Simple Glaucoma.—In cases of chronic glaucoma in which there is greatly diminished vision and increase of tension, but no acute symptoms, it is generally supposed that the condition is due either to closure of the canal of Schlemm or to an increased secretion from ciliary congestion, either active or passive. The condition is so desperate that some vigorous treatment is indicated. After 20 years' experience in the treatment of these cases H. B. Chandler¹ is of the opinion that very little benefit is derived from iridectomy. He believes that the ultimate results are the same whether or not this operation is performed, and in fact he has personally observed equal loss of vision in several cases in which one eye was operated on and the other left untouched. In these doubtful cases for the past two years he has divided the anterior ciliary arteries before they perforate the sclera and in every instance satisfactory results have followed. Tension has been lowered, vision improved, and pain when present relieved. In comment on this procedure Standish remarks that in the cases so treated that he has seen there was not so marked dilation of the pupil as there was increase of tension. The latter was diminished in fifteen minutes and there was instant relief of pain. While not committing himself as to the ultimate outcome of these cases, Standish is profoundly impressed by the immediate results of the operation and adds that in all events hereafter in hopeless cases of glaucoma ordinarily indicating such a radical procedure as enucleation he shall always first resort to division of the ciliary arteries.

The Wernicke Hemianopic Pupillary Reaction.—According to Vossius,² the leading ophthalmologists are about equally divided in their belief of Wernicke's teaching relative to the diagnostic import of certain pupillary phenomena. Some deny the existence of the hemianopic reaction, and others the possibility of producing it. The examination should be made in a dark room with the patient's eye fixed on an object 5 or 6 meters distant. Drs. v. Fragstein and Kemper, of Wiesbaden, Germany, have devised an instrument to facilitate the examination of pupillary reflexes, and Kipp has recently reported³ its successful employment in eliciting the Wernicke sign in an interesting case of unilateral hemianopia following head injury, in which he believed that the left optic tract had been torn or otherwise injured, and that the left optic nerve had been torn or compressed in the optic foramen, perhaps by fracture of the bone, or that the chiasm was torn in the median line. Vossius makes a plea for more careful observation and for the publication of every case in which the hemianopic inaction or rather the hemianopic pupillary reaction is observed. Reports of such observations are very rare in medical literature, due partly to careless or hurried

¹Trans. American Ophthalmological Society, Vol. ix, 1902, p. 461.

²Ueber die hemianopische Pupillenstarre, Halle, 1901.

³Trans. American Ophthalmological Society, Vol. ix, 1902, p. 678.

examination, but largely, as pointed out by Kipp, to the infrequency of the fundamental causal condition—basal affection of the chiasm and of the optic tracts, and complete interruption of the conductivity.

Arthritis Accompanying Gonorrhoeal Conjunctivitis in the Newborn.—We are indebted to R. Clement Lucas¹ for the recognition of joint-complications associated with ophthalmia neonatorum. His first report, in 1885, was greatly criticised, and suggestions were freely made that his case might have been one of epiphysitis or syphilitic synovitis. With the exception of a case by R. G. Fendick, no parallel case was recorded in Great Britain for 13 years. When in 1899 Lucas again introduced the subject a search through European medical literature had resulted in the discovery of only 23 cases. Since 1890 A. E. Garrod, J. Mitchell Bruce, Sydney Stephenson, and L. Vernon-Jones have called attention to the joint affections complicating ophthalmia neonatorum, and quite recently C. O. Hawthorne² reports a case confirming the results of the earlier observations, more especially as regards the possibly quiet nature of the arthritis and the prompt and thorough restoration of the efficiency of the affected joints. Unfortunately there was no bacteriologic examination in this case, although there was positive medical testimony that both father and mother had been infected with gonorrhoea shortly before the child was born, and the child began to suffer purulent ophthalmia on the second day. It may be added, however, that in several other instances on record there was undoubted bacteriologic diagnosis of gonococcus infection in both the conjunctival discharge and the synovial effusion. In this connection Lucas defines two varieties of arthritis, viz.: (1) A very acute form with features suggesting a tendency to suppuration, and (2) a milder form accompanied by a great deal of effusion and pain on movement, but with little or no surface redness. Hawthorne's case adapts itself exactly to this latter form. The promptness and completeness of the restoration of the joints to normal is in pleasing contrast to the obstinate nature of the ordinary gonorrhoeal arthritis. The explanation is doubtless to be found in the comparative ease with which the conjunctival discharge may be checked, and as noted by Hawthorne, this fact lends emphasis to the statement that the cure of the urethral or vaginal discharge is of first importance in treating cases of gonorrhoeal arthritis.

REVIEW OF LITERATURE.

Permanent Left Hemianopia Following Puerperal Eclampsia.—Woods³ reports a case of this nature in a woman of 33, in good health save for the ocular condition and with perfect central vision in each eye. He believes that the poisonous substance in the circulation in eclampsia may produce thrombi of the smaller vessels, lead to areas of necrosis, and thus bring about permanent defect. Profound transient blindness is the rule in cases of eclampsia. In such cases there is no organic change, the effects cease with the elimination of the poison, but in a few cases thrombosis destroys a limited area, and if this area happens to be a part of the cerebrum having important function there is irreparable loss of that function, as in the case reported.

An Interesting Case of High Astigmatism.—Millikin⁴ reports a case of mixed astigmatism, in which during 11 years of observation there was an increase in the right eye from a total of 17 D. to 26.5 D., and in the left from a total of 10 D. to 14.5 D., the vision after each correction being $\frac{5}{6}$ in the right and nearly $\frac{5}{6}$ in the left eye. During this period the axis in the right eye changed from 90° to 100°. There were no gross pathologic conditions in either eye-ground, and the patient was able to use his eyes without discomfort at close work until five years ago,

¹ British Medical Journal, 1885, i, 429; ii, 57, 699, 773.

² Reports of the Society for the Study of Children, Vol. II, London, 1902.

³ Trans. American Ophthalmological Society, Vol. IX, 1902, p. 659.

⁴ Trans. American Ophthalmological Society, Vol. IX, 1902, p. 657.

in the incessant visual strain of bookkeeping. He is very careful to keep his lens frames accurately adjusted, and for his presbyopia he uses convex lenses in eyeglass frames to wear over his distance lenses.

Trachoma in Egypt.—The following is an abstract of Dr. Mohammed Eloni Bey's conclusions:¹ (1) Granular ophthalmia is diminishing in Egypt; (2) three forms of trachoma are to be recognized—the typical granulomatous, the papillogranulomatous, and the simple papillary (false granulations); (3) the last named is the only one which leaves no stigmata; (4) none of these is connected with purulent ophthalmia, but they may be related to tuberculosis; (5) they are propagated by flies, dust, and uncleanness; (6) they are only contagious in the secreting stage; (7) they may be contracted at any age, but half the cases occur between the ages of 1 and 3 years; (8) they should be treated at once, and the eyes of all children in Egypt should be inspected half-yearly between the ages of 1 and 5.

Paraffin Injections After Enucleation of the Eyeball.—As there are on record cases in which after the injection of paraffin into the tissues the patient died from embolism of the pulmonary artery, and others in which sight was lost through the formation of an embolism in the central artery of the retina, it was subsequently suggested that in order to avoid these risks the paraffin should be injected into the capsule of Tenon after the eyeball had been removed. Ramsay² reports great cosmetic value with this method in 22 cases, and describes the operation as follows: The patient having been placed fully under the influence of chloroform the eyelids are separated and kept apart by a spring speculum. The conjunctiva is divided as close as possible to the corneal margin, each rectus muscle is caught up on a strabismus hook and sutured to the overlying conjunctiva with a strand of catgut, the tendons of the recti muscles are cut at their insertion into the sclerotic, and thereafter the operation for the removal of the eyeball is completed in the ordinary manner. If adrenalin chlorid solution be freely used the amount of bleeding is very slight, and the hemorrhage is easily stopped by douching the socket with hot sterilized water. The capsule of Tenon is packed with gauze till a strong black silk purse suture has been passed round the conjunctival margin, and then, the packing being removed, the melted paraffin is injected with a carefully sterilized glass syringe, the capsule being opened to its utmost capacity by holding the recti muscles on the stretch by means of the four catgut sutures and filled to overflowing. The purse suture is then tightened (care being taken to hold the patient's head steady and to relax the tension on the recti muscles) and is securely fixed by a double knot, and the catgut sutures are tied, the superior rectus muscle being approximated to the inferior and the internal to the external. The paraffin is thus induced to mold itself in the socket and to form a stump, to which the divided muscles readily attach themselves. The excess is wiped away, and after the conjunctival surface has been carefully bathed with boric solution a compress and bandage are applied. This operation is followed by very little inflammatory reaction and, as a rule, causes the patient hardly any more discomfort than simple enucleation does. The purse suture is kept in place for a fortnight, and when it is removed at the end of that time there will be found over the freely movable paraffin stump a clean, nondischarging surface of conjunctiva. A week later an artificial eye can be adjusted, the ordinary shell proving, as a rule, quite satisfactory, though sometimes better results may be obtained from the use of the form recommended by Snellen. Care needs to be taken that this is not too large, otherwise the paraffin stump will move behind the prosthesis. To insure success two points require special attention: First, the operation must be carried out with every precaution against sepsis, and so it must not be attempted in cases where the eyeball is in a state of active suppuration; and, secondly, the sutures must hold the conjunctiva in accurate position over the paraffin.

The Conjunctival Flap in Cataract Extraction.—Wilson and Miles,³ after an extensive bibliographic and clinical study of this subject, conclude that notwithstanding the arguments to

¹ British Medical Journal, 1903, i, 263.

² Lancet, 1903, i, 299.

³ Trans. American Ophthalmological Society, Vol. IX, 1902, p. 503.

the contrary the conjunctival flap deserves consideration, because it exerts a very positive and easily demonstrated influence in preventing the reopening of the wound. Although the iris prolapses as often, if not a little oftener, it does not fall outside of the wound. The chief disadvantages are the ensuing hemorrhage and the increased difficulty in performing iridectomy, and in removing loose masses of cortical matter after extraction of the cataract proper.

Postoperative History of 50 Cases of Simple Chronic Glaucoma.—C. S. Bull¹ offers the following brief review of his observations after iridectomy on 94 eyes. In 7 cases under observation for a period ranging from 15 months to 11 years the fields remained as they were at the time of operation. In 6 of these cases the vision grew slowly worse, and in 1 case the vision was somewhat improved. In 5 cases the vision remained as it was at the time of operation, or improved, while the fields grew narrower. Age, in itself, did not seem to exercise any definitely bad effects, for some of the most satisfactory results occurred in patients past 70 years. The best results as to ultimate vision occurred in the cases in which the central vision was best and the fields were the least encroached upon at the time of operation; or, in other words, as soon as the diagnosis was established. Bull also believes that better results are obtained by simultaneous operation upon both eyes when bilateral affection is undoubtedly present, and in all cases early operations are the most effective.

The Cause of Sympathetic Ocular Disturbance.—After describing the lesions in a series of eyes which produced various types of so-called sympathetic disturbance in the fellow eye, de Schweinitz and Shumway² comment on the failure of the theories of ciliary reflex and direct bacterial migration to satisfactorily explain the phenomena, and remark that it is possible that future investigations will confirm a recent theory that not the microorganisms but their metabolic products are the etiologic factors in these cases, or, in other words, that a toxin is liberated by them which acts as the exciting agent. Panas believes that these cases of sympathetic ophthalmitis furnish examples of autoinfection, not in the sense of a migratory ophthalmitis, but, as Hubbell has said, "in the sense that the uveal tract of the sound eye, by reason of a lowering of its vital tone through the extreme reflex and vasomotor disturbances, kept up by a foreign body in or injury to the other eye, becomes truly poisoned or infected by materials in the general circulation to the extent of inducing a most obstinate and uncontrollable inflammation." The authors point out that these observers do not entirely escape from the reflex theory, or sympathetic theory, which in our day of pathologic research does not seem to be a scientific one. They conclude that the best that can be said at the present time is that an eye so wounded that a plastic iridocyclitis or uveitis appears sometimes sets up in the opposite eye an analogous inflammation, to which we give the name sympathetic ophthalmitis, and that in all probability this depends upon an infection of the so-called sympathizing eye by some form of bacteria or some form of toxin which they liberate, but that sometimes exactly analogous lesions will produce only an irritation which promptly disappears on removal of the originally injured eye, and disappears, moreover, without leaving a trace of organic change, and that it would further seem that some undiscovered, perhaps constitutional, perhaps local, condition determines on the one hand the inflammation and on the other hand the temporary so-called irritation.

Ligation of the Canaliculi to Prevent Infection.—Buller³ advocates ligation of the canaliculi before operation on cases in which infection through the tear-passages is feared. He also recalls cases in which continuous infection of corneal lesions has been prevented by this means. He passes a No. 2 iron-dyed silk ligature around the canal a little to the inner side of the puncta, tying it as tightly as the silk will allow. Vision allowed by a stouter thread might cause it to cut through the tissues. Perfect occlusion can be effected for some days without impairment of continuity. After the removal of the ligatures, in one instance after two weeks, there was no dif-

ficulty in passing a small probe into the sac. The slight swelling and reaction caused by the ligature are of little importance, and rather increase the desired effect.

Concerning Scintillating Scotoma and Migraine.—Jolly¹ when 9 years of age lost an eye by an accident, and since then he has been subject to attacks of scintillating scotoma and migraine. He made careful observations both of his own condition and that of a large number of other patients. The attacks usually occurred after fatigue, long reading and hunger. They occurred once or twice a month, and occasionally only once every three months. A premonitory symptom of an oncoming attack was a desire to rub the eyes, which, however, gave no relief. The attack was followed by headache and at times accompanied by vertigo, nausea and aphasia. The headache was usually on the side opposite to the affected eye. Jolly discusses the etiology of the scotoma. He concludes that the hemianoptic form of scintillating scotoma originates in the optic tract or in the region of the external geniculate body. The binocular variety originates in the neighborhood of the optic chiasm, while the purely one-eyed scotoma is caused by a defect in the optic nerve or in the retina. He offers no treatment for this condition, yet he believes that since the origin of the trouble has been determined a proper treatment will soon be forthcoming. [W.E.R.]

The Action of Radium Rays on the Eye.—The radium rays make all the layers of the eye phosphorescent, thus producing a light which seems to fill the entire visual field. The Röntgen rays, on the other hand, must impinge directly on the retina. Javal and Curie² have made numerous studies with a very active radium salt, placing it into a covered glass vessel, and this into a dense pasteboard box through which no ordinary light could pass. Two absolutely blind men, one as the result of optic nerve atrophy, the other through glaucoma, did not perceive the presence of the light at all. A third individual, afflicted with prolapse of the retina, retained light perception in a small portion of his visual field. When exposed to the radium rays he announced at once the appearance of a light and precisely in that part of his visual field which corresponded to the inviolate portions of his retina. A fourth individual, blinded by ophthalmia neonatorum, had thick corneal scars, form perception was completely lost, color perception was present to a slight degree. Exposed to the radium rays he at once noticed a lighting up of his visual field, even after the eye was covered with both hands; were it possible to make his cornea transparent he could be given perfectly satisfactory vision. In a fifth case the eye had become glaucomatous after an iridectomy, and all form perception was lost, light perception was retained; later the lens became cataractous, and light perception also failed. A consultant blaming the light blindness on the cataract, wanted to operate. Knowing that the sensitive retina would have perceived the approach of the radium light, we could inform him that the removal of the cataract would not be of the least service in this case. [E.L.]

Retinal Arteriosclerosis.—Beard³ speaks of the distribution and accessibility to inspection of the retinal vessels and their importance in the study of certain brain disorders. The ophthalmoscopic evidences of arteriosclerosis are considered in detail. In speaking of the condition that has been named, embolism of the central retinal artery, Beard states that true embolism of that artery is an exceedingly rare condition, Haab having found 12 cases diagnosed among 60,000 patients. Of these 12 only 2 were found to be undoubted emboli. A case of spastic ischemia of the retina, occurring in a physician, is mentioned. In connection with thrombosis of the choroid, attention is called to a condition that Beard believes has never before been mentioned. This is a peculiar pigmented spot or scar that always remains at the site of thrombosis. The outline is either round or quite irregularly oval and the pigment is arranged in whorls through which the white of the sclera shows. The appearance suggests that of knots in pine boards. Active thrombosis and one or more of these old scars have been seen together in the same eye. [A.G.E.]

¹ Trans. Ophthalmological Society, Vol. ix, 1902, p. 429.

² Proceedings of the Pathological Society of Philadelphia, 1902.

³ Trans. American Ophthalmological Society, 1902, p. 633.

¹ Berliner klinische Wochenschrift, October 27, 1902.

² Bulletin de l'Académie de Médecine, 1902, Vol. xlvii, p. 478.

³ Chicago Medical Recorder, January, 1903.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 18, 1903:

SMALLPOX—UNITED STATES.			Cases	Deaths
Alabama:	Mobile.....	Apr. 4-11.....	2	
California:	San Francisco.....	Mar. 29-Apr. 5.....	10	
Colorado:	Denver.....	Mar. 28-Apr. 4.....	27	
Florida:	De Soto County.....	Apr. 4-11.....	28	
	Duval County.....	Apr. 4-11.....	6	
	Jacksonville Inc'd.....	Mar. 4-Apr. 15.....	30	
Georgia:	Lumpkin.....	Apr. 7.....	6	
Illinois:	Belleville.....	Apr. 4-11.....	1	
	Chicago.....	Mar. 28-Apr. 11.....	37	3
	Galesburg.....	Apr. 4-11.....	2	
Indiana:	Evansville.....	Apr. 4-11.....	4	
	Indianapolis.....	Apr. 4-11.....	4	
Kansas:	Wichita.....	Apr. 4-11.....	5	
Louisiana:	New Orleans.....	Apr. 4-11.....	5	2
			2	Imported.
Maine:	Biddeford.....	Apr. 4-11.....	1	
Maryland:	Baltimore.....	Apr. 4-11.....	1	1
Massachusetts:	Fall River.....	Apr. 4-11.....	1	
	Lowell.....	Apr. 4-11.....	3	
	Northampton.....	Apr. 4-11.....	1	
Michigan:	Ann Arbor.....	Apr. 4-11.....	1	
	Detroit.....	Apr. 4-11.....	7	
	Grand Rapids.....	Apr. 4-11.....	4	
	Port Huron.....	Apr. 4-11.....	1	
Mississippi:	Natchez.....	Apr. 4-11.....	1	
Missouri:	Kansas City.....	Apr. 5-12.....	2	
	St. Louis.....	Apr. 5-12.....	5	
Nebraska:	Omaha.....	Apr. 4-11.....	2	
New Hampshire:	Manchester.....	Apr. 4-11.....	7	
	Nashua.....	Apr. 4-11.....	5	
New Jersey:	Newark.....	Apr. 4-11.....	1	
New York:	Binghamton.....	Mar. 28-Apr. 4.....	1	Imp't'd.
	Buffalo.....	Apr. 4-11.....	2	
	Rochester.....	Mar. 31-Apr. 14.....	16	1
Ohio:	Dayton.....	Apr. 4-11.....	3	
Pennsylvania:	Altoona.....	Mar. 28-Apr. 11.....	5	
	Butler.....	Apr. 4-11.....	1	
	Carbondale.....	Mar. 31-Apr. 7.....	1	
	Johnstown.....	Apr. 4-11.....	1	
	Philadelphia.....	Mar. 28-Apr. 11.....	43	7
	Pittsburg.....	Apr. 4-11.....	29	3
			2	Imported.
Tennessee:	Williamsport.....	Apr. 4-11.....	1	
	Memphis.....	Mar. 28-Apr. 11.....	13	
	Nashville.....	Mar. 28-Apr. 4.....	2	
Utah:	Salt Lake City.....	Mar. 28-Apr. 11.....	17	
Wisconsin:	Milwaukee.....	Mar. 28-Apr. 11.....	3	

SMALLPOX—FOREIGN.			Cases	Deaths
Austria:	Prague.....	Mar. 14-28.....	13	
Belgium:	Antwerp.....	Mar. 14-21.....	2	1
	Brussels.....	Mar. 14-28.....	6	
Brazil:	Rio de Janeiro.....	Mar. 6-13.....	5	
Canary Islands:	Las Palmas.....	Mar. 7-21.....	44	
Colombia:	Barranquilla.....	Mar. 15-22.....	2	
France:	Roubaix.....	Mar. 1-31.....	1	
Great Britain:	Dublin.....	Mar. 14-28.....	33	1
	Hebburn-on-Tyne.....	Mar. 14-21.....	1	
	Leeds.....	Mar. 14-28.....	26	
	Liverpool.....	To Mar. 28.....	68	7
	London.....	Mar. 21-28.....	5	
	Manchester.....	Mar. 21-28.....	18	1
	New Castle-on-Tyne.....	Mar. 14-21.....	2	
	Nottingham.....	Mar. 7-28.....	11	
	Sheffield.....	Mar. 7-21.....	2	
	Walker-on-Tyne.....	Mar. 14-21.....	4	
	Wallsend-on-Tyne.....	Mar. 14-21.....	2	
India:	Bombay.....	Mar. 3-17.....	157	
	Calcutta.....	Feb. 28-Mar. 14.....	1	
	Madras.....	Feb. 28-Mar. 6.....	7	1
Mexico:	City of Mexico.....	Mar. 22-29.....	7	4
Netherlands:	Flushing.....	Mar. 21-28.....	1	
Russia:	Moscow.....	Mar. 14-21.....	4	1
	Odessa.....	Mar. 14-21.....	6	1
	St. Petersburg.....	Mar. 14-28.....	169	9
	Warsaw.....	Mar. 14-21.....	3	3
Turkey:	Alexandrette.....	Mar. 14-21.....	3	1
	Constantinople.....	Mar. 15-22.....	1	
	Smyrna.....	Mar. 1-8.....	1	

YELLOW FEVER.			Cases	Deaths
Brazil:	Rio de Janeiro.....	Mar. 6-13.....	38	
Colombia:	Panama.....	Mar. 26-Apr. 2.....	4	1
Ecuador:	Guayaquil.....	Mar. 14-21.....	4	4
Mexico:	Vera Cruz.....	Mar. 28-Apr. 11.....	12	2

CHOLERA—INSULAR.			Cases	Deaths
Philippines:	Provinces.....	Feb. 14-21.....	172	117
		Not previously reported	853	756

CHOLERA—FOREIGN.			Cases	Deaths
India:	Calcutta.....	Feb. 28-Mar. 14.....	159	

PLAGUE—INSULAR.			Cases	Deaths
Philippines:	Manila.....	Feb. 14-21.....	2	

PLAGUE—FOREIGN.			Cases	Deaths
Brazil:	Rio de Janeiro.....	Mar. 6-13.....	1	
China:	Hongkong.....	Feb. 14-28.....	15	15
India:	Bombay.....	Mar. 3-17.....	2,800	
	Calcutta.....	Feb. 28-Mar. 14.....	1,574	
	Karachi.....	Mar. 8-15.....	199	169
Mexico:	Siqueros.....	Mar. 8-22.....	3	2
	Villa Union.....	Mar. 8-22.....	3	1

Changes in the Medical Corps of the U. S. Army for the week ended April 18, 1903:

TEN EYCK, Major BENJAMIN L., surgeon, is granted leave for one month.

The following named medical officers are detailed to represent the medical department of the Army at the annual meeting of the American Medical Association to be held in New Orleans, La., from May 5 to 8, 1903: Major Louis A. La Garde, surgeon; Major Charles F. Mason, surgeon; First Lieutenant James Carroll, assistant surgeon. The officers named will proceed to New Orleans at such time as will enable them to reach that place on or before May 5, and upon the adjournment of the association will return to their proper stations.

MCADORY, ROBERT J., contract surgeon, is granted leave for one month. Upon the expiration thereof, will report by letter to the surgeon-general of the Army for annulment of contract.

RAMSAY, GEO. D., contract surgeon, is granted leave for two months to take effect upon the arrival at Fort Adams of another medical officer.

HEPBURN, JAMES H., contract surgeon, is granted leave for one month on surgeon's certificate, with permission to apply for an extension of one month.

The following named medical officers are detailed to represent the medical department of the Army at the Interstate National Guard Association to be held at Columbus, O., May 4 to 6, 1903: Captain Merritt W. Ireland, assistant surgeon; Captain Frederick P. Reynolds, assistant surgeon. The officers named will proceed to Columbus, O., in time to reach that place on or before May 4, and upon the adjournment of the association will return to their proper stations.

PEASE, F. D., contract surgeon, leave granted is extended one month.

FISHER, WILLIAM C., contract dental surgeon, is granted leave for twenty days, from about April 25.

KENNEDY, Captain JAMES M., assistant surgeon, having completed the duty for which he was ordered to Washington, D. C., will upon the expiration of his present leave proceed to Allentown, Pa.; New York City; Boston, Mass.; West Point, N. Y.; Buffalo, N. Y.; Cleveland, O.; Chicago, Ill.; and St. Louis, Mo., on business pertaining to the medical department of the Army, and upon the completion of this duty will rejoin his proper station at the Presidio.

So much of orders of March 27 as direct First Lieutenant John R. Devereux, assistant surgeon, to proceed to Fort Columbus, is amended so as to direct him to proceed to Fort Snelling, Minn., for duty.

GILCHRIST, First Lieutenant HARRY L., assistant surgeon, will proceed to Philadelphia, Pa., and New York City on business pertaining to the medical department of the Army.

MILLER, EDWARD W., contract surgeon, will report to the commanding officer, Fourteenth Battalion, Field Artillery, in camp at the Presidio, for duty therewith en route to Fort Sheridan, and upon the completion of this duty will proceed to his home, Chicago, Ill., for annulment of contract.

BLANCHARD, First Lieutenant ROBERT M., assistant surgeon, is granted leave for seven days.

Changes in the Medical Corps of the U. S. Navy for the week ended April 18, 1903:

HARRIS, H. N. T., surgeon, detached from the Monocacy and ordered to the Glacier at Manila, P. I.—April 11.

DRAKE, N. H., surgeon, detached from the Solace and ordered to the New York as fleet surgeon of the Pacific Station—April 15.

RUSSELL, A. C. H., surgeon, detached from the Naval Museum of Hygiene and Medical School, and ordered to the Newark as fleet surgeon, South Atlantic Station—April 15.

CORDEIRO, F. J. B., surgeon, detached from the Naval Training Station, Newport, R. I., and ordered to the Solace—April 15.

BARBER, G. H., surgeon, detached from the Monongahela and ordered to the Training Station, Newport, R. I.—April 15.

LANGHORNE, C. D., passed assistant surgeon, detached from the Naval Hospital, Port Royal, S. C., and ordered to the Monongahela—April 15.

Changes in the Public Health and Marine-Hospital Service for the week ended April 16, 1903:

WILLIAMS, L. L., assistant surgeon-general, granted leave of absence for seven days from April 11—April 11, 1903. Granted extension of leave of absence for one day—April 15, 1903.

IRWIN, FAIRFAX, surgeon, to proceed to Washington, D. C., for special temporary duty—April 13, 1903.

WICKES, H. W., passed assistant surgeon, granted leave of absence for one day—April 14, 1903.

RUSSELL, H. C., assistant surgeon, relieved from temporary duty at the Immigration Depot, and directed to rejoin his station at Stapleton, N. Y.—April 15, 1903.

BILLINGS, W. C., assistant surgeon, to proceed to Quebec, Canada, for duty in the office of the U. S. Commissioner of Immigration—April 16, 1903.

WARREN, B. S., assistant surgeon, granted leave of absence for five days from April 16—April 15, 1903.

FOSTER, A. D., assistant surgeon, to proceed to Southport, N. C., and assume temporary command of the station at that port during absence, on leave, of Assistant Surgeon B. S. Warren—April 15, 1903.

DEVEREAUX, JOHN, acting assistant surgeon, granted leave of absence for twenty-three days from April 2—April 9, 1903.

MCCONNELL, A. P., acting assistant surgeon, granted leave of absence for three days from April 20—April 16, 1903.

MCCONNELL, E. F., acting assistant surgeon, granted leave of absence on account of sickness, for thirty days—April 9, 1903.

SLAUGHTER, A. W., acting assistant surgeon, granted leave of absence for six days from May 5—April 10, 1903.

WALKER, R. T., acting assistant surgeon, granted leave of absence for thirty days from April 8—April 9, 1903.

American Medicine ⁶⁷⁹

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A Momentous Discovery.—In the discovery of the infecting organism of variola, announcement of which we have been authorized to make by Prof. W. T. Councilman, of Harvard University, medicine has made a most important advance. The search for this organism has been the labor of years, and the failure to demonstrate it a stronghold of those opposing the theory of the bacterial origin of disease. Since in vaccination there is such a proved prophylactic for the ravages of the disease, the discovery has not the clinical interest attaching to the identification of the bacillus of diphtheria and the consequent perfecting of the diphtheria antitoxin; yet it will doubtless eventually lead to an absolute demonstration of the process by which vaccination confers immunity, and thus end much of the opposition to that measure. Prof. Councilman states that the organism is a protozoan, at present unclassified, and that its life cycle has been demonstrated. We congratulate research workers in general, and Prof. Councilman in particular, upon the results of his work as evidencing the value of such labors not only to the profession, but to the race.

Accuracy and uniformity in reporting the causes of death is one of the most important duties of physicians, as the value of statistics depends upon such precision. The United States Census Office is making an earnest and commendable effort to secure such uniformity, which, now that the office is organized upon a permanent basis, becomes all the more necessary. Figures according to an old proverb are great liars, but we know, of course, that the lying is done by the ignorant, or unscrupulous, or careless figurer. No physician is unaware of the vast importance of the facts of vital statistics, for it is upon them and their accuracy that science, and especially medical science, largely rests. Hence the appeal of the Census Office comes to us as citizens, but especially as officers of the law, and agents of the government, which we in truth are, in the gathering and reporting of the facts of mortality. The Census Office has issued five pamphlets that should be in the hands of every physician in the United States. These pamphlets should be carefully read, and preserved for constant reference. They bear the titles given as headings of the following editorial paragraphs.

Legislative Requirements for Registration of Vital Statistics.—With the organization of the Census Office upon a permanent basis, and the provision for annual reports relating to vital statistics in registration areas, a possibility is now presented that the vital statistics of the United States may be brought up to a higher standard of completeness and accuracy. But there can be no complete statistics of this kind for the United States, as a whole, until comprehensive registration laws are enacted and effectively enforced, in a uniform manner, in all of the States. A movement for the extension of registration legislation and methods upon such lines as practical experience has demonstrated to be necessary has been initiated by the Census Office in conjunction with the American Public Health Association, after a thorough study of all of the local laws in effect and a complete knowledge of the good and bad features of each. This movement has now been approved by the Congress of the United States in a resolution which recites the necessity for it, and requests the favorable consideration and action of the State authorities, to the end that the United States may attain a complete and uniform system of registration. The resolution, as passed by Congress, together with a report made by the Census Committee of the House of Representatives, also resolutions passed by the American Public Health Association at the annual meeting at New Orleans in December, 1902, are given in this circular. The report of the House Committee contains a paper on the subject prepared by the experienced vital statisticians and registration officials constituting the committee on "Demography and Statistics in their Sanitary Relation" of the Association. A specimen form of a law for the registration of deaths is given as an illustration of construction to meet the requirements indicated by the committee, including provisions for its proper administration and the maintenance of an effective system.

Relation of Physicians to Mortality Statistics.—The circular with this caption is issued for the use and benefit of physicians who have to make out certificates of death in compliance with registration laws, by acquainting them with the scope and requirements of the international classification, which has been adopted by all of the registration States and by most of the principal registration cities for the compilation of their mor-

tality statistics. Such statistics, to be comparable, must be uniform; and to be valuable for scientific purposes they must be accurate. Their chief value is in the distribution of deaths *by causes*, but the cause of death must be properly *stated* before it can be properly *classified*. In this particular the entire value of the statistics depends solely upon the lucidity and certainty with which the physicians supply the information. In all statistics of deaths by causes there is much too large a proportion of unknown or indefinite items for which the physicians alone are directly responsible and which they alone can remedy. It is probable that the defect in this particular is largely due to the fact that there has heretofore been no general and comprehensive plan to direct the attention of all physicians to the use of their certificates for statistical purposes, and to exhibit the necessities and requirements in this respect by explaining the classification used and by specifying wherein certain returns are incomplete, indefinite, or unsatisfactory. This circular is designed to furnish such information. It should be considered that the classification, in itself, is but a selection and arrangement of *titles only*, under which deaths reported in thousands of different ways must be compiled, and that the assignment of any death to the proper title requires a definite statement of the course of disease or the sequence of causes resulting in the death. A copy of the list of indefinite returns given will be sent to every local registrar in the United States with the suggestion that no certificate containing only these or similar terms be accepted, and no burial permit be issued, until the cause of death is accurately specified, in accordance with the explanatory notes, or a satisfactory explanation made. There will undoubtedly be cases in which the exact cause can not be ascertained and others in which an accurate diagnosis is impossible, but an observance of the suggestions made in this circular will very largely reduce the number of deaths that must necessarily be classed as unknown or ill-defined.

The Manual of International Classification of Causes of Death, issued by the United States Census Office, should be a part of the literary armamentarium of every physician's office. It is designed to present a detailed statement of the general arrangement of the international classification of causes of death, showing the inclusion of the terms reported by physicians as compiled under each title, in a form that will render it of practical use to registration offices in this country. The use of a classification of causes of death is imperative in the compilation and study of mortality statistics embracing any considerable number of deaths. The causes of death as assigned by physicians are so extremely numerous that it would be wholly impracticable to present them individually, and if it were possible to do this, and the causes, exactly as returned, were arranged in purely alphabetical order, the resulting compilation would be of very little use to the sanitarian or other student of mortality statistics, for he could not tell, except by a very laborious examination of the entire table, whether he had obtained the total number of deaths from any given disease or not. In other words, he would be obliged to do for himself, at a prohibitive

expenditure of time and effort, what it is the province of any fairly well devised classification of causes of death to do for him. The selection of the international classification by the Census Office for the compilation of the mortality statistics derived from registration areas for the calendar year 1900 and subsequent years is based chiefly upon the fact that this action will render the data directly comparable with the individual reports of the States chiefly composing the registration area, all of which have adopted this system, as well as tend to promote the uniformity and comparability of the mortality statistics of the United States with those of other countries.

Practical Registration Methods.—The Standard Certificate of Death, as printed by the Census Office, was prepared in conjunction with the Committee on Demography of the American Public Health Association, after conferring with many of the principal registration officials and after a study of all forms in use, as a part of the movement for uniformity in registration laws and methods, initiated by the publication of Circular No. 71 by the Census Office. This form of certificate has been adopted by the States of Colorado, Illinois, Indiana, Michigan, New York, and Vermont, and the authorities in other registration States and cities have approved it and announced their intention to adopt and put it into use as soon as the change can conveniently be made. This is an important step toward securing uniformity in returns and results. The form covers all of the information generally required under an advanced system of registration, but if other items are necessary for local purposes they may be added. It is, however, best to avoid increasing the number, unless further details are absolutely necessary under local laws or to meet very unusual conditions. As presented, the form is adapted to use in a State where returns are made under State laws, applicable in all parts and in which the certificates (or copies) are sent to a central office. In such cases the best results are obtained when the central office prints and supplies the blank forms of certificates and all other forms of records used. Where the form is adopted by any city in a nonregistration State the heading may be changed to correspond. The size of the form given is 7½ by 8½ inches. This makes it compact and convenient to handle, and when bound the certificates occupy but little space. This size of blank may be cut from ordinary stock paper, 22 by 34 inches, without any waste.

Medical Education in Vital Statistics.—In spite of the complaint of overcrowding the medical course, it is plain that our medical colleges must undertake definite courses of instruction in the detail work of observing, formulating, and reporting the facts of vital statistics as required by law, and also of doing it in the spirit of science which our profession demands. Such a course should be made to include a general review of the origin and development of the modern system of boards of health and the basis of their operations; utility and application of reports of disease, particularly of communicable diseases; registration of data relating to births

and deaths; importance of recorded data, (1) to individuals, (2) to the general public; relation of vital statistics to sociologic questions; relation of mortality statistics to advancement in medical science and public hygiene; duties and obligations of physicians, (1) to patients, (2) to the profession, and the public, through proper registration of births and deaths; legal liabilities; necessity for uniformity in forms and methods; the "Standard Certificate of Death;" relation of sex, age, color, or race, conjugal condition, parent nativity, occupation, and other factors (see certificate) to the mortality from different causes; necessity for complete returns; classification of causes; explanation of the international classification; meaning of titles in statistical tables; indefinite titles; provisions for revision; precision in statement of causes of death as essential to proper classification and elimination of indefinite titles; and all other matters germane to a thorough knowledge of the subject. Instruction in these lines should be supplemented by practical work in the classification of causes of death and in the tabulation of statistics. As a corollary to this proposition medical examining boards should see that applicants for license to practise medicine are interrogated upon these points, and that a proper knowledge and appreciation of the duties and obligations of physicians in the premises be made a condition precedent to granting licenses.

An Execrable Governor.—In our issue of April 4 we spoke of the admirable medical practice bill which Dr. Van Meter and his fellow workers had drafted and by great exertion had secured the passage of through the Legislature of Colorado. No one could have supposed that the demagog in the Governor's chair would have proved such an enemy to his people and State as to veto the measure. At the demands of populists, osteopaths, and the combined antis, he has done so, and every physician and honorable citizen of the State should see to it that he get his reward. The ground of complaint was, of course, the old criminal lie that the proposed law was "a vicious trust measure." The ignoramuses and quacks who secured the Governor's veto were, of course, not actuated by the financial reasons which they ascribed to the medical profession! The fact is terrible in what it reveals of the mental and moral condition of so many citizens of the State. When one remembers that the only demands made by the proposed law were really for education of a primary character in the fundamental branches of medical science, the exclusion of the abortionists, dishonorables, etc., and that the best sectarian "schools" were recognized and accepted the requirements—then the full measure of the shame is seen. In other words, the quacks of the worst sort have more influence over a demagog politician than all the educated and decent people of the State. That is a powerful inducement to offer settlers! The lovers of ignorance, immorality and disease in charge of the banner sanitarium State—this is Colorado's advertisement to all the seekers after health and wealth of the United States! That of course cannot long be so. Even every commercial interest must see that this is suicide. "At them again, comrades!"

Plague Situation at San Francisco.—Infected rats were first discovered in San Francisco in November, 1902, but none have been found during the past four months. The last human case in 1902 was that of a white man who died on December 11. An interval of 95 days passed before a fresh case appeared, that of a Japanese woman, who died on March 16, 1903. Since March, 1900, there have been four periods exceeding 60 days, two of them exceeding 90 days, of apparent subsidence of plague. According to accepted views these intervals must have been bridged by unobserved or unreported cases. More than six months have now elapsed since the last reported case of plague among the Chinese and it is a pity that this circumstance may not be accepted at its face value. Plague experience has given us a great respect for the elusiveness of John Chinaman. Surgeon-General Wyman said at New Haven in October last, and he repeated the statement at the Washington conference in January, that three years' work would be required to make sure of the eradication of plague from Chinatown. Two years ago (June, 1901), during one of the periods of quiescence of plague, Dr. John Williamson said in his official report: "The future will demonstrate what the past has shown, that while the Chinese are permitted to inhabit their present quarters, . . . San Francisco harbors a constant peril. . . . The day has passed when a progressive city like San Francisco should feel compelled to tolerate in its midst a foreign community perpetuated in filth for the curiosity of tourists, the cupidity of lawyers, and the adoration of artists." So far as this wide country is concerned there is nothing disquieting in the opinion of Dr. Wyman or in the more positive statement of Dr. Williamson. Even in San Francisco the occurrence of a few cases of plague need not excite alarm so long as capable and honest health officials are free in the exercise of their lawful powers. California has subdued, for the present at least, an infection more blighting than plague. Part of the penalty for her misguided policy in the past is that we at a distance fear a recrudescence of the pest of liars. If she is secure against this terrible contingency plague cannot prevent California from reestablishing her credit.

The New State Board of Health of California.—Governor Pardee has appointed to the State Board of Health a group of men whose reputations lead us to expect a good repair of the mischief done by their predecessors. A week after its organization the new State Board of Health suffered the loss of its president, Dr. Matthew Gardner, who died of appendicitis on April 18. Dr. Gardner was for a time one of those who disputed the existence of plague. He was sent by Governor Pardee as a delegate to the conference at Washington on January 19. He there confessed his own abandoned error, repudiated the conduct of those who deluded the people of San Francisco, and made a very able plea in extenuation of San Francisco's failure to deal effectively with plague. Returning to San Francisco he began at once a determined effort to subdue the hostility of the press, the politicians, and the commercial bodies. He endeavored with the utmost vigor and earnestness to

have the commercial bodies admit in their recent manifesto the existence of plague. But they had no such courage as Dr. Gardner had, and though he brought them to the point of contrition they would not confess. Apparently he failed also to induce his associates in the State Board of Health to utter this essential truth; for the State Board of Health addressed on April 10 to the other State Boards of Health in the country a brief statement, which promises that California will soon present "the cleanest bill of health of any in the sisterhood of States," but containing no mention of plague or any other infectious disease. A better chance to win confidence and good-will was never lost. One's mind cannot be coerced into a favorable interpretation of this letter of April 10. Men who shy at a word are not expected to be steadfast in action. Such is the inevitable corollary to the first utterance of the new State Board of Health of California.

We are killing fewer babies, at least in some cities, notably in Chicago, says the *Bulletin of Health* of that city:

During the six years preceding the present administration of the department there had been 66,003 deaths of those under five years of age; during the six years of the present administration, 1896-1902, there have been only 51,046 such deaths, or 14,957 fewer than in the first period. But this tells only part of the story. The population of the city increased, according to the United States census, 5.4% per annum between 1890 and 1900, and it is fair to assume that the under-five-years population increased in at least the same ratio. It follows that if the deathrate of the earlier period had been continued during the last six years there would have been 87,387 under-five-years-of-age deaths instead of the 51,046 that did actually occur. Chicago's present population is therefore more than 36,000 greater than it would have been, and there are that many fewer little graves in the city cemeteries.

There is no more encouraging demonstration of medical progress and of advance in true civilization than these figures show. The dragging-out of life at the tail-end of it, and the multiplication and lengthening of the lives of so many of the useless has been too large a part of the results of sanitation and preventive medicine. These results were not, of course, bad, and were certainly good. However they were not the best good possible. It did not lessen the labor of the producer, or better his condition. It rather increased his load and kept him down. While doing all this we continue to kill the babies at the old heathen rate. To add to the number of children growing to maturity was and remains the all-important thing to do. The proof that at last we are doing it is most significant, not only to medicine but for the future of the nation.

"Physical Culture's" exposé of the Koch consumption-cure frauds—of the "Thirteen Koch Lung-cure Institutes," of "Dr. Koch's Sanitarium, Incorporated," and of the "Koch Sanitarium"—by Gerald Keating is a capital bit of work. It is a pity that the profession has left such a job to be done by a lay magazine, but we feel gratitude for the help, whencesoever it comes. For similar crusades against the "Electric Belt," the Elixir-of-life, and the "Woman! why-in-the-world-will-you-suffer-any-longer?" frauds we must also be thankful. The antidote goes straight

to the poisoned patient. We wish we had space to reproduce the details of the abominable business of the much-advertised and many-branched "Koch cures" and "Koch Institutes," how they originated and are carried on, etc., as given by the writer of the article in *Physical Culture*. To our readers, of course, it would only be indirectly useful in the possible education of some of their patients, the poor dupes who are fleeced by the scamps whom the law also seems powerless to touch.

Patent Medicine Testimonialists.—We suggest that our subscribers should invest ten cents in the current number of *Physical Culture*, a popular magazine which in its way is doing a deal of good as regards some "curers"—at least in this number. This advice is given in order that our colleagues may have some "ammunition" for their patients who are addicted to the "Celery Compound" and "Peruna" forms of alcoholism. The career of Supreme Court Judge and Member of Congress H. Henry Powers as a taker and endorser of the popular tipples called patent medicines is entertaining. Facsimiles of the advertisements and portraits of Powers and of other notabilities appearing in the great yellow dailies are given. Mr. Iller, in *Physical Culture*, says:

Although cured by Paine's Celery Compound Powers was still a long way from being a healthy man. He had taken so much of Celery Compound that he was literally full of "Pains." He decided in favor of Greene's Nervura. On the prominence gained by this second testimonial he was elected to the United States Congress. On his arrival in Washington, D. C. he found that this body no longer existed, and that it had long been replaced by the Peruna Congress. The majority of the congressmen and senators put forth their best efforts in trying to establish Peruna as the national tonic. Powers soon discovered that the cause of Nervura was a lost cause, and he promptly set about digging up a new crop of pains in his multicured anatomy to fit the regulation Peruna testimonial. Pitted in Congress against the Peruna faction was the Malt Extract party, which was led by the invincible Chauncey Depew. The Peruna faction was led by Amos Cummings, who was completely cured by Peruna, but died shortly afterward. Having been cured more frequently and by more varied remedies than any other congressman, Powers was the most eligible candidate for leader, and was accordingly unanimously elected. Under his leadership the Peruna party made wonderful strides forward but, strange anomaly, the more the congressmen professed being cured the more feeble they grew, and stimulated by the example of Mr. Powers, there are now over fifty "active" members in the party taking the cure. Powers' term expired in 1901, and his constituents failed to return him to Congress. They claimed that a man may have some pains all the time, that he may get rid of all the pains some of the time, but they doubted Powers when he got cured of all his pains all the time.

A Little Bad Weather Killed at Least Seventy-five People in One City.—The Chicago Health Department finds that as a result of the blizzard of April 3 there were seventy-five more deaths the following week than in that preceding the storm. If these in a short week and in one city were the consequences discoverable by the statisticians, the untabulated deaths were of course many times as great. The fact shows how near many lives are constantly running to the death line and how small a thing will push them over it. The weather adds, therefore, an important element to the physician's solicitude and work.

BOOK REVIEWS

Manual of Antenatal Pathology and Hygiene.—J. W. BALLANTYNE. Edinburgh: William Green & Sons, 1902.

It is possible that some investigators of fetal pathology have had more material at their disposal than Dr. Ballantyne, but certainly no one has used it to better advantage. Personal observation of nearly 300 specimens of fetal disease during a period of 18 years forms the basis of his studies. That this material has been thoroughly studied is indicated by the author's personal bibliography of 228 publications, nearly all of which deal with the subject of fetal pathology. With such preparation one is not surprised that this volume of about 500 pages devoted to the physiology and pathology of the fetus is a most complete and masterly exposition of the subject. Dr. Ballantyne promises to take up in a second volume teratology and morbid heredity. Such a work in English is sadly needed, and in combination with the present volume will constitute a valuable contribution to a much neglected field of pathology. The present volume is of such general excellence that it is almost impossible to select particular chapters as of more importance than others. The following brief summary indicates the scope of the work. The introductory chapters treat of the relation of antenatal pathology to postnatal pathology. The injuries which the fetus may suffer during the intranatal stage or period of birth are then discussed. These include the traumatism, as hematoma, paralysis, fracture, dislocation, etc.; the infections, as ophthalmia, mastitis, etc. Then follows the neonatal period, or period of physiologic readjustment, corresponding practically to the mother's puerperium. Hemoglobinuria, icterus, melena, néonatorum, etc., are described, as well as the infections that may occur at this time. Four chapters are then devoted to the anatomy and physiology of the fetus. Transmitted fetal diseases are treated most thoroughly; the discussion of variola, tuberculosis, typhoid, and syphilis being especially noteworthy. A most interesting chapter is that devoted to the discussion of the possibility of the transmission of mineral and vegetable poisons to the fetus. Seven chapters are devoted to the idiopathic diseases of the fetus, one to changes in the cord and placenta, one to intrauterine death, and two to the hygiene and therapeutics of the fetus. The author believes antenatal pathology to be the most essential and simplest form of preventive medicine, and offers interesting suggestions concerning the possibility of the practical development of such a hygiene. To sum up, it may be said that the book is one of the most important of the past year, and of value not alone to the obstetrician or pathologist, but to the student of medicine in the broader sense. The illustrations are uniformly good and some of them unusual. The publishers' work is excellent.

The New International Encyclopedia, Vol. VIII.—Dodd, Mead & Co., New York.

This runs from Fuller's Earth to Halitherium. The principal medical and semimedical subjects included are:

Fusel Oil	Glaucoma
Galbanum	Glioma
Gallic Acid	Glossitis
Galvanic Battery	Goa Powder
Garbage Disposal	Goiter
Gas (Sanitary Aspects)	Gonorrhœa
Gastritis	Gout
Gastroenteritis	Grape Cure
Gastrostomy	Gualacum
Gastrotomy	Guarana
Gelsemium	Gunshot Wound
Gentian	Hematemesis
Glanders	Hemophilia
Glanber's Salt	Hemoptysis

Among closely related biologic articles, to which a larger amount of space is given, are:

Function Change	Hair
Gestation	Hematin
Glycogen	Hemoglobin
Growth	

Under "Function" the physiologic processes receive an exposition covering a third of a column, while nearly three

columns are devoted to the mathematic use of the term. Glycosuria is defined as a symptom of diabetes mellitus, with no allusion to its occurrence as a physiologic phenomenon. Vegetable germs are described, but the anatomic structures, together with their diseases, are completely ignored, and skin grafting is omitted under Grafting. The articles on Gout and Gonorrhœa are well written. Gangrene is treated with relative inadequacy. Among subjects which are omitted entirely or to which there is no cross-reference are:

Funis	Genu Valgum and Varum
Furuncle	Germicides
Gait	Gingivitis
Galactagogs	Glycyrrhiza
Galium	Granatum
Gastric Neuroses	Hand (Diseases of)
Gavage	Handkerchief Dressings

Between 40 and 50 physicians are noted biographically, though some as distinguished as Thomas Gray, the anatomist, are left out. It seems strangely inconsistent that members of other professions, some of whom are new to fame and little known, should receive mention, and medical men of international repute, like Fuchs, Haig, Gowers, DaCosta, Fenger, and a hundred others, are passed by in silence.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences.—Edited by HOBART AMORY HARE, M.D., assisted by H. R. M. LANDIS, M.D. Vol. I, March, 1903. Lea Brothers & Co., Philadelphia and New York, 1903.

The first volume for 1903 of this wellknown and deservedly popular review of the progress of medicine comprises a critical digest of recent literature on the surgery of the head, neck, and chest, by Dr. Charles H. Frazier; of infectious diseases, including acute rheumatism, croupous pneumonia, and influenza, by Dr. James B. Herrick; of the diseases of children, by Dr. Floyd M. Crandall; of pathology, by Dr. Ludvig Hektoen; of laryngology and rhinology, by Dr. A. Logan Turner; and of otology, by Dr. Robert L. Randolph. In the excellence and trustworthiness of its contents the volume fully sustains the reputation of its predecessors.

Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition.—By Dr. CARL VON NOORDEN, Senior Physician to the City Hospital in Frankfurt a/M. Authorized American edition translated under the direction of BOARDMAN REED, M.D., Philadelphia. Part I.—Obesity. Part II.—Nephritis. Part III.—Colitis. New York: E. B. Treat & Co., 1903.

We heartily concur with the statement of the American editor that the English reading physicians of the world are to be congratulated upon the publication here, simultaneously with their appearance in Berlin, of these monographs by Dr. von Noorden. They are concise statements of facts gleaned from the experience of a master clinician and investigator. The arrangement of these facts may be judged from the statement that the text is so brief and methodic that the reviewer is tempted to furnish an abstract of each volume. Every physician should read them.

PART I.—Deals wholly with indications for reduction cures of obesity and not with methods. The indications are grouped under two heads: First, simple obesity in otherwise healthy subjects, and second, when complicated by other diseases. The author places himself on record as opposing the frequently expressed view that reduction cures are a weakening procedure. They are not weakening if really indicated and properly carried out.

PART II.—The author uses as a text the customary therapy of kidney diseases and then proceeds to annihilate utterly many of these traditional methods. No structure is torn down, however, without being replaced by a finished substitute that is accompanied by reasons for its building. Protective therapy of the kidney is the keynote of this monograph which states the facts of metabolism as a basis for the dietary regulations to be adopted in kidney disease. Various substances are considered according to the ease or difficulty with which they are excreted. The principles underlying the dietetic and physical treatment of acute nephritis and of contracted kidney are sep-

arately discussed. The theory that milk is the best diet in all cases of nephritis is questioned, if indeed it is not actually disproved. In many cases the ingestion of fluids needs to be greatly restricted. The fallacy of the belief in the value of light meats over dark is clearly shown. The generally good work of the publishers of these volumes is marred in this one by the appearance on the front cover of the author's name as *von Norden* and by the transposition in the text of the headings of Chapters IV and V.

PART III.—This deals entirely with membranous catarrh of the intestine (*colica mucosa*), pathology and treatment being the topics considered. As to the cause of this condition, von Noorden states that "neither constipation alone nor neurasthenia alone nor the common combination of these states can produce *colica mucosa* unless at the same time there is some involvement of the nervous apparatus that governs the secretion of mucus in the large intestine." A general outline of the diet recommended in the treatment of this condition is given. Drs. von Noorden and Carl Dapper, who aided in the preparation of this volume, have treated in all 76 cases of *colica mucosa* by the methods they present and in 79% they obtained complete and permanent cure.

The Malarial Fevers of British Malaya.—By HAMILTON WRIGHT, M.D. Studies from the Institute for Medical Research, Federated Malay States. Vol. I, No. 1, 1902.

This contribution by the director of the Institute is a summary of the preliminary study of problems concerning the malaria of Malaya. While it is not an extensive work, and although the greater portion of the publication is devoted to detailed descriptions of cases, reproduction of charts, etc., the many interesting observations which are made indicate that Malaya offers a very valuable field for research in malaria. Two hundred and fifty-one cases were studied which, according to the type of parasite found, are divided into malignant tertian 93, benign tertian 78, quartan 56, pigmented quotidian 22, unpigmented quotidian 2. This may be considered as an index of the various types of malaria in British Malaya. Multiple infections were the rule. The European quarters of large centers of population were practically free from malaria despite the presence of large numbers of anopheles. In these localities, however, the anopheles were seldom infected. Infection of Europeans usually resulted from visits to the jungles, outstations, native quarters, etc., all of which are foci of infection. The majority of infections occurred among the natives (Tamis, Chinese and Malays). This is explained by their mode of living, bad hygienic environment and their neglect of prophylactic measures. They usually live in gangs at railway and irrigation stations, quarries and mines, in most of which localities infected anopheles are found. Dysentery and ankylostomiasis commonly accompanied the malaria. "Black-water fever" was not observed. The age limits were three and sixty-three years. The common form of Anopheles found were *A. sinensis*, *superpictus*, *A. species a* and *b*, and an unidentified form. The rarer forms were *A. costalis* and *A. rossii*. For the extermination of malaria Dr. Wright suggests clearing, drainage and cultivation of the ground in the neighborhood of large communities, the use of mosquito netting and administration of quinin. The use of oil is not feasible on account of the heavy rains. He is not optimistic about prophylactic measures, on account of the ignorance of the natives who use their own remedies and neglect all rules of hygiene.

BOOKS RECEIVED.

[Prompt acknowledgment of books received will be made in this column, and from time to time critical reviews will be made of those of interest to our readers.]

Anatomy of the Brain and Spinal Cord.—By HARRIS E. SANTEE, M.D., Ph.D., Professor of Anatomy in the College of Physicians and Surgeons, Medical Department, University of Illinois; Professor of Anatomy in Harvey Medical College, Chicago. With a preface by WILLIAM T. ECKLEY, M.D., Professor of Anatomy in the Medical and Dental Departments, University of Illinois. Third edition; revised and enlarged. Price, \$2.00 net. E. H. Colegrove, Chicago, 1903.

The International Medical Annual: A Year-book of Treatment and Practitioners' Index. E. B. Treat & Co., New York, 1903.

Transactions of the American Climatological Association: Vol. xviii, 1902.

Bacteria in Milk and Its Products.—By H. W. CONN, Ph.D., Professor of Biology, Wesleyan University. With 43 illustrations. P. Blakiston's Son & Co., Philadelphia, 1903. Price, \$1.25 net.

A Pocketbook of Infant and Childhood Diets.—By A. B. SPÖCH, A.M., M.D., Instructor in Medicine, Medical Department of the University of Illinois. E. H. Colegrove, Chicago. Price, 50 cents net.

Hygiene and Public Health.—By LOUIS PARKES, M.D., D.P.H., London University, Fellow of the Sanitary Institute and member of the Board of Examiners; Lecturer on Public Health at St. George's Hospital Medical School, etc. And HENRY KENWOOD, M.B., D.P.H., F.C.S., Fellow of the Sanitary Institute, and member of the Board of Examiners; Assistant Professor of Public Health at University College, London, etc. Illustrated. P. Blakiston's Son & Co., Philadelphia, 1902. Price, \$3.00 net.

Essays on Clinical Medicine: Being reprints of papers published at various times in the *American Journal of the Medical Sciences.*—By BEVERLEY ROBINSON, A.M., M.D. (Paris), Clinical Professor of Medicine at University and Bellevue Hospital Medical College, etc. William J. Dornan, Philadelphia, 1903.

State Board of Health: Sixteenth Annual Report, Year Ending October 31, 1901. Fred. J. Heer, Columbus, Ohio, 1903.

American Edition of Notlingel's Practice: Diseases of the Pancreas, Diseases of the Suprarenal Capsules, and Diseases of the Liver.—By Dr. L. OSER, of Vienna; Dr. E. NEUSSER, of Vienna; and Drs. H. QUINCKE and G. HOPPE-SEYLER, of Kiel. The entire volume edited, with additions, by FREDERICK A. PACKARD, M.D., late Physician to the Philadelphia and to the Children's Hospitals, Philadelphia; and REGINALD H. FITZ, M.D., Hersey Professor of the Theory and Practice of Physic, Harvard University Medical School, Boston. Handsome octavo of 918 pages, illustrated. Philadelphia, New York, London: W. B. Saunders & Co., 1903. Cloth, \$5.00 net; half morocco, \$6.00.

American Edition of Notlingel's Practice: Diseases of the Stomach.—By Dr. F. RIEGEL, of Giessen. Edited, with additions, by CHARLES G. STOCKTON, M.D., Professor of Medicine in the University of Buffalo. Handsome octavo volume of 835 pages, illustrated, including 6 full-page plates. Philadelphia, New York, London: W. B. Saunders & Co., 1903. Cloth, \$5.00 net; half morocco, \$6.00 net.

How to Succeed as a Physician.—The Church Publishing Company, Meriden, Conn., 1902.

Care and Feeding of Children.—By L. EMMETT HOLT, M.D., LL.D., Professor of Diseases of Children in the College of Physicians and Surgeons (Columbia University). Third edition, revised and enlarged. D. Appleton & Co., New York and London, 1903.

Handbook of Climatology.—By JULIUS HANN, M.D., Professor of Cosmical Physics in the University of Vienna, etc. Part I. General Climatology. Translated from the second revised and enlarged German edition, with additional references and notes, by ROBERT DE COURCY WARD, Assistant Professor of Climatology in Harvard University. Price, \$3.00 net. Macmillan Company, New York, 1903.

The Care of the Baby: A Manual for Mothers and Nurses, Containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease.—By J. P. CROZER GRIFFITH, M.D., Clinical Professor of Diseases of Children, in the Hospital of the University of Pennsylvania; Physician to the Children's Hospital, Philadelphia. Third edition, thoroughly revised. Handsome 12mo volume of 436 pages, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Co., 1903. Cloth, \$1.50 net.

Practical Points in Nursing: For Nurses in Private Practice. With an Appendix Containing Rules for Feeding the Sick; Recipes for Invalid Food and Beverages; Weights and Measures; Dose List; and a full Glossary of Medical Terms and Nursing Treatment.—By EMILY A. M. STONEY, late Superintendent of the Training School for Nurses, Carney Hospital, South Boston, Mass. Third edition, thoroughly revised. Handsome 12mo of 458 pages, fully illustrated, including 8 colored and half-tone plates. Philadelphia, New York, London: W. B. Saunders & Co., 1903. Cloth, \$1.75 net.

Materia Medica for Nurses.—By JOHN E. GROFF, PH.G., Apothecary in the Rhode Island Hospital, Professor of Materia Medica, Botany and Pharmacognosy in the Rhode Island College of Pharmacy. Second edition, revised and rewritten. P. Blakiston's Son & Co., Philadelphia, 1903. Price, \$1.25 net.

Bacteria in Milk and Its Products.—By H. W. CONN, Ph.D., Professor of Biology, Wesleyan University, etc. With 43 illustrations. P. Blakiston's Son & Co., Philadelphia, 1903. Price, \$1.25 net.

Twelfth Report of State Board of Health of the State of Maine for the two years ending December 31, 1901.

Weekly Public Health Reports. Vol. xvii. Part I, Nos. 1 to 26. Part II, Nos. 27 to 52.

A Textbook of Legal Medicine and Toxicology.—Edited by FREDERICK PETERSON, M.D., Chief of Clinic, Nervous Department of the College of Physicians and Surgeons, New York; and WALTER S. HAINES, M.D., Professor of Chemistry, Pharmacy, and Toxicology, Rush Medical College, in affiliation with the University of Chicago. Two imperial octavo volumes of about 750 pages each, fully illustrated. Philadelphia, New York, London: W. B. Saunders & Co., 1903. Per volume: Cloth, \$5.00 net; sheep or half morocco, \$6.00 net.

Diseases of the Heart and Arterial System.—By ROBERT H. BABCOCK, A.M., M.D., Professor of Clinical Medicine and Diseases of the Chest, College of Physicians and Surgeons (Medical Department of the Illinois State University), Chicago; Attending Physician to Cook County Hospital and Cook County Hospital for Consumptives, etc. With three colored plates and 139 illustrations. D. Appleton & Co., New York and London, 1903.

Medical Jurisprudence, Insanity, and Toxicology.—By HENRY C. CHAPMAN, M.D., Professor of Institutes of Medicine and Medical Jurisprudence in the Jefferson Medical College, Philadelphia. Third edition, thoroughly revised, greatly enlarged, and entirely reset. Handsome 12mo volume of 329 pages, fully illustrated, including four colored plates. Philadelphia, New York, London: W. B. Saunders & Co., 1903. Cloth, \$1.75 net.

Tuberculosis: Recast from Lectures Delivered at Rush Medical College, in affiliation with the University of Chicago.—By NORMAN BRIDGE, A.M., M.D., Emeritus Professor of Medicine in Rush Medical College; Member of the Association of American Physicians. Handsome 12mo volume of 302 pages, illustrated. Philadelphia, New York, London: W. B. Saunders & Co., 1903. Cloth, \$1.50 net.

AMERICAN NEWS AND NOTES.

GENERAL.

The National Association of the United States Pension Examining Surgeons will hold its second annual meeting in Washington, D. C., May 13, 14, 1903.

Eddyites.—The *Baltimore Underwriter* says: Christian Scientists can't be Foresters, and all life insurance companies might as well shut the door in the faces of such cranks.

Gift to National Museums.—Surgeon Edgar Means, of the Army, has given a wonderful collection of rats to the national museum. It is said to be the most complete collection in existence, and contains specimens of all known varieties of rats. Surgeon Means has been a lifetime in making his collection, which has the merit of being novel at least.

Fourth Pan-American Medical Congress.—At a meeting of the International Executive Committee of the Pan-American Medical Congress held April 1, 1903, it was decided to accept the proposal of the Argentine Republic to hold the Fourth Pan-American Congress in Buenos Ayres in 1905 instead of 1903, as had been announced in their invitation of February, 1901.

New Quarantine Rules and Plague.—Regulations to gauge the admission of plague to the United States are emphasized in the new quarantine regulations. A vessel in quarantine for plague will not hereafter be allowed to anchor near enough to shore to allow rats to swim ashore, and the sweepings of the decks even are to be burned and not thrown overboard. Fumigation for the destruction of rats and all forms of vermin is prescribed. The regulations are the most specific and explicit on all subjects ever issued.

New Quarantine Rules and Mosquitos.—The new quarantine regulations drawn by Surgeon-General Wyman are the first which have been issued since 1899. They contain, beside all the laws relating to the subject, 185 specific regulations governing the subject. The mosquito is mentioned in several of these regulations for the first time. Definite instructions are given for the destruction of mosquitos on board ships leaving foreign ports for the United States, particularly if the ship is leaving a country in which yellow fever is prevalent.

To Prevent the Spread of Yellow Fever.—Surgeon-General Wyman, of the Marine-Hospital Service, has assigned a number of surgeons attached to that service to the fruit ports of Central and South America for the purpose of inspecting the vessels, crews, and cargoes of vessels leaving those ports bound for the United States. This step is taken as a precaution against the introduction into this country of yellow fever. In a letter of instruction to his assistants Surgeon-General Wyman says: "Your attention is called to the spread of yellow fever through the agency of the mosquito known as the *Stegomyia fasciata*, and special precautions should be taken to prevent their presence aboard vessels. Should yellow fever break out at your port you are requested to immediately cable the bureau."

Leprosy in the Army.—A soldier who while serving in the Philippines contracted leprosy is still nominally retained in the service and is isolated at a point in South Carolina where he is being observed by the Army surgeons, with a view of determining something more definite with reference to the etiology of the disease, its course, and treatment. Efforts are being made to ascertain some form of curative treatment for this hitherto hopeless disease. Although he receives the pay of an ordinary soldier, the question has arisen as to the advisability of permitting the soldier to sign the pay-roll and other papers necessary for receiving his check from the government. It has been settled by permitting an agent with the power of attorney to sign the pay-roll in the presence of the physicians and nurses.

EASTERN STATES.

Noise an Element of Damage.—The Supreme Court of Massachusetts has confirmed the ruling of the Chief Justice of the Superior Court that noise is an element of damage. The question arose through the operation of the Boston Elevated Railway, leading to the institution of various suits along its line for damages due to noise. The full text of the decision is of very great interest in relation to this matter, which naturally affects directly a large number of persons and indirectly the entire community.

To Recover Damages for Autopsy.—Suit has been brought against a number of physicians connected with the Massachusetts General Hospital to recover \$2,000 because of the alleged autopsy performed on the body of a patient who died at that institution. Relatives of the deceased claimed that the autopsy was performed without their knowledge or consent, and for this reason the body could not be buried according to the Jewish rites. Judge Sullivan, before whom the case was tried, found a verdict in favor of the defendants, because as testified by them the autopsy was performed in the belief that the consent for the necropsy had been given by a relative.

NEW YORK.

For the Adult Blind.—A bill creating a commission to investigate the condition of the adult blind of the State passed the Assembly. Its main purpose is to provide methods whereby the adult blind of the State may be taught trades.

Lunacy Bill is Vetoed.—Governor Odell, of New York, has vetoed the bill providing for a treasurer and a purchasing agent for the State hospitals. The Governor's objection to the measure was the unnecessary creation of new departments with expense incident thereto, the placing in the hands of the treasurer provided for in the act power to make drafts upon the Comptroller for quarterly estimates of funds necessary for the maintenance of the hospitals, and the practical replacing of the stewards of the various institutions by a single agent vested with the plenary power.

Child Labor Bills Passed.—The General Assembly of New York has passed the last of the bills promulgated by the Child Labor Committee. The bill amends the penal code, so as to provide severe penalties for false statements in reference to age, etc., in connection with the employment of children. The first offense involves a fine of from \$20 to \$100; the second a fine of \$50 to \$250, or 30 days' imprisonment; and the third, a minimum fine of \$250 or 30 days' imprisonment, or both. The importance of this bill lies in the fact that the three bills all depend for efficiency upon the certificates of age.

Sanitary Control of the Water Source.—Since the reorganization of the City Water Department of New York on January 1, the Commissioner and Chief Engineer have introduced new features and methods for the inspection and patrol of the source of supply. An assistant engineer and a force of four men are to be kept constantly in the field for this purpose. Sanitary maps of the entire water-shed with its various villages are to be made and all nuisances are to be located. Such maps are to be filed in the Commissioner's office with exact and complete information pertaining to the water-shed. Each nuisance as reported by the patrol is entered in a book, with a record of the notice sent out for its abatement. Plans for the disposal of the sewage of all villages of the water-shed are to be kept in the Commissioner's office for inspection. It is believed that by this means the quality of water supplied to the city will be materially improved.

No Camps for Consumptives.—A bill was passed by the New York Assembly, but vetoed by the Governor, prohibiting the erection of any camp or hospital for the treatment of patients suffering from pulmonary tuberculosis in any county of the State without first securing the consent of the Board of Supervisors and the Town Board. If the city of New York desired to give her tuberculous poor the benefit of open-air treatment she would have been prevented from establishing camps in the mountainous portions of the State for this purpose. The bill was strongly favored by representatives from the districts where such camps would naturally be located except for the law. Persons living in such districts are naturally opposed to the location of camps in their midst, since they are regarded as a source of contagion.

PHILADELPHIA, PENNSYLVANIA, ETC.

Frederick A. Packard.—An eloquent memorial address on the late Frederick A. Packard, delivered by Samuel McC. Hamill before the Philadelphia Pediatric Society, has just been issued in pamphlet form. It is a graceful and sympathetic tribute to one of the noblest men of our brotherhood.

Disinfection for Schools.—A bill passed by the Legislature and signed by the Governor of Pennsylvania makes it the duty of school directors, trustees, or other persons having control of any school or college building to adopt and immediately put into operation a modern method and system of disinfection.

Ray Bill Fails to Pass Senate.—The Ray bill, designed to raise the standard of education among physicians in Pennsylvania, has been shelved by the State Senate after passing the House by a vote of 126 to 13. It is claimed that some of the lower standard medical schools, through their political influence, succeeded in killing the bill.

Home for Dying Consumptives.—The Phipps Institute for the treatment of tuberculosis will establish a home for dying consumptives in this city. The plan for such a home is being carried out, and a number of gifts in money have been received for its consummation. A distressing feature which renders the establishment of such a home urgent is the fact that poor consumptives are refused admission into the hospitals of the city.

Improved Sanitation in Tenement Houses.—A delegation representing the Octavia Hill Association has called on the Director of Public Safety to ask his assistance in the improvement of the sanitary condition of tenement houses in the congested portions of the southern section of the city. They suggested that inspectors be delegated from the Board of Health or that officials of the association be empowered to make frequent inspections. The director took the matter under consideration.

An Old German Midwife's Records.—Susanna Müller practised midwifery in Providence township, Lancaster county, Pa., at the close of the eighteenth and in the early part of the nineteenth century. From her records, covering the years from 1791 to 1815, which have recently been edited by M. D. Learned and C. F. Brede, it appears that she confined a total of 1,667 cases, an average of 69 a year. The editors believe that this is by no means the entire number attended by her, though it is the one given on her simple tombstone. Her journal was kept in Pennsylvania German, the spelling of English names being strictly phonetic. Thus the little infant, Billy Woods, appears as "bile wuds." Susanna was very successful, and had the confidence of the best physicians in the city of Lancaster.

Professor Hans Kehr, of Germany, who comes to Philadelphia on next Tuesday will be the guest of Dr. Max J. Stern, of the Philadelphia Polyclinic. The trustees of that institution, taking advantage of this fact, have arranged for a series of clinics at the Polyclinic to which the medical profession will be invited. Professor Kehr, although one of the most expert abdominal surgeons of Europe, has confined his published works more particularly to the surgery of the biliary system, the pancreas and spleen. He has operated on over 800 cases of gallstones alone. It is desired that physicians having cases suitable for clinical material communicate at once by telegraph with the Polyclinic, or with Dr. Stern, and an endeavor will be made to have Professor Kehr see and relieve as many as may be in his power. Clinics will be held at the Polyclinic Hospital on May 6 and 7, and probably on the 8th.

SOUTHERN STATES.

The West Virginia State Medical Association will hold its thirty-sixth annual meeting at Charleston, W. Va., May 26, 27, 28, 1903.

Health Statistics.—In the health statistics for Washington, D. C., for the week ended April 18, there were 90 deaths as compared with 85 in the previous week and 118 in the corresponding period of last year. Of the decedents 50 were white, representing a deathrate of 12.5, and 40 colored, the deathrate being 22.8. For all the deaths the rate was 15.7; for the former week, 14.3; and for the corresponding period of last year, 20.

New Hospital.—Contracts have been awarded for the construction of a new hospital for contagious diseases in Jacksonville, Fla. It is stated that the city is in much need of a modern hospital for this purpose. It was agreed by the State Board of Health to undertake the erection of the hospital on condition that the county should provide the land. The new building is to be put up in the same locality as the present pesthouse.

WESTERN STATES.

Refused Vaccination: Smallpox and Death.—The health department officials of Minneapolis are pointing to the death of Charles Stevens as a signal instance of the fallacy of the anti-vaccination position. As secretary of the Antivaccination League of that city, Mr. Stevens had steadfastly refused to be vaccinated. It is regarded as a significant fact that the attack to which he succumbed was the most malignant case of smallpox on record in that city. From the first the physicians entertained scarcely a hope of saving him. Mr. Stevens had frequently denounced vaccination as a barbarous practice, entirely without efficacy in either preventing or staying the progress of smallpox.

California State Board of Health.—The Governor of California has entirely reorganized the State Board of Health by appointing the following: Dr. M. Gardner, San Francisco, president; Dr. W. A. Briggs, Sacramento; Dr. O. Stanbury, Chico; Dr. M. Regensburger, San Francisco; Dr. A. C. Hart, Sacramento; Dr. W. LeMoyné Wills, Los Angeles; and Dr. N. K. Foster, Oakland, secretary. The Legislature appropriated and placed in the hands of Governor Pardee (who is himself a physician) \$100,000 as a "contagious disease fund," to be used at his discretion. This board, together with the several local boards, are working in complete harmony with the United States Public Health and Marine-Hospital Service, and the result of united scientific effort can already be seen. Dr. Gardner's death last week is of importance, but it is trusted that his successor will continue on the lines already in operation.

Charges Against Health Department.—The Bureau of Charities in Chicago has made charges against the Health Department of the city. These will be investigated by the city authorities. The charges are as follows: That consumptive patients are allowed to live in lodging houses in direct violation of the law. That "double-decker" beds have been restored in a large number of lodging houses, the Health Department making no attempt to enforce the ordinance against them. That in scarlet fever cases the department often neglects fumigation, and in a large number of instances makes only a faulty fumigation of the house. That typhoid fever in the course of a few years often wipes out whole families, the origin of the disease being laid to unsanitary conditions of which the Health Department has repeatedly been advised. That fruitless attempts to

obtain reform from the department has led the bureau superintendents to resort to private means for a regeneration of unsanitary conditions.

FOREIGN NEWS AND NOTES

GENERAL.

Pasteur Institute.—It is stated that Dr. Emile Roux, who is subdirector of the Pasteur Institute, will present the Osiris Prize of \$20,000, which has lately been awarded to him, to the Pasteur Institute. This prize was founded by M. Daniel Osiris, a wealthy Parisian, to be awarded to the person that the Institute of France considered the most worthy to be thus awarded.

A New Bacillus.—An epidemic disease has been discovered among the eels in the small lakes at Obertello, in the vicinity of Rome, and Dr. F. Inghilleri has discovered in his investigations of this disease a new bacillus, as is announced in a published paper in the *Atti di Linceri*. The disease is known as "red plague," and the author considers it unsafe for eels thus attacked to be used as food.

Emperor William to Stop Ill Treatment of Soldiers.—In his instructions to officers in the Army, Emperor William says: "Officers must explain frequently to the soldiers that it is neither the wish of his Majesty, and their other superiors, nor does it correspond with the reasonable feeling of self-respect of privates, that they silently tolerate ill treatment. If soldiers do not report ill treatment it is well-nigh impossible for their superiors to take steps for their protection, and call to responsibility the officers guilty of cruelties. Soldiers really encourage, through their silence, the rough treatment given them contrary to the rules, and in the course of time this becomes force of habit."

Juvenile Smokers.—The *London Chronicle* states that the proposed bill penalizing juvenile smokers is interesting in that 20 years ago the prohibition of tobacco to children under 16 was proposed in France, but not brought into force. In several other countries, however, juvenile smoking is restricted by law. The nearest instance is Norway, where the sale of tobacco to any boy under 16 is forbidden, except on an order signed by an adult relative or employer. The penalizing fine varies from 2s. to £5. In nearly all the American States there are similar laws, with penalties also for the youthful consumer. It is the same in Canada, and the Government of Victoria is leading the way in Australia. A clause in the licenses of tobacco dealers forbids them to trade with children under the age of 16. More than two years ago the House of Keys discussed a similar law for the Isle of Man.

Women Physicians.—The number of female physicians is increasing every year in all civilized countries of the world. Madame Dr. Melanie Lipinska, a Polish lady now living in Paris, in a recent article in a French contemporary, calls attention to the fact that the first prominent female physician was Florence Nightingale, now an old lady still living in London. The first European university admitting female medical students was Zurich, in 1864. Then followed Paris in 1868, and then London. In 1901 there were altogether 95 female physicians in France, chiefly in Paris. In 1900 there were 11 colleges in England where ladies could study medicine. During the same year there were 258 female physicians in England. There are, furthermore, 156 English female physicians in India, China, Egypt and other Oriental countries. In Switzerland there were in 1900 altogether 355 female medical students. Russian Poland had 90 female physicians in 1900, while in Italy, Portugal, Bulgaria, Roumania, Greece, Belgium, Holland, Sweden and Denmark the number of female physicians did not exceed 20. Up to the year 1890 no female medical students were admitted to any university in Austria-Hungary. Germany opened her universities to female medical students only in the year 1899, and in 1900 there were 406 female medical students at the various universities of the Empire. In 1893 there were already over 2,000 female physicians in the United States.

GREAT BRITAIN.

Suicides Increased.—With the return of spring the increase in the number of suicides in the United Kingdom is again apparent. Recently there has been an epidemic of self-destruction. In the first seventeen days of April no fewer than 40 suicides have been committed in England, Wales, and Scotland. Of this number seven people ended their lives with revolvers, while the means adopted in other cases were as follows: Drowning, 7; hanging, 4; throat-cutting, 5; suicide on railway, 4; opening of artery, 1; poisoning, 4. One-third of the suicides were women.

CONTINENTAL EUROPE.

The Osiris Prize Awarded.—The *Figaro* states that the Institute of France, at a secret meeting, decided to award to Dr. Emile Roux, Sub-Director of the Pasteur Institute, a prize of \$20,000, founded by M. Daniel Osiris for the person that the Institute considered the most worthy to be thus rewarded.

OBITUARIES.

William M. Griffith, of Philadelphia, April 20, aged 54. He was graduated from the Hahnemann Medical College, Philadelphia, in 1872. He was a member of the Oxford Medical Club, the Philadelphia Homeopathic County Medical Society, and the State Homeopathic Medical Society.

Edmund Ludlow, of Paxton, Ill., died at Los Angeles, Cal., April 5. He was graduated from the Northwestern University Medical School, Chicago, in 1895 and had served as interne at St. Luke's Hospital, Chicago, and at the Central Indiana Hospital for the Insane at Indianapolis.

George W. Westlake, at Red Bluff, Cal., April 4, aged 59. He was graduated from the Medical College of Ohio, Cincinnati, in 1866. He was a member of the American Medical Association and was coroner and public administrator of Tehama county, California.

John M. Allen, of Chester, Pa., April 20, aged 84. He was graduated from the University of Pennsylvania in 1840. In 1861 he was appointed an army surgeon, joining the Fifty-fourth Pennsylvania Regiment.

Guy B. Miller, in Paris, France, April 7, aged 30. He was graduated from the College of Physicians and Surgeons, New York, in 1898 and had served as house physician at St. Luke's Hospital.

Hugo Lupinski, of Grand Rapids, Mich., April 7, aged 44. He was graduated from the University of Michigan, Ann Arbor, in 1882, and was a member of the American Medical Association.

R. R. Brelsch, in Ringtown, Pa., April 23. He was graduated from the Jefferson Medical College, Philadelphia, in 1881. He was a director of the First National Bank of Shenandoah.

James B. Greeley, of Merrimack, N. H., April 20, aged 73. During the Civil war he served as surgeon of the First Rhode Island Regiment and was wounded in the second battle of Bull Run.

W. S. Robinson, near Mount Hermon, Va., April 21, aged 73. For ten years he was resident physician at Red Sulphur Springs and two years at Phospho-Lithia Springs.

F. W. Anderson, in Salt Lake, Utah, April 20, aged 81. He was the first president of the Utah Medical Society and the oldest practicing physician in Utah.

Frank B. Williams, of Brooklyn, N. Y., April 19, aged 40. He was graduated from the New York Homeopathic Medical College and Hospital in 1884.

J. W. Fink, in Hillsboro, Ill., April 14, aged 79. He was graduated from the medical department of Washington University, St. Louis, Mo., in 1854.

Samuel P. Timmons, of Louisville, Ky., died at Graham, Tex., April 6, aged 38. He was graduated from the University of Louisville in 1896.

William M. Carothers, of Braddock, Pa., April 12, aged 45. He was graduated from the University of Pennsylvania, Philadelphia, in 1890.

George M. Silvers, in Chicago, Ill., April 15, aged 43. He was graduated from the College of Physicians and Surgeons, New York, in 1878.

Gustave Sussdorf, at San Francisco, Cal., April 4, aged 61. He was graduated from the Long Island College Hospital, Brooklyn, in 1866.

Franklin A. Sherman, in Ballston, N. Y., April 22, aged 75. He was graduated from the Castleton (Vt.) Medical College in 1850.

John A. Evans, in High Hill, Mo., April 8, aged 41. He was graduated from the Missouri Medical College, St. Louis, in 1882.

Hugh Marshall, in Monmouth, Ill., April 11, aged 77. He was graduated from the Rush Medical College, Chicago, in 1852.

Samuel Kalghn, at Leesburg, Va., April 13, aged 69. He was graduated from the Medical College of Ohio, Cincinnati, in 1866.

Daniel H. S. Tutthill, of Chicago, Ill., April 19, aged 43. He was graduated from the Rush Medical College, Chicago, in 1885.

Charles A. Wunsch, in Saranac, Mich., April 8, aged 77. He was graduated from the Cleveland Medical College in 1867.

H. Cushman, of Stromburg, Neb., April 8, aged 65. He was a member of the American Medical Association.

Joel J. Walker, in Hot Springs, Ark., April 9. He was graduated from the Louisville Medical College in 1878.

James M. Brown, of Philadelphia, April 11. He was graduated from the Jefferson Medical College in 1875.

J. H. Clopton, of Huntsville, Ala., April 24. He was graduated from the New York University in 1867.

James M. Tomlinson, in Indianapolis, Ind., April 9, aged 81.

L. H. Gebhard, at Grand View, Texas, April 3, aged 74.

Albert Wyckoff, in Belvidere, N. J., April 13, aged 53.

George H. Welles, of Reading, Pa., April 14, aged 70.

Samuel L. Foulke, of Stroudsburg, Pa., April 18.

T. W. Keith, in Downing, Tex., April 14, aged 36.

E. Gallaupe, at Santa Ana, Cal., April 5, aged 83.

H. N. Coomer, of Ashley, Ohio, April 1, aged 70.

L. M. Bray, of Toone, Tenn., April 11, aged 75.

N. P. Givens, of Bowie, Tex., April 5, aged 60.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

DOSE MEASURES.

BY

M. I. WILBERT,
of Philadelphia.

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The opinions expressed in an editorial on this subject in *American Medicine*, April 4, 1903, would appear to indicate that the majority of medical practitioners do not quite appreciate the trend of recent discussions on dose measures, or the ease with which many of the existing errors could be corrected. While it is true that a discrepancy of a few cubic centimeters either way would be of little importance when the dose of a liquid medicine is a tablespoonful, or a wineglassful, it does matter very materially when the dose to be given is but a half or one teaspoonful. It is this particular feature in the discrepancy of dose measures that is usually lost sight of by the majority of physicians; in fact, many do not even realize that it exists. To illustrate, we will suppose that a physician wishes to administer a comparatively large dose of a potent remedy in solution. With the average medicine glass, that is otherwise correctly graduated, the probable error at the tablespoonful mark is about 3 cc. either way, making the possible variation from 12 cc. to 18 cc., estimating that a tablespoonful is the approximate equivalent of 15 cc. If, however, the prescribed dose is one teaspoonful, the ratio of error is entirely different. With medicine glasses, as usually sold, the actual error in measuring is as great at the teaspoonful as it is at the tablespoonful mark. Estimating 5 cc. as being the equivalent of a teaspoonful, we would have a possible variation of from 2 cc. to 8 cc. as the quantity measured out by different people, or at different times. It will readily be seen that while the variation in the case of the tablespoonful is of comparatively small moment, with the teaspoonful dose the maximum may readily be four or five times that of the minimum quantity measured out. In practice this discrepancy has actually been found to exist, and with the higher priced medicine glasses it is even more exaggerated. The reason for this will become self-apparent when we find that the diameter of these medicine glasses at the teaspoonful mark is from 10 to 20 times that of the height; a very slight difference in reading, therefore, would give us a comparatively great difference in the quantity measured. In addition to this, many of the available medicine glasses are not graduated correctly, particularly for the smaller quantities, making an additional element of possible error to be taken into consideration. Paradoxical as it may seem, the household utensils, from which doses of liquid medicines take their names, do not differ so much in actual capacity as medicine glasses. The different spoons do, however, differ in capacity from the quantities usually accepted as their equivalents. The actual capacity of the average teaspoon, for instance, has been found to be much nearer 5 cc. than one dram, the usually accepted equivalent. An average dessertspoon is the equivalent of two teaspoons, while an ordinary tablespoon very seldom or never holds more than the equivalent of three teaspoonfuls.

The supposed variation in the capacity of these various spoons appears to depend largely, if not entirely, on the amount that can be heaped on the spoon above its normal capacity.

Drops are even more uncertain and variable as dose measures. It is possible, for instance, to vary the number of drops of distilled water that are necessary to weigh one gram from 8 to 50, or even more. This difference in the size and weight of drops becomes even more marked when we compare drops of mixtures containing a variable amount of alcohol, or a solution of salts.

From what has been said, it will be seen that there is considerable room for improvement in the measuring out and administration of liquid medicines. That liquid medicines are more efficient as well as more reliable than pills, powders or compressed tablets will readily be acknowledged by all that

have ever given the subject of absorption and assimilation even cursory consideration. Accepting these statements as being based on fact, it would certainly appear as though some concerted action should be taken to improve, if only in a slight degree, the existing haphazard methods of measuring out doses.

A careful consideration of the set of resolutions adopted at a pharmaceutical meeting held at the Philadelphia College of Pharmacy, and later endorsed by the American Pharmaceutical Association, should convince every thinking physician that present methods of measuring out doses of liquid medicines can be improved on without the undue expenditure of either time or money.

These resolutions, with the preamble, are as follow:

WHEREAS, It is desirable to secure greater accuracy and more uniformity in the measuring out or administration of doses of liquid medicines; therefore be it

Resolved, That we, members of the Philadelphia College of Pharmacy, assembled at this pharmaceutical meeting, recommend the use of accurately graduated glass dose measures; these measures to be constructed so that the height of the contained liquid, at a spoonful mark, is greater than its diameter.

Resolved, That for use in connection with spoons as dose measures we recommend the promulgation of the following definition taken from the French Codex:

"A spoon is full when the liquid it contains comes up to, but does not show a curve above the upper edge or rim of the bowl."

Resolved, That for use in connection with the metric system of weights and measures, we recommend the adoption of the following approximate equivalents of spoonfuls:

One teaspoonful equals 5 cc.

One dessertspoonful equals 2 teaspoonfuls or 10 cc.

One tablespoonful equals 3 teaspoonfuls or 15 cc.

That these resolutions are reasonable cannot be gainsaid, that they are practicable has been averred by many. So far no reasonable objection has been raised to any portion of them, but it will depend entirely on the willingness of the medical practitioners of the country to make them effective.

[The contention of our correspondent for greater accuracy in the measurement of doses of potent drugs is proper and worthy, but until some method is devised by which patients can be standardized, we fear that uncertainty regarding the idiosyncrasy of the patient will render of little avail the greater certainty as to the exact dose. If every patient was built on the normal, decinormal or centinormal plan, then we could by means of an indicator of some sort gauge our doses to the cubic millimeter.

The physiologic susceptibility of the patient to any given drug being to a degree an unknown factor it matters little that the dose vary within narrow limits.]

SOCIAL PROGRESS AND THE EXTINCTION OF TUBERCULOSIS.¹

BY

EMMA L. BILSTEIN, M.D.,

of Canton, Ga.

To the Editor of American Medicine:—In a recent journey from Florida to north Georgia among other small signs of the times I noted in a "curio" shop in St. Augustine an indecent toy for the amusement or disgust of the tourist, who doubtless is oftener amused than disgusted or the toy would not be exhibited. On a druggist's window in the same town appears the inscription, "Alleopathic and Homeopathic Pharmacy," the broad-minded composer of which possessed an ear for rhyme if not an eye for spelling. Conspicuous along the way were osteopathic and eddyopathic signs.

In the "white waiting-room" of the railway station at Marietta, Ga., a notice on the wall reads, "Please do not spit on the floor or stove," which must be very perplexing to the "mountain hoosiers," for if not on the floor or stove where shall they spit? Spit they must. Spitting is the distinctively masculine accomplishment. The tiny boy, while still in petti-

coats and pinafores, begins to practice spitting in imitation of his father, who incessantly sprays saliva round about wherever he goes or stands, with an air of pride in the dangerous, filthy habit. But the spirit of social progress has penetrated even these mountain backwoods. In the coaches of the Atlanta, Knoxville and Northern Railway Company there is an educative notice conspicuously posted that "spitting on the floor tends to spread disease and is otherwise objectionable"—a laudable and intelligent endeavor to teach him who can read that "*malum* and *morbus* are often the same." However, not all the benighted beggars with backwoods behavior belong to the South. Daytona, where I spent five months, was a *noticeably* tidy town until the winter visitors came. Then the parkage was constantly littered and defiled with scraps of paper, skins of fruit, ends of cigars, and other refuse, while notices against spitting and smoking in public buildings, against wheel-riding on the sidewalks, and so forth—*notices* intended for the safety and comfort of all—were daily disregarded, doubtless chiefly by eddyites in the third degree, in which mortal mind disappears, and by followers of Mrs. Post, who obediently "assert the I" and are above (or beneath?) obedience in all else.

On the whole, these occidental mystics, professed and otherwise, with their neglected and misused opportunities for knowing better, are inferior in morals and manners to the simple mountain hoosiers.

THE NUTRITIVE VALUE OF DESICCATED VEGETABLES.

BY

EDWARD R. GREGG, M.D.,

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To the Editor of American Medicine:—In your journal for April 4 I notice an editorial comment on "The Nutritive Value of Desiccated Vegetables." I know something of them from two years' experience with them while in Alaska. On the Pacific Coast one can buy all the desiccated or evaporated potatoes and onions one desires. While other vegetables are also prepared in this way, these two are the most satisfactory. Our party had no other kind of potatoes or onions for a year. We ate the potatoes every day, the onions two or three times a week. They are both palatable and nutritious, although, of course, they have not the full flavor of the fresh vegetable, and they are more fibrous. Even eggs are thus prepared, and go by the name of evaporated eggs. This preparation is put up in tins, and if kept dry does not spoil. The eggs are dried and then pulverized to about the consistency of sawdust, but when dissolved in cool water, beaten and cooked, make a really good omelet. Sweet potatoes and cabbage are put up in cans, and are quite acceptable. There is even a canned preparation of "beef-steak and onions." All of these are well known on the Pacific Coast, and large quantities are sold each year. Some of your Western readers will doubtless respond to your editorial, as these preparations are well known to many of them.

While I am reminiscent, I want to mention another matter. In December, 1898, at Rampart City, Alaska, I performed a laminectomy for fracture of the sixth cervical vertebra. The case did not fall into my hands until about two months after the injury. The classic symptoms of cord pressure were present; the patient was emaciated to the last degree, and had also two large bed sores. In spite of this he stood the operation well, the wound healed by primary union in 11 days and he recovered some motion of forearms and legs, and, in fact, all functions were improving until he died of hypostatic pneumonia about six weeks after the operation. Considering the time elapsing after the injury, I am tempted to count it a successful laminectomy. I have never had one before or since that showed so much improvement, and we have a few in western Pennsylvania. I am desirous of learning, however, if that operation could, by any possible chance, be the first laminectomy performed in Alaska, and if not, how many preceded it?

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ORIGINAL ARTICLES

THE TREATMENT OF THE ACUTE DIARRHEAS OF INFANCY.

BY

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The acute diarrheas of infancy may be divided, on the basis of etiology, into two main classes: those of nervous origin and those due to the action of microorganisms.

Simple Diarrhea.—The diarrheas of nervous origin are the result or manifestation of increased peristalsis. This increased peristalsis may be caused by various conditions acting through the central nervous system or by the mechanical action of undigested food. Among the most important of the conditions acting through the central nervous system are sudden changes in temperature, prolonged exposure to heat or cold, fright and fatigue. Food may fail of digestion either because it is unsuitable for digestion, or because the digestive power is functionally weak. In either case the food acts as a foreign body. The intestinal mucous membrane shows no pathologic lesions unless possibly a slight hyperemia. The number and fluidity of the dejections are increased. Except for the presence of more or less partially or entirely undigested food they are normal in character. Perhaps as good a term as any to apply to these cases of the nervous type is "simple diarrhea." They are rare in comparison with the other forms of diarrhea. Their chief danger lies in the increased susceptibility which they produce to invasion by microorganisms. It is this danger, rather than the severity of the disease itself, which demands appropriate, early and vigorous treatment, even in the mildest cases.

Treatment of Simple Diarrhea.—The first and most important method of treatment is the removal of the cause. This is usually easy when the cause is simply fright or fatigue. When the cause is atmospheric, however, a change of climate may be necessary. When the difficulty is due to undigested food this must be removed. This is best accomplished by castor-oil or calomel. As infants bear castor-oil proportionately better than adults it is usually advisable to give at least two teaspoonfuls. Calomel is best given in doses of 65 mg. ($\frac{1}{10}$ grain) in combination with .065 gram (1 grain) of sodium bicarbonate every half hour or hour until .065 gram (1 grain) has been given. In rare instances it may also be wise to wash out the stomach and colon. The infant should be kept quiet in bed. After the cause has been removed the diarrheas usually ceases. If it does not the treatment should then be directed to the control of the excessive peristalsis. For this purpose opium and astringents may be used. This is, with rare exceptions, however, the only condition in which the use of these remedies is allowable. Opium is best given in the form of paregoric, the dose not exceeding a few drops. I have found tannin or tannalbin, in doses of from .19 to .32 gram (3 to 5 grains), the best of the astringents. As the excessive peristalsis is in many instances merely the expression of general weakness, brandy in doses of a few drops, will often be more efficacious. It is best to withhold food for a few hours and then to begin with a rather dilute, highly alkaline, pasteurized milk.

Infective Diarrhea.—Microorganisms are the cause of the great majority of the acute diarrheas of infancy. These microorganisms may be the usual inhabitants of the intestines or forms not normally present there. The bacteria normally present in the intestines may as the result of abnormal local conditions develop pathogenic properties. These abnormal conditions are usually the result of disturbances of digestion. The bacilli of

the colon group are especially likely to become virulent. The abnormal forms of bacteria almost invariably enter the body with the food. They are chiefly the streptococcus, *Bacillus pyocyaneus* and *Bacillus proteus vulgaris*. Many other forms, chiefly saprophytic, are found, however. Shiga's bacillus and bacilli closely resembling it have recently been found in a number of cases of ileocolitis. Except in the comparatively few instances in which this group of bacilli has been found bacteriologic examinations of the stools have failed to show any very definite relation between any special form of bacteria and variety of diarrheas. Bacteriologic examination of the dejections at present, therefore, affords but little information of value as a basis for either diagnosis or treatment.

The intestines may show all grades of inflammation from simple catarrhal and simple follicular hyperplasia to follicular ulceration and the formation of false membrane. The severity of the symptoms is often no index of the degree of the pathologic changes.

The constitutional symptoms are due partly to the lack of nourishment and the abstraction of fluids, but chiefly to the absorption of toxins. These toxins may be formed within the body or taken in, already formed, with the food. Among the most striking of the symptoms of toxic absorption are reflex vomiting, hyperpyrexia, prostration with cardiac depression, and nervous excitement. The most common manifestations of nervous excitement are restlessness, incessant motion and sleeplessness.

The acute diarrheas due to microorganisms may be roughly divided into several classes which, to a certain extent, call for different lines of treatment. Certain general methods, however, are applicable to all. Among the most important of these is the prophylactic.

Prophylaxis.—This, while important at all times, is especially so in the summer, when these diseases are most common. Infants should be kept in the best possible hygienic surroundings, be given plenty of fresh air and bathed frequently. If feasible they should be sent to the country or seashore during the summer months. Care must be taken not to overfeed them, as less food is needed in warm weather than in cool. Moreover, owing to the depression produced by the heat, the child is less able to digest its food. The deficiency should be made up with water. Apparent hunger is often merely a manifestation of thirst. Much more water should be given, therefore, in warm weather than in cool. As these diarrheas are due to microorganisms, and as these microorganisms are very largely introduced with the food, it is evident that every effort should be made to give the child a fresh and sterile food. Too much care cannot be taken in obtaining, transporting, and preparing milk during the summer months. It must be remembered, moreover, that the sterilization or pasteurization of milk does not destroy toxins which may be present in it; it merely prevents the formation of more. The toxins present in milk before it is sterilized may well be sufficient to cause severe or fatal symptoms.

Hygienic Treatment.—While hygienic measures are of great importance in prophylaxis they are even more so in treatment. The infants should be kept quiet, given the greatest possible amount of fresh air, be lightly clothed and frequently bathed. The napkins should always be immediately disinfected in order to prevent reinfection. If the symptoms do not abate in a few days the children should, if possible, be given the benefit of a change of climate.

Dangers of Opium and Astringents.—Since, as has already been stated, the majority and the most serious of the symptoms are due to the absorption of toxins from the intestines, it is evident that any method of treatment which prevents the natural elimination of these poisonous products in the dejections is absolutely bad. The frequent discharges are nature's attempts to cure. Hence opium in any form is almost positively counterindicated. It can rarely do anything but harm.

Astringents are unsuitable for the same reason. They are less dangerous than opium only because they are less powerful. Opium and astringents should only be used in those rare cases in which peristalsis is excessive and in which the good results of the peristalsis are not commensurate with the worry and exhaustion which it causes, that is, in those cases in which a very large number of small movements containing little or no fecal matter keeps the child constantly excited, prevents him from sleeping and rapidly wears out his strength.

Classification of Infective Diseases.—As already stated the infective diarrheas may be roughly divided, largely on the basis of symptomatology but partly on that of pathology, into several main groups. These are known by various names, the best of which are fermental diarrhea, cholera infantum, and ileocolitis. Almost all of the summer diarrheas belong in the fermental class, ileocolitis being uncommon and cholera infantum exceptional. In making arbitrary divisions on the basis of symptomatology it must always be remembered, however, that in many cases there is absolutely no relation between the severity of the symptoms and that of the pathologic lesions, and that conclusions based on the symptoms alone may be entirely erroneous.

Fermental Diarrhea.—In brief, in fermental diarrhea the number of discharges is only moderate, not usually more than 10 or 12 in 24 hours. They vary in color from yellow and green through all shades of green. They are often watery or frothy, and may contain more or less curds and mucus, but rarely blood. The amount of the discharge is usually comparatively large. The odor is almost always offensive. In some cases it is markedly sour; in others, very foul. On this basis two main classes have been recognized, the acid fermentation and the albuminoid decomposition. It is supposed that in the first class the trouble is due to bacteria which thrive on sugars, and in the second to those which thrive on proteids. This division is, however, of but little practical use. Pain and tenesmus are less prominent symptoms than in ileocolitis. The various constitutional symptoms already spoken of are present in all cases in varying combinations and degrees. All grades of severity are seen, from the mild cases lasting a few days or weeks to those rapidly fatal in a few days or even hours. The pathologic changes are comparatively slight, rarely progressing beyond the stage of simple catarrhal inflammation.

Treatment of Fermental Diarrhea.—The first indication for treatment is to remove the cause, namely, the microorganisms and their toxic products. In mild cases a purge is often all that is necessary. Castor-oil is perhaps the most satisfactory when there is no vomiting, although calomel is applicable in all cases, and is altogether the best when there is vomiting. The dosage is the same as in simple diarrhea. A purge is always necessary, as it is the only way in which the small intestine can be reached. In the severe cases and in all cases in which vomiting is an important symptom, it is advisable to wash out the stomach. This is a simple procedure in infants, causing them but little discomfort or exhaustion. An ordinary soft rubber catheter makes a very satisfactory stomach-tube. Normal salt solution or a weak solution of sodium bicarbonate is somewhat better than plain water. If thirst is a prominent symptom it is well to leave a few ounces of water in the stomach. In the more severe cases it is also advisable to wash out the lower bowel. This is done by passing a rather large soft rubber catheter high into the bowel. Several quarts of liquid from a fountain syringe, not more than three feet above the patient, should be allowed to run in and out. Normal salt solution or a 1% or 2% solution of boric acid are most useful. The importance of thoroughly emptying the alimentary tract from both above and below, as well as by purging, can hardly be overestimated. While irrigation of the colon is most useful in the initial cleaning out in fermental

diarrhea, and may be repeated for a similar purpose later in the course of the disease, it is not indicated as a method of continued treatment. It does not reach the seat of the disease, and may by exciting the patient, especially if frequently repeated, do far more harm than good.

Unfortunately, it is impossible by the methods detailed above to entirely rid the alimentary tract of bacteria. Enough remain, if the conditions are favorable for their multiplication, to keep up or cause a recurrence of the trouble. The condition most favorable for their multiplication is the presence in the intestine of a suitable culture medium. This medium enters the intestine only through the mouth. Hence the next indication for treatment is to prevent the ingestion of any food which will provide such a suitable culture medium. For this reason it is best to cut off all food for at least 24 hours, giving only sterile water. Water is not counterindicated, although food is. In fact, on account of the losses in the dejections, more fluid is needed than under normal conditions. It also serves a useful purpose in favoring the elimination of toxins by the kidneys. An amount of water at least equal to that contained in the usual food supply should therefore be given. More is of advantage. The brilliant results claimed for barley water and rice water in the treatment of the early stages of these cases are probably to a considerable extent due to the fact that they contain so little beside water that their use amounts practically to starvation. (Barley water, as usually prepared, contains 1.5% or less of starch, and little else.)

Unfortunately, again, temporary starvation rarely suffices to diminish the number of bacteria to such an extent that they cannot cause trouble. The patient, however, demands and must have nourishment. The problem is to give it in the least harmful form. This is, of course, the form most unsuitable for the growth of the microorganisms causing the trouble. The odor of the stools, as being characteristic of acid fermentation or albuminoid decomposition, would seem to offer some means of assistance. Unfortunately, this distinction is rarely possible or reliable except in the case of the very sour stools. Here a proteid diet, with an almost complete exclusion of sugar, is indicated and gives satisfactory clinical results. In the majority of cases, however, the process seems to be a more complex one, and there is no indication for or against any special element of the food. It must, therefore, be selected on general principles.

There seems to be a very general feeling that milk in any form is unsuitable in these cases on the ground that the pathogenic microorganisms are usually originally introduced in milk and therefore should thrive better in it than in any other medium. This argument hardly seems sound, however. The bacteria enter in the milk simply because milk is the baby's food, not because it is the best culture medium. No one thinks of choosing milk as the medium on which to grow these same organisms in the laboratory; they choose rather preparations of meat or carbohydrates, the very materials from which the usual substitutes for milk in this disease are made. Clinically, nevertheless, these patients do seem to do better when they are fed for a time on something beside milk. There is much difference of opinion as to how long they should be kept off of milk. Some authorities think that a few days is all that is advisable, others that they should be kept off of milk until the stools are normal no matter how long this may be. This latter position is, I feel sure, a wrong one. It is almost always advisable to return to milk after a few days even if improvement has not been very marked, partly because the substitutes for milk are usually low in nutritive value and partly because the change provides a different soil for the bacteria. Few realize how dilute most of the substitutes for milk are and how little food value they have. Barley water as usually prepared analyzes about .05 of 1% of fat, .25 of 1% of proteids, and 1.56% of

starch. Rice water and arrowroot water are little, if any, stronger. The white of one egg is only equal in nutritive value to $\frac{2}{3}$ of 1 ounce of milk. Beef-juice contains .6 of 1% of fat and 2.9% of proteids, giving a nutritive value, bulk for bulk, only one-quarter as great as milk. Broths contain only about 1% of proteids and hence have very little nutritive value. I feel, therefore, that the favorable results obtained from these substitutes for milk are to a certain extent due to the weakness of the foods. Milk preparations in a similarly dilute form will yield far different results from those obtained when they are given of the usual strengths. As already stated, however, there can be no doubt that these patients do better when milk is temporarily omitted.

Albumin water is best prepared by mixing the white of one egg with from four to eight ounces of water at a temperature of from 104° F. to 108° F. The egg should be mixed in carefully and not beaten. The shreds should be strained out.

Beef-juice is prepared by half-broiling a piece of round steak. The steak is then cut into small pieces and the juice expressed with a beef or lemon squeezer. It is better taken if salted, and may be given undiluted or diluted with warm water.

Barley water is made by boiling two teaspoonfuls of barley flour in a pint of water for 15 or 20 minutes. Water is then added until the amount of the mixture is again brought up to a pint. It is then strained through cheesecloth.

It is often very difficult to determine in a given case which of these preparations to use. If there is evidence of acid fermentation barley water and other cereal decoctions are counterindicated, while if there is evidence of albuminoid decomposition, broths, beef-juice and albumen water should not be given. It must also be remembered that the extractives in beef-juice and broth stimulate peristalsis and tend to keep up the diarrhea. Somatose given in .65 or .97 gram (10 or 15 grain) doses in water is often of service in those cases in which proteids are indicated. In those cases in which it is impossible to determine the nature of the pathologic process, and they make up the great majority, the cereal decoctions are more likely to agree than are preparations of animal proteids. In general, therefore, unless they are distinctly counterindicated, it is safer to begin with the cereal decoctions.

In beginning to feed with preparations of milk, whey is often most useful. It may be made from whole milk or skim milk. In either case it contains about 1% of proteids and 5% of sugar. When made from skim milk it contains almost no fat, while when made from whole milk it contains about 1%. It is prepared by adding a teaspoonful of essence of pepsin or liquid rennet, or a junket tablet to a pint of milk and heating it to from 100° F. to 110° F. until it coagulates. The mass is then broken up and strained through a napkin. If the patient is doing well the whey may be strengthened by the addition of small amounts of cream. If this is done the whey must be heated to 150° F., otherwise the ferment will make curds and whey of the cream also.

If whey is not used the infant should be given a modified milk prepared from fresh milk low in all percentages, highly alkaline and pasteurized. It is better to give small amounts frequently than large at long intervals. Experience only can teach just what percentages should be given in individual cases, barring those cases in which there are definite indications of acid fermentation or albuminoid decomposition. In general, the percentage of sugar may be comparatively high, while that of the proteids must be comparatively low. The fundamental principle, however, is to give a dilute food. As the patient improves the percentages may be increased, together or singly, and the intervals of feeding lengthened until the strength and intervals suitable for a normal infant of the given age are reached.

Breast feeding should not be forgotten in these cases.

After the initial periods of starvation and abstinence from milk it will sometimes result in cure in cases which otherwise seem hopeless. In very critical cases breast-milk may be given diluted with water.

As already stated, the first indication for treatment is to remove the cause. One way to do this is by destroying the cause. In this instance, however, the destruction of the cause involves the destruction of the patient. No germicides in doses large enough to be effectual can be used with safety. Drugs which limit to a certain extent the activity of the microorganisms can, nevertheless, be used to advantage. After a considerable and varied experience with many drugs, including many of the newer preparations, I have discarded all but bismuth. This is best given as the subnitrate or subgallate. Either to be of much use must be given in considerable doses, not less than 4 to 8 grams (1 or 2 drams) in 24 hours. Unfortunately, it is difficult to induce a sick infant to take this amount. About as much can be given in the form of powder, mixed with water or milk, as in any other way. It is often given suspended in chalk mixture or simple mucilage. Any form of mucilage decomposes very rapidly in warm weather, and after it has been kept 24 hours every teaspoonful brings a large reinforcement to the enemy already present in the intestine. The subnitrate of bismuth may be safely given in suspension, however, in the following way:

Ammonio-citrate of bismuth	5 parts
Nitric acid	30 drops
Water	100 parts

The subnitrate formed in this way will remain in suspension for several days. The objection to this preparation is the strong taste of citric acid and the small number of grains to the teaspoon. It is possible to give this, however, when the dry powder will not be taken.

Zinc sulfocarbolate in doses of .010 to .016 gram ($\frac{1}{4}$ to $\frac{1}{2}$ of a grain) seems to diminish the formation of gas and to improve the odor of the stools. Stimulation is necessary on the same indications and along the same lines as in other diseases. Alcohol is counterindicated if there is much irritability of the stomach.

Certain special symptoms, due to toxic absorption, may require special treatment in addition to that for the removal of the cause. Excessive vomiting is best treated by stomach washing, and hyperpyrexia by cold bathing or packs. Extreme restlessness usually yields to bromids but morphin may be necessary. If it is used it is best given subcutaneously. Prostration and collapse require stimulation along the usual lines. Brandy and strychnin are most useful and must often be given under the skin.

All the symptoms due to toxic absorption are at times much relieved by subcutaneous injections of normal salt solution, which favor the elimination of the toxins through the kidneys and skin. Salt solution may also be given as an enema, although when given in this way it is not likely to be retained. Four to six ounces are sufficient for a single subcutaneous injection. The injections may be repeated every four or six hours. Prostration, collapse, and many nervous symptoms are often due to the loss of fluid in the stools and the consequent draining of the tissues. Subcutaneous injections of salt solution are of great value in these conditions and often give immediate relief.

Ileocolitis.—In ileocolitis are found the more severe pathologic lesions. They are usually most marked in the colon and in the lower part of the small intestine. The discharges are numerous, usually comparatively small in amount, contain much mucus, blood, and sometimes pus and membrane. The amount of fecal matter is usually small and often fairly well digested. The odor varies, being putrid when there is deep ulceration and sloughing, and almost *nil* when the discharge is composed principally of mucus. Pain and tenesmus are marked symptoms. The abdomen is often tender. Vomiting is usually not a prominent symptom.

Treatment of Ileocolitis.—The discovery of Shiga's

bacillus and allied bacilli in cases of this disease immediately suggested a specific treatment with injections of the serum of immunized animals. The few patients treated in this way have shown rather varied results. Too much cannot be expected from this method at present, however, when it is remembered that several different, although closely allied, organisms have been found in these cases and that each one calls for a different serum.

The treatment of ileocolitis must, therefore, be along the same lines as that of fermental diarrhea. Purgation, starvation and diet are as important in the one condition as in the other. It is important to give foods which are readily absorbed and which give but a small amount of residue. The inflamed colon is thus less exposed to irritation from masses of digested or undigested feces. For this reason milk, which has a large residue, is to a certain extent counterindicated. Whey, however, is not open to this objection and is most useful. Proteids are better borne in this condition than in fermental diarrhea and should make up a greater portion of the food. White of egg, beef-juice and somatose are especially useful. Fat is not as well borne, however, and should not be given except in very low percentages. Bismuth is even more useful than in fermental diarrhea, serving the double purpose of diminishing fermentation and of mechanically coating over the inflamed surfaces.

Owing to the location of the principal lesions in the large intestine it is possible to reach the seat of disease from below. Irrigation provides a means not only for removing the microorganisms and their toxic products, but also for cleansing the diseased surfaces and making local applications to them. Several quarts should always be used in irrigating the bowel, and as the chief object of irrigation is cleanliness, the liquid should be allowed to run until it returns clear. Normal salt solution and a 1% to 2% solution of boracic acid are most useful. Solutions of the stronger antiseptics are no more efficacious and may be dangerous. Irrigations may be used from one to three times in 24 hours. They should never be used oftener. It is a mistake to use them every hour or two, or after every movement, as is sometimes done. They always cause more or less exhaustion, even when the patient does not resist. If the patient resists a great deal, or is much excited or tired by them, they should be omitted. They should always be used with discretion, as while they often do much good, they may do great harm. In the more chronic cases irrigations of silver nitrate, in the proportion of 1 to 1,000, one in two or three days, seem to hasten recovery. A strong salt solution should always be at hand when this is used, in case it proves too irritating.

Suppositories of .006 to .010 gram ($\frac{1}{10}$ to $\frac{1}{8}$ grain) of cocain will often relieve tenesmus. Opium may sometimes be given in these cases when the peristalsis is excessive and is not serving a useful purpose. Other special symptoms should be treated as in fermental diarrhea.

Cholera Infantum.—This term should be applied only to those cases of diarrhea characterized by the most intense choleric symptoms. It is a very rare condition. The pathologic lesions are very slight, never progressing further than hyperemia and desquamative catarrh. The bacteria found usually belong to the proteus group.

Vomiting and diarrhea are constant, and both soon become almost entirely serous. As the result, all the tissues are rapidly deprived of their fluids. Thirst is marked. Wasting and prostration are extreme. The internal temperature is almost always high, although the surface temperature may be low. There is intense internal congestion. The disease is self-limited. The course is not more than two or three days, usually less. The termination is almost invariably in death, usually after marked nervous symptoms.

Treatment of Cholera Infantum.—In such a rapid and fatal disease it is evident that treatment, to be of avail,

must be immediate and vigorous. It is probable that there is a vasomotor paralysis of the gastrointestinal vessels. Hence food and drugs introduced into the alimentary canal cannot possibly be absorbed. They can do no good, and undoubtedly may do harm.

The main indications for treatment are: (1) To empty the stomach and bowels of their toxic contents; (2) to supply fluid to the tissues which are being so seriously drained; (3) to restore the surface circulation; (4) to reduce the temperature; (5) to keep the patient alive until the disease has run its course.

Purgatives act too slowly to be of much use in this disease and our chief reliance must be placed in stomach washing and intestinal irrigation. They must be used early and vigorously. It is useless to expect to supply fluids by the mouth. They are almost invariably vomited. Cold, sterile water in small amounts may be tried, however. The injection of normal salt solution into the cellular tissue is the only method of introducing fluid which can be depended upon. Not less than a pint should be given in 24 hours. This not only supplies fluid to the tissues but assists in eliminating the toxic substances in the blood and in restoring the surface circulation.

Irrigations of cold water tend to restore the surface circulation and also to reduce the temperature. The best methods for restoring the surface circulation are rubbing, mustard baths, and the warm pack. These procedures, however, are not those best fitted for the reduction of temperature. For this purpose cold, in the form of sponging, packs or baths, must be used. In the treatment of individual patients it is often necessary to determine whether it is the internal congestion or the high temperature which is doing the more harm, and then to treat the more serious condition. The relief of one, however, often aids the other also.

As food cannot be given, the patient must evidently be kept alive by stimulation. As drugs given by the mouth are not absorbed this stimulation must be given subcutaneously. The usual stimulants, alcohol and strychnin, are to be employed. Atropin is especially useful in these cases. It apparently has some special action antagonistic to that of the toxic products of the disease. It is to be used in doses of from .1 to .08 mg. ($\frac{1}{500}$ to $\frac{1}{300}$ grain) repeated every two or three hours as necessary. Morphin is indicated when the diarrhea and vomiting are extreme or when the nervous manifestations are very marked. Doses of .6 mg. ($\frac{1}{100}$ grain) are usually sufficient; they should be given subcutaneously. Care must be taken not to give too much or to continue it too long.

In case improvement begins stimulants and water may be given by the mouth and soon after small amounts of food. It is safer to begin with barley water and later to give a pasteurized fresh milk of very low percentages.

SOME POINTS PERTAINING TO THE THERAPEUTIC MANAGEMENT OF THE UREMIC STATE.¹

BY

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The diversity of opinion as regards various procedures and medicinal agents in the treatment of uremia can be ascribed only to insufficient consideration of the original affection on the basis of which it has developed.

Uremia, an arbitrary designation comprising a multitude of phenomena often unlike in character and intensity in various patients and in the same patients at different periods, is not the exclusive result of one and the same causative factor in every instance. True enough, all uremic manifestations depend upon the condition of the blood, but while this exhibits some characteristics, which are in a measure common to all types of

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uremia, the serum of every variety possesses some distinctive feature. Responsible for this is not only the different underlying renal condition, but also the specific material of the infectious disease in whose wake uremia may appear, and the decomposition products of the retained substances; the formation, quantity and specific state of which, are dependent upon duration of retention, oxidation and the physical condition of the serum.

In the large, white kidney, for instance, the passage of the watery constituent of the blood is seriously interfered with; in contracted kidney there is nothing to prevent its outflow. While at the approach of and during the uremic condition extremes in blood composition may not exist any longer, the sera of uremia on the basis of chronic parenchymatous nephritis are differently constituted in some major points from those of uremia due to interstitial nephritis. The tendency to convulsive phenomena in the one, and to a comatose state in the other variety, may well be explained by the different constitution and physicoelectric behavior of the respective sera.

It is not my intention to dwell upon all discrepant features of the various uremic sera on this occasion; however, in order to demonstrate the necessity of a different and more rational management of the various types of the attack I cannot refrain from briefly alluding to the retention nitrogen, a factor most conspicuous on account of its presence in large amounts in the uremic serum due to interstitial nephritis and by its occurrence in noticeably smaller quantities in the serum of uremia following chronic parenchymatous nephritis or the mixed form of the affection.

Under retention nitrogen in the blood is understood all the nitrogen remaining in the liquid after complete removal of the albuminous substances. The average amount of retention nitrogen¹ in 100 cc. of normal blood serum is between 25 and 30 mgs.; in chronic parenchymatous nephritis without uremia the average quantity amounts to 40 mgs. and in the presence of uremia to about 62 mgs. in 100 cc. blood-serum; in chronic interstitial nephritis without uremia a mean amount of 82 mgs. and when uremia prevailed 130 mgs. retention nitrogen were found in the average; in the mixed type of nephritis without uremia in the mean 51 mgs., and with uremia 120 mgs. retention nitrogen in 100 cc. blood-serum were demonstrated. These figures show that in the blood-serum of chronic parenchymatous nephritis about 35% more retention nitrogen is contained than in the normal liquid; that in interstitial nephritis the retention nitrogen in the blood-serum occurs in twice the amount as in parenchymatous nephritis, and that in the intermediate type of the affection there is contained more nitrogen than in parenchymatous and considerably less than in interstitial nephritis. They further evince that the amount of retention nitrogen is increased in the uremic conditions following the three forms of nephritis and that in the uremic serum in parenchymatous nephritis the amount of retention nitrogen occurs in about half the quantity it is found in the serum of uremia arising as the consequence of chronic interstitial nephritis.

The enormous quantities of retention nitrogen in the serum of chronic interstitial nephritis undoubtedly stand in causative relationship to the natural termination of this disease—uremia. In chronic parenchymatous nephritis uremia is not only a much rarer but also a less grave complication. In about 75% of the cases of uremia due to chronic parenchymatous nephritis which have come under my observation I have seen recovery from the first attack. The comparative infrequency and mildness of the uremic seizures due to chronic parenchymatous nephritis are explained by the fact of the relatively small amount of retention nitrogen.²

The inconsistency of pursuing the same plan of treatment throughout in cases of uremia so unlike in their manifestations and arising from two (or more) so markedly discrepant substrata is obvious. In the following it is neither my purpose to draw the outlines of a complete management of the various uremic states nor do I wish to introduce a new remedial factor, but I want to pass in review some of the therapeutic agents we are familiar with at the present hour, and to point out their particular field of usefulness.

Sweating.—Promotion of the activity of the sudoriferous glands to enhance the excretion of retentia is indicated under certain restrictions in every instance of acute uremia. It has proved of special value when employed soon after the onset of the uremic phenomena. When the attack has persisted for some time, or when a pronounced comatose condition has supervened, sweating, as a rule, is of little or no avail. For reasons already stated, its application has a greater salutary and more lasting effect in uremia having chronic parenchymatous nephritis at its foundation; it is essential that it should bring about the desired result in a short time; too long continued, particularly after marked symptoms of improvement have made their appearance, its beneficial influence at first noticeable, may cease, or it may become a directly harmful agent. That is, by free perspiration considerable amounts of excrementitious substances may be removed from the serum and the watery accumulations; the quantity of water, however, by the medium of which the solids are excreted, is in proportion larger than it exists in the blood. This is evinced by the molecular concentration of the blood-serum, which is most always higher than that of sweat. Withdrawal of indefinite (because unmeasurable) large amounts of water from the serum, in other words, tends to increase still further its hyperosmotic condition and to decrease its conductivity.

If sweating is kept up by active measures, enteroclysis with a weak sodium chloride solution, or hypodermoclysis with a hypotonic solution of NaCl should be performed at certain intervals.

Venesection.—Abstraction of blood is a therapeutic measure of transitory value mostly, but serving a good purpose in many instances of uremia. The most lasting results of bleeding are obtained in cases following acute nephritic conditions, that is in such instances in which the patient is still sthenic and in which the blood has not as yet attained that degree of admixture and impoverishment which it exhibits during the chronic renal affections. Furthermore, uremic manifestations on the basis of chronic parenchymatous nephritis yield more readily to venesection than those which are due to contracted kidney. In children, abstraction of 100 cc. to 250 cc. of blood often effects immediate improvement; in adults not less than from 150 cc. to 250 cc. and if the condition of the patient warrants it, 300, 400, or even 500 cc. of blood should be withdrawn. When the uremic symptoms do not abide after venesection, the procedure may be repeated on one and the same day, provided the patient (abstracting the uremic state) is yet in a comparatively fair condition and the uremic manifestations are the result of an acute renal disturbance. In asthenic and far advanced cases, on the other hand, abstraction of blood is not only useless as a rule but often even injurious.

The frequent salutary results of venesection in the properly selected cases cannot be ascribed to the abstraction of a few hundred cubic centimeters of blood and the proportionate quantity of retained nitrogenous material; furthermore, withdrawal of blood does not in the least interfere with the molecular concentration of the remaining blood nor does it tend to increase the electric conductivity of the blood-serum. We possess no definite information that after bloodletting oxidation is enhanced, a process by which the retentia could be transformed into innocuous substances. Such a transformation—if it really occurred—could probably reduce the

¹ The figures relating to the amount of retention N. were obtained by Strauss: Die chronischen Nierenentzündungen, etc., Berlin, 902.

² Those further interested in this subject I refer to my article: A Contribution to the Pathogenesis of the Uremic State: the Probability of its Physicoelectric Substratum, *Medical Record*, January 24, 1903.

"virulence" of uremic blood in a chemico-toxic sense but it would not materially alter its physico-toxicity. The improvement afforded by venesection is likely due to nothing else but the relief of the vasoconstriction in the kidneys or in the central nervous system or in both these places.

Hypodermoclysis and Infusion.—Subcutaneous or intravenous introduction of a weak solution of sodium chlorid dilutes the blood, produces diuresis and compensates for the amount of blood lost by venesection. The effects are more or less transitory in character, but may endure sufficiently long to bridge over a critical phase in the uremic attack. Intravenous injection, of course, acts more rapidly and vigorously than when the solution is introduced by hypodermoclysis, but its effects are correspondingly less lasting. A sodium chlorid solution which is isotonic to human blood contains 0.9% NaCl. It is the true physiologic salt solution and its intravenous injection after severe hemorrhage is followed by regeneration of the blood-plasma and restoration of the normal volume of blood. In uremia, however, it has been observed that an isotonic sodium chlorid solution does not act as efficiently as one which is hypotonic. For this reason a decinormal NaCl solution containing not quite 0.6% of the salt is usually employed in this condition. This is understood when we remember that the high osmotic tension of uremic serum is not so much due to its ionized as to its neutral molecules. To effect a more general ionization and conductivity water only is essential. We do not need additional electrolytes in the uremic serum which are introduced from without, but we should inject a solvent to facilitate dissociation of the electrolyte molecules existing in the blood. As plain water, however, may call forth too pronounced hypotonicity and as it is a poison to the erythrocytes producing their crenation, a weak solution of NaCl should be resorted to. I have used a 0.5% solution with the utmost benefit to the patient, especially in uremia due to chronic parenchymatous or acute nephritis. The comparatively small amount of nitrogenous retentia in the uremic serum in diffuse nephritis facilitates the reestablishment of its normal conductivity after subcutaneous or intravenous injection of the salt solution; on the other hand, in uremia having chronic interstitial nephritis at its foundation, when the retention nitrogen exists in enormous quantities, and when ion formation and ion movement are more or less paralyzed, not alone water but also goodly amounts of active molecules seem to be indicated. This, however, I wish to have understood as a hypothetic suggestion only, for it is an extraordinary fact that I cannot assign the improvement in a single case of uremia due to interstitial nephritis to the influence of the sodium chlorid solution alone, whether I administered it in hypotonic or isotonic solution, by hypodermoclysis or intravenously.

The minimum amount of the solution to be used should never be less than 125 cc. if injected intravenously, and 250 cc. when administered by hypodermoclysis. Smaller quantities, if at all, produce very limited and rapidly passing effects only. The maximum quantity of decinormal sodium chlorid solution which may be administered in the uremic state at one time should not exceed 750 cc. if employed subcutaneously, and not more than one-third of this if introduced by infusion. The procedure, however, may be repeated two, three, and more times during the 24 hours, especially when it directly precedes phlebotomy or if a considerable amount of blood has been abstracted.

As serum conductivity is enhanced by elevation of its temperature, more good will be accomplished if the saline solution when entering the organism exhibits a temperature above normal blood heat. If utilized by hypodermoclysis it should possess a temperature of from 40° to 41° C. at the moment it enters; injected by infusion it may safely be introduced into the vein at a temperature of from 45° to 48° C.

Administration of Morphin.—When after the employment of chloroform, vasoconstriction and convulsive phenomena do not diminish, small doses of morphin, although not exhibiting specific antidotal properties, may be resorted to. In uremia of acute nephritic states, more particularly, it may tend to bridge over a critical period, although it has never been proved to my satisfaction that the attacks would not have abated in case morphin had not been administered. Its eventual efficacy in controlling uremic convulsions may be due to its retarding the metabolic processes, thereby preventing further accumulation in the blood of katabolic substances, and to its augmentation of vascular tonicity. Convulsive manifestations arising on the basis of chronic parenchymatous nephritis also frequently decline in intensity or cease altogether after the injection of morphin; however, if we remember that about 75% of such cases (whether morphin was administered or not) recover from the first attack, we are forced to conclude that the influence of morphin cannot be a very potent one.

Uremia of chronic interstitial nephritis, characterized in almost every instance by a condition of tranquil coma, very rarely exhibits convulsive phenomena. In the absence of such manifestations there is no occasion at all to employ morphin, and the existence of a comatose state *a priori* precludes its administration.

While, therefore, morphin in small doses is innocuous in uremia of acute renal disease and chronic parenchymatous nephritis, and may possibly be a factor in effecting subsidence of convulsive symptoms, it is not indicated in uremia of chronic interstitial nephritis which presents an entirely different clinical picture, but being comagenous itself, may aggravate the existing comatose condition and hasten a fatal issue.

A CLINICAL AND STATISTICAL REVIEW OF 122 CASES OF ALBUMINURIA AND 48 CASES OF ECLAMPSIA OCCURRING IN THE MATERNITY OF THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

BY

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There have been 122 cases of albuminuria and 48 cases of eclampsia in the University Maternity during the past 13 years. Our records show that 122 women developed albuminuria in the hospital while awaiting delivery. This was discovered by the usual tests for albumin—the test by boiling with acetic acid, and Esbach's albuminometer. Each woman in the Maternity has her urine examined once a week before delivery. Albuminuria is the most reliable indication of kidney insufficiency. The quantitative examination of urea is interesting, but not valuable as an indication of adequate renal action in pregnant women. A great deal has been written upon the importance of estimating the quantity of urea, and positive statements have been made that if the amount falls below 1% the woman is in danger, while the presence of albumin is of secondary importance. This statement is fallacious. To illustrate, recently the urine of eight women awaiting confinement in the University Maternity was examined on the same day and the quantity of urea estimated. The percentage of urea varied from .3 of 1% to 2.8%, and the total quantity excreted from 2.5 to 36 grams a day (the normal being 20 to 24 grams daily). With one exception these women were in perfect health, without a sign of toxemia. The one exception was a woman whose urea percentage was 2.2%, total quantity 30.97 grams in 24 hours, a quantity much above the normal. She had albumin in considerable quantities, and all the premonitory signs of an eclamptic attack—failing vision, spots in front of her eyes, nausea, intense and persistent

headache, etc.—and eclampsia was averted only by energetic treatment. In another series of 32 specimens of urine of women in the last month of pregnancy the percentage of urea varied from .1 of 1% to 3%, the total quantity in 24 hours being from 1.7 to 38 grams. All of these specimens were free from albumin, and the women had no symptoms of toxemia. A patient in private practice had, for the last two months of her pregnancy, never more than .3 of 1%, and usually .1 of 1% of urea, with a total quantity of urine of about 70 ounces a day. According to the advocates of the importance of urea, she was in a dangerous condition. She never had a single bad symptom, and when, merely as a precaution she was placed upon antitoxemic treatment, she became ill, but recovered promptly as soon as all treatment was stopped. She has since been safely delivered. Her urine contained no albumin. Two other patients in private practice excreted .1 of 1% and $\frac{1}{2}$ of 1% urea respectively, far below the normal, and both were safely delivered without any symptoms of toxemia. Another patient was excreting 45 grams of urea a day, nearly 3%, and yet had a steadily increasing quantity of albumin with marked signs of toxemia, and finally labor was induced to avert eclampsia. Within the last few days a patient was admitted to the Maternity in violent eclampsia, with urine solid with albumin on boiling, but containing 1% of urea. She died six hours later. Very rarely albumin fails us as an indication of renal insufficiency, and our attention is first drawn to the woman's condition by the appearance of symptoms of toxemia. When such a patient is put on antitoxemic treatment, her symptoms steadily improve, while the percentage of urea often steadily diminishes in consequence of the milk diet. In view of these facts, which any one can observe in his own practice, it is inconceivable how men of clinical experience and average powers of observation can attach undue importance to the elimination of urea as an indication of toxemia.

When albumin is discovered in the urine of a patient awaiting delivery she is put to bed, her diet is restricted to milk, with addition of large draughts of water. Basham's mixture, in doses of 3ij four times a day, is prescribed, and her bowels are kept loose by means of Rochelle salts, Carlsbad water with Sprudel salts, or some other suitable cathartic. The total quantity of urine for each 24 hours is measured and daily examinations are made for specific gravity, albumin by Esbach's, urea by Doremus' apparatus, and casts and blood cells by the microscope. The majority of cases clear up entirely under this treatment without further complications. The albumin occasionally persists or increases in spite of treatment. In such a case the woman is actively purged by magnesium sulfate in concentrated solution, a dessertspoonful being given every 15 minutes until free catharsis is established. She is also given hot-air baths or hot packs every four hours, being kept in them for 30 minutes, with an ice-cup on her head, until she sweats profusely. In private practice the hot pack is almost always used, on account of the somewhat cumbersome apparatus needed for the proper administration of a hot-air bath. This hot pack can be made much more efficient by the following simple expedient: Eight bricks are heated on the kitchen stove till the hand cannot be borne on them. Each brick is wrapped in a crash bath towel. The bricks are then placed around the patient, and on each towel from four to five ounces of alcohol is poured. The patient is covered by a number of dry blankets. The alcohol is vaporized by the heat, and the woman usually sweats profusely. In hospital practice we usually administer salt solution by hypodermoclysis every four hours, alternating with the hot-air baths, a pint of the solution being introduced under each breast. The routine administration of salt solution in private practice is, as a rule, not practicable. This more energetic treatment must always be expected

to bring on labor, and in the vast majority of cases it will do so. If the symptoms do not show decided improvement inside of 48 hours and labor has not come on spontaneously, induction of labor is indicated, the best method being either the Champétier de Ribes bags, or Krause's method of flexible bougies. Under this treatment of our 122 cases of albuminuria, in which the amount of albumin varied from a trace to one-half by bulk on boiling, only eight, or 6.5%, developed eclampsia, a fact which speaks well for the efficacy of the treatment.

There were 48 cases of eclampsia, of these 15 patients died, or 31.2%; 8 developed in the hospital and 40 were brought to us in the ambulance.

This mortality does not fairly represent the success of treatment. Many of these patients came to us in a desperate condition, some of them moribund. They had had convulsions for 24 to 36 hours, and the deaths occurred within a few hours after their admission.

Excluding, therefore, the 10 patients who died in less than 12 hours after their admission, in whom any plan of treatment would have been unavailing, there is a mortality of 5 cases in 38, or 13.1%.

The number of children born was 50, there being two sets of twins. Seven children were born prematurely between the fifth and eighth months, and all died. Of the 43 children born at term, 17 were stillborn or died a few hours after birth, a mortality of 39.5%. One woman in this list had 5 attacks of eclampsia in 5 successive pregnancies, in all of which she was delivered prematurely. The number of convulsions in the mothers varied from 1 to 36. Of the patients who recovered, 3 had 19, 23 and 20 convulsions respectively. Winkel, of Munich, states that in his experience when a woman has more than 18 convulsions her case may be regarded as hopeless.

The amount of urine secreted during the attack was uniformly very small. Two of the women had complete anuria for 24 and 60 hours respectively, another is recorded as having passed 6 drams in 4 days, the largest amount noted was 6 ounces in the 24 hours. Albumin was invariably present both before and during the attacks. This is a most important clinical fact. The loose statement has been repeatedly made in textbooks and articles on the subject that quite a large proportion of eclamptic cases, some 16%, show no albumin before the onset of convulsions, though it is always present after the attack begins. This is one of the chief arguments of the men who attach such importance to the quantitative estimation of urea, and would have some weight were it true. It is not borne out by clinical evidence. I have knowledge of one such case of eclampsia which showed no albumin before the occurrence of the convulsions, and her urea percentage was almost 2%. In all cases in this report albumin was present in measurable quantity before the occurrence of convulsions. One woman was passing, the day before her convulsions appeared, 41 ounces of urine which contained a measurable trace of albumin, with a nearly normal percentage of urea; after the first convulsion her urine turned solid on boiling. The presence of albumin in the urine is therefore far the most reliable indication of renal insufficiency we possess; the excretion of urea is so variable as to furnish practically no guide to the patient's condition. The amount of albumin present after the convulsions began is recorded as from 10% by bulk to solid on boiling, the majority of the specimens turning solid.

When the kidneys begin to resume their functions the amount of urine excreted is sometimes very great. One of these patients within three days from the beginning of her treatment was passing 156 ounces a day. Seven of the women had albumin persisting after recovery, due to nephritis, while the remaining 26 were discharged with their urine entirely free from albumin.

Coma lasted from two hours to over three days in 17 women. The curious loss of memory we see in patients

with eclampsia who are to all appearances rational, and yet who remember nothing that occurred for some time preceding their first convulsion to some time after the last one, was present in all.

Two of the women had hyperpyrexia running above 110°, and both died.

Three patients were blind on admission. One of them stated that she could not tell when the gas was lighted in her room. All three recovered.

Three women became maniacal. One of these remained permanently insane and was removed to the Philadelphia Hospital, where she still remains. The other two became rational in four and eight days respectively; one of these relapsed for a few days some two weeks later, but ultimately recovered.

The time at which convulsions appeared is interesting:

		Per- cent.	Died.	Percent mortality.
Before labor (none afterward).....	27	56.25	5	19.2
During labor (none afterward).....	1	2.1	.....	.....
After labor (none before).....	11	22.9	7	63.6
Before labor and persisting afterward...	9	18.75	3	33.3
Totals.....	48	100.00	15	

The treatment adopted for eclampsia is as follows: The convulsions are controlled by chloroform, and during the convulsion it is usually necessary to use some form of mouth-gag to keep the patient from biting her tongue. Most of the women in this series sent to the hospital from outside came in with their tongues dreadfully bitten. In the hospital we use the regular form of mouth-gag; in private practice a toothbrush handle wrapped in a handkerchief answers every purpose. The woman is purged by the administration of Epsom salts in concentrated solution ʒij every 15 minutes until a free evacuation occurs. If she cannot swallow, croton-oil, two drops in a little sweet oil, on the back of the tongue, is substituted. If the pulse is very full and bounding, veratrum viride, m xv, is given hypodermically, and repeated in doses of 5 minims every two hours till the pulse softens. Very rarely venesection may be necessary. The patient is given a hot pack or hot-air bath in the manner already described, for 30 minutes every four hours. Hypodermoclysis of Oj of salt solution under each breast is given every four hours, alternating with the hot packs. If the patient is seen far advanced in labor, with the os dilated and the head well down, there is no question of the propriety of terminating the labor with forceps. Little or no anesthesia is required; if an anesthetic is necessary, chloroform should be selected. The question of the forcible termination of labor by rapid dilation of the cervix and version is one which is still undecided.

It will be seen from the foregoing table that over half the patients had convulsions before labor, ceasing directly after delivery. This is a strong argument in favor of the prompt evacuation of the uterus of an eclamptic woman, provided it can be done without too great violence. The force necessary in accouchement forcé has been the great objection heretofore to such a plan, a large proportion of patients dying of shock in consequence of their rapid and violent delivery. In this series of cases four were delivered by rapid dilation and version, three of them dying from shock shortly afterward. Recently we have used Bossi's dilators with extraction of the child by forceps in four cases, with two deaths. In both of these fatal cases the patients were moribund when admitted, one dying less than an hour after admission and the other within six hours. The two women who recovered were easily and quickly delivered, without showing any evidence of shock. The time required to secure a full dilation of the cervix to 11 cm., there being no dilation of the canal at all when the operation was begun, was about 8

minutes. The whole delivery occupies only some 10 or 12 minutes, and is very easily accomplished. If we now possess in these dilators a method of delivering a woman easily and quickly, without severe shock, the procedure is certainly reasonable, and the patient is undoubtedly better off when her uterus is emptied. Care must be taken not to dilate the cervix too rapidly, as the instrument is very powerful and may injure the cervix severely. This method of delivery seems by far the best, if the cervix is undilated, and merits a more extended trial.

Four women were delivered by forceps, the os being dilated and the head well down when they were admitted. All recovered. Labor was induced in eight cases after treatment to secure elimination had been carried out for periods varying from 24 hours to 4 days. One of these women died. One patient was delivered by craniotomy on account of a contracted pelvis. She recovered.

After delivery the convulsions cease in over half the cases. The treatment outlined above should be carried out energetically until the woman is passing large quantities of urine, which she usually begins to do within 48 hours. The severity of the treatment is then gradually relaxed until it is discontinued entirely. Eleven of the patients developed convulsions for the first time after labor, the first convulsion occurring from one-half hour to four days after delivery. Seven of these women, or 63.6%, died. These statistics, agreeing with others lately published, show that postpartum eclampsia is more dangerous than the older statistics would lead us to suppose.

In the majority of cases the women are discharged from the hospital three to four weeks after delivery, with their urine entirely free from albumin, or at the most showing merely a trace. When the albumin persists in measurable quantities, the condition is probably due to actual nephritis, which, as a rule, antedates pregnancy. Casts and a persistent low specific gravity may also be found.

SYPHILITIC TOXEMIC HEMIPLEGIA.¹

BY

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The patient whom I shall study with you is now in good health, but her case, one of transient hemiplegia, is unusual, and presents points of interest that will well bear investigation. We will examine it solely from the point of view of differential diagnosis:

The history is as follows: She is a married woman of 25, and has been an excessive drinker, but denies venereal infection. For several weeks before her admission to the hospital, on February 25, 1903, she had been drinking heavily, but stopped five or six days before her admission. Some time during the debauch a man struck her violently upon the head. The day before her admission she complained of severe headache, and the negro at whose house she was, noticed that this was something other than mere drunkenness, and tried to induce her to take some medicine. The negro could give us no clear account of her symptoms, saying only "she was out of her head and queer." On the day of her admission she suddenly became unconscious and convulsed. When brought to the hospital she was in profound coma, and there were constant clonic twitchings of the arms and legs. Palsy could not be discovered. Examination of the urine showed a distinct line of albumin, but no casts. Her head was shaved and the scalp examined, but no evidence of a fracture was found. There was no discharge from the ears. The skin was free from any syphilitic scars. I saw her for the first time the next day. She was still completely unconscious. Respiration was stertorous and the lips were covered with bloody foam, but there were no convulsive movements. The left pupil was widely dilated and did not respond to light, but the right was normal in size and shape and reacted well.

¹ From a clinical lecture delivered at the Philadelphia Hospital, March 14, 1903.

There was no palsy of the face or extremities. The bladder was incontinent. This I am sure was due to her mental condition, not to palsy. The knee-jerks were present, equal, but not active. Examination of the heart and lungs was negative. Two days after the onset of unconsciousness but not earlier the left arm and leg were distinctly more relaxed, fell more heavily when lifted, than the right. The face was unparalyzed. The left knee-jerk now appeared to be greater than the right but the apparent difference was so slight that I am not sure about it. The plantar jerk on the left side was capricious. Often on stroking the sole there followed a slow extension of the great toe or of several toes but sometimes there was flexion. There was never any reflex movement of the foot or leg. The plantar jerk on the right side was normal. Neither albumin nor casts were present in the urine. On the following day Dr. Charles A. Oliver kindly examined her eyes and reported: "Right pupil 2½ mm. in diameter, left 4. The irides fail to respond to light stimuli, though sluggishly to accommodation and convergence. Eye ground normal. High hypermetropia, more marked in left eye." She was now partially conscious. There was no change in the palsy. She was put upon mercurial inunctions. On the next day consciousness had so far returned that she understood and obeyed simple commands such as to put out the tongue, lift the right hand, and turn the head. She could flex and extend the fingers of the left hand slightly, but had no other movement of the left arm. She could also move the toes of the left foot a little and weakly, and slightly flex and extend the knee. The left lower face was slightly palsied. She could talk, but only in a whisper and only a few words at a time. The speech trouble was not aphasic nor paralytic, but due to weakness and hebétude. There was distinct ptosis of the left eyelid, which had come on within 24 hours. The knee-jerk was distinctly more marked upon the left side. Ankle-clonus was absent and the Achilles jerk was equal on the two sides. Stroking the left sole always caused extension of the great toe with or without similar movement of the other toes. The right plantar jerk continued normal. The left arm and leg were a trifle rigid. The bladder remained incontinent. Sensibility to touch was normal on the palsied side and of course upon the other also. By March 4 she was very much better. She could use the left arm well and move the leg quite strongly, but she could not yet walk. There was still some but only slight ptosis. At rest the pupils were equal and the left responded sluggishly to light, the right promptly. Mentally, she was much clearer, but was still somewhat confused. She could not remember for more than a few minutes that she was in a hospital, could answer a short but not a long question, could give only a disjointed account of the mode of onset of her illness, but on the other hand she knew her nurse, recognized the doctor, and would ask for food and water. She still wet the bed. On March 6 ptosis had disappeared, the knee-jerks were normal, muscular rigidity had passed away, there was no longer a Babinski reflex, and no palsy of the face, arm, or leg. She was still somewhat confused. On March 11 she walked, talked, and thought well. There was neither palsy, ataxia, nor anesthesia of the extremities, and the reflexes were all normal. Pupillary symptoms alone remained. The left pupil, under conditions of equal illumination of both eyes and with accommodation guarded against, was sometimes a little larger than, sometimes equal in size to, the right. Both responded to light and with accommodation. On covering the right pupil the left dilated, but on covering the left the right remained immobile. On looking to the extreme right there was a slight, irregular, lateral oscillation of the eyeballs—an inability to fix the eyes firmly on an object far to the right. This was not a true nystagmus. There was a moderate contraction of the fields of vision without reversal. (She was kept in the hospital until March 24, and during that time there was no recurrence of any symptom.)

We may sum up the case briefly thus: A young woman while recovering from a debauch is seized with headache, becomes queer and dazed, and on the next day falls unconscious and convulsed, the convulsive movements lasting many hours, the unconsciousness several days. While unconscious a slowly oncoming hemiplegia, preceded by dilation of the left pupil, develops; later there are changes in the reflexes, and left-sided ptosis, and consciousness slowly returns; still later the hemiplegia rapidly and completely passes away, the ptosis disappears, and finally, two weeks after the onset, she is, barring slight pupillary disturbances, well.

The interesting question is, What caused the symptoms? The thing first thought of after her admission was fracture of the skull. This was easily excluded and dismissed. The disease that you probably most thought of as I read the history was hysteria. We all think of it first when we see a young woman who without very patent cause presents any nervous symptoms. We often diagnose it on insufficient grounds and through carelessness or mental laziness, and though the word is frequent on the tongues of men the thing is rare, much

rarer than the organic diseases mistaken for it. In this case its exclusion is not difficult. The unconsciousness was not hysteric but was identical in character with that seen only as the result of organic brain disease or some cerebral toxemia. The intensity of the coma, the character of the respiration, the slowness with which consciousness returned, the epileptoid nature of the convulsive movements, entirely unlike that seen in an hysteric fit, all point strongly against hysteria. The kind of hemiplegia present and its mode of onset also indicate some other cause. Remember, it began during coma, not with the onset of unconsciousness, and that it came on slowly, requiring a couple of days before it reached its acme, and then after consciousness had been established slowly passed off. Hysteric hemiplegia does not come on during the fit, but after it, and it is usually accompanied by anesthesia. The pupillary symptoms and the unilateral ptosis do not support the diagnosis of hysteria. The presence of the Babinski jerk is interesting. I do not believe it ever occurs in hysteria, but I am also quite sure that its presence does not prove organic disease of the lateral tract, nor even gross, that is macroscopically visible disease of the brain. I am sure it occurs as a consequence of cerebral cellular poisoning. It has been noticed in the so-called uremic hemiplegia. For these reasons we may dismiss hysteria. Did our patient have some gross organic brain disease? I think not for the following reasons. We may exclude hemorrhage at once because of the age of the patient, the softness of the palpable arteries, and the rapidity and completeness of recovery. Surely there was not a tumor of the brain, for one does not recover so quickly from that even if the growth be a recent, soft, and easily absorbable gumma. Syphilitic endarteritis would explain the symptoms perfectly but not their extremely rapid disappearance. Finally have we to do really with a toxemia? I mean were the symptoms caused by the local and direct action of some poison upon the brain cells producing perversion and abolition of function and causing lesions either invisible or visible only on microscopic examination. There are such intoxications. The one best known is that which occurs in uremia. In it, as is well known, there may be mimicry of cerebral hemorrhage, thrombosis, or even tumor, and at necropsy nothing be found save microscopic changes in the structure of the cerebral nerve cells. Indeed even these are not always present in definite shape. There may be local or general epileptiform convulsions, hemiplegia, aphasia, even an optic neuritis indistinguishable from that seen in tumor. There may be the general symptoms of tumor, headache, vertigo, vomiting. Death may follow or the symptoms may quickly pass off. Frequently, and this is of diagnostic value in distinguishing the condition from hemorrhage, the palsy varies from hour to hour, is now worse, now better. In our case Bright's disease is out of the question. She had, it is true, a transitory albuminuria during the coma, but this is frequent in states of unconsciousness due to cerebral disease from any cause and she presented neither signs nor symptoms of any form of nephritis. Some authorities hold that there is an alcoholic toxemic hemiplegia. I am not willing to deny this dogmatically, but confess I am very skeptical about it. Chronic alcoholism is so very frequently associated with arterial sclerosis and nephritis that I am inclined to believe that the palsies and convulsions are due to them and not to alcoholic toxemia. I know of no case reported presenting the symptoms and the march of symptoms shown by our case, hemiplegia coming on during coma and associated with pupillary symptoms and ptosis, caused by alcohol. Hemorrhage is of course frequent in old alcoholics.

Lead poisoning may cause cerebral symptoms, including hemiplegia, either by the direct action of the lead on the cerebral nerve cells, or of some poison arising in the body because of the metabolic disturbances produced by the lead. Only recently a man, a worker in white lead, was brought to the hospital with the symptoms of an

apoplectic stroke. A few days later he died, and the autopsy showed no gross lesion. In his case there was probably no direct poisoning of the cerebral cells by lead itself, because Dr. Edsal was not able to detect even a trace by chemical examination. Lead poisoning had no part in the illness of the woman before us. We come finally to what I believe to have been the real cause, namely, syphilitic intoxication: the direct action of the virus upon the nerve cells without the production of any lesion sufficiently gross to be visible to the naked eye. It has been known for many years that transient palsies are characteristic of syphilis. It also is of course well known that the characteristic gross lesion of syphilis is endarteritis and inflammation of the neuroglia. It hence was assumed by some that syphilis has no direct influence upon the nerve elements proper, and that disturbance of their functions is caused by mechanical pressure only. The transitory symptoms were explained by the assumption of local vascular spasm. The possibility of local vascular spasm can not be disproved, but its occurrence in a diseased cerebral artery is doubtful. In late years quite a number of cases have come to necropsy which have shown no gross lesion at all, and nothing microscopically except cellular changes more or less definite. We are therefore justified in saying that in syphilis, as in uremia, there may be a true cerebral intoxication. In our case, diagnosis can only be made by exclusion. I am quite sure there was no organic disease in the common meaning of the word—a lesion visible to the naked eye. Recovery was too rapid. On the other hand, the only direct evidence we have of the patient being syphilitic is that she has borne daily inunctions of mercury well, and has grown fat under them, and that the symptoms themselves were characteristic of syphilis.

AN INTERESTING COMPLICATION IN THE DIAGNOSIS OF GALLSTONE.

BY

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Every diagnostician knows the difficulties sometimes encountered in differentiating gallstone colic. Gastralgia, pseudobiliary colic in nervous women, stone in the right kidney, movable kidney with kink of the ureter and consequent distention of the kidney pelvis, and appendicitis are the conditions most frequently confounded with gallstone symptoms. Together with these more common conditions one must bear in mind carcinoma in the epigastric region, diseases of the pancreas, and adhesions between the gallbladder and adjacent organs.

It has recently been my privilege to observe in two patients a condition which I have not before seen mentioned as a possible complication in the diagnosis of gallstones. These have been cases of omental adhesions to old operation wounds situated at some distance from the gallbladder. In one case the diagnosis of gallstones was only tentative, while in the other a positive diagnosis was made. Every surgeon is familiar with various local symptoms due to adhesions; *e. g.*, symptoms of gallstones due to adhesions following a previous cholecystitis or a gallstone operation, gastric symptoms due to adhesions of the stomach, and symptoms of chronic appendicitis following removal of the vermiform appendix. Secondary operations are performed in each of these regions, resulting only in the finding of adhesions and in the entire disappearance of the symptoms after breaking up the adhesions.

Dr. Keen,¹ in his Cartwright lectures, devotes a section to the subject of gastrololysis, or the operation of

loosening the stomach from adhesions, and speaks of the excellent results in relieving symptoms by this operation.

I have seen three cases with well-marked local symptoms due to adhesions of the sigmoid. In each of these cases there were reflex gastric symptoms as well as marked local pain and discomfort. Gastric symptoms are not uncommon in cases of ventral hernia, and formerly the diagnosis was often made of the presence of the stomach in a hernia, when subsequent operation would show the fallacy of such conclusion. Small ventral hernias with omental contents are often accompanied by gastric symptoms, and one of the great difficulties in distinguishing such a hernia from preperitoneal lipoma is the fact that the latter is likewise a frequent cause of gastric symptoms. It is the preperitoneal lipomas which give us a clue to the actual source of the gastric pains. Developing as they do from the subperitoneal fatty tissue, their escape through the vessel openings of the linea alba is followed by a tugging on the peritoneum and resultant reflex gastric pains.

Our observations during abdominal operations under cocain anesthesia, and particularly the accurate results so faithfully recorded by Lennander,¹ all point to the same conclusion, that the pain associated with omental adhesions, like that caused by a preperitoneal lipoma, is a reflex due to disturbance of the parietal peritoneum.

The two following cases are of interest because of the striking manner in which the true diagnosis in the second case was suggested only during the operation, and this as a result of observations made while operating on the first patient. They are reported with the belief that the reader, by bearing them in mind, may some day be saved a disagreeable error in diagnosis, and that the patient may be spared an unnecessary incision or possibly a failure in having his malady discovered during an exploratory operation.

The presence of a scar showing a former abdominal operation should place the surgeon on his guard when making a diagnosis of any obscure abdominal condition, no matter how distant the scar from the site of the annoying symptoms.

CASE I.—Mrs. C., aged 36, entered the Johns Hopkins Hospital June 14, 1901, complaining of headaches, constant pain in the left lower abdomen and much nausea at times. She was married fifteen years ago, and is the mother of two healthy children, aged respectively 13 and 2 years. Both labors were difficult, the first one being a forceps delivery. The perineum was repaired a few years after the first childbirth and again one year after the second child was born.

Since eighteen years of age she has had some dysmenorrhea. She has been troubled with headaches since about the time of her marriage. She dates her present illness, however, from the time of her second pregnancy. About two months before the birth of her second child she was forced to go to bed because of severe pains in the lower left abdomen. On getting up about one month after labor these symptoms grew worse, and she began to suffer with headache, nausea and extreme nervousness, and has been on the verge of invalidism ever since. At the time of admission to the hospital the complaints were as follow: The pain in the left side is of a peculiar drawing character and is exaggerated by exercise. Stooping or sudden turning often causes increase of the pain and intense nausea. The abdomen is frequently distended with gas, and when in this condition the symptoms in the left inguinal region are increased with each deep inspiration. The appetite is usually good. Her digestion is good except for the bloating, which does not seem to be influenced by her meals.

Examination.—The patient is a large well-nourished woman with florid complexion and mucous membranes of good color. The heart and lung examination is negative. The abdomen is full and rounded, the walls being rather thick, but everywhere lax and easily palpated. The liver seems normal in size and the kidneys are in good position. The location of the left inguinal pain seems to be between the anterior spine and the umbilicus, somewhat nearer the spine. Intestinal gurgling is felt here, but no mass can be palpated. Deep pressure over the usual course of the sigmoid causes nausea.

During a period of five days the patient was carefully watched, and she gave the impression of being in a state of nervous exhaustion, but at the same time retaining a splendid

¹The Philadelphia Med. Jour., 1898, Vol. i, p. 829.

¹Beobachtungen über die Sensibilität in der Bauchhöhle; Mitteilungen aus dem Grenzgebieten der Medizin und Chirurgie, 1902, Vol. vii, p. 38.

forced control over her nervous apparatus, and exhibiting none of the phenomena usually classed under the disease neurasthenia.

Although the vaginal outlet had been repaired, it was greatly relaxed, high up in the area of the levator ani muscle, and the uterus was in descensus. Deep pressure in the left ovarian region elicited signs of considerable tenderness, but the pelvic organs seemed normal.

It was decided to repair the vaginal outlet, and then because of her positive complaints, to do an exploratory celiotomy.

Operation, June 19, 1901.—Repair of the relaxed vaginal outlet; freeing of omental adhesions from the left inguinal ring; freeing of sigmoid adhesions; suspension of the uterus.

On opening the abdomen a strip of omentum two inches in width was found stretched across the sigmoid and attached to the left round ligament and to the pelvic wall about the internal inguinal ring. On releasing the omentum, the sigmoid colon was found attached to the venter of the left ilium by a broad area of fairly dense adhesions. These adhesions were freed by cutting with scissors, as they were too firm to peel up by sponge pressure. There was but little hemorrhage. The uterus was suspended high above the symphysis by one silk suture.

July 19, one month after operation, the following note was made: "The patient has been up in a wheel chair daily for the past ten days. During the menstrual period just ended, she suffered considerably with headache, but her general discomfort has been less than usual. Deep massage over the sigmoid is being given 10 minutes daily, and she is having a daily high bowel irrigation with hot water."

She was discharged six weeks after operation in a much improved condition, and she was gaining steadily. For two months after reaching home her progress was satisfactory, but she was then subjected to severe overexertion with family duties, and soon reverted to a condition similar to that before operation. Her family physician wrote me in March, 1902, nine months after operation: "She is never entirely free from pain, and before, during, and for one week after her monthly menses she suffers intensely with severe pains, usually beginning in the right pectoral region, and extending around to the spine, and thence up to the base of the brain. The latter pain is so severe that her head feels drawn back."

The patient returned to me and was admitted to the Church Home in July, 1902. She impressed me at first as suffering with symptoms similar to those complained of at her previous admission to the Johns Hopkins Hospital, but after careful study of her condition for a month a suspicion of gallstones was aroused. She had a great deal of nausea, and her chief pain seemed to be in the region of the gallbladder and upward through the right shoulder. She had distinct and persistent tenderness over the gallbladder and at the lower angle of the right shoulder-blade. After the more severe attacks of pain and nausea the stools were sifted for gallstones, but with negative results.

I called Dr. W. S. Thayer in consultation and he inclined to the diagnosis of intercostal neuralgia. With his advice the patient was given large doses of strychnin carried to the physiologic limit, but this failed to affect her pain.

The patient was kept on general tonics, cold packs, and massage throughout the summer and her condition improved.

But at each menstrual period she was completely prostrated by the general abdominal pain, which was most severe in the region of the sigmoid and the gallbladder. For a week she could take but little nourishment; all active treatment had to be stopped; she was kept in a darkened room and given occasional doses of morphia and other anodynes and hypnotics.

As she was 38 years old I decided to remove the pelvic organs, hoping that by bringing about the menopause she would no longer have these monthly setbacks. The abdominal incision would give opportunity to release the sigmoid adhesions again, which I felt were one source of her pains, and to examine the gallbladder.

On November 5, 1902, I operated and found that the former abdominal wound had slightly separated and was plugged by a very adherent omentum. The omentum was adherent over the sigmoid region as at the former operation, but the sigmoid itself was not so densely bound down as before. The gallbladder was normal and free from stone.

The omentum was released and its ragged edges were resected. The sigmoid was released and after the panhysterectomy two iodoform gauze drains were laid between the sigmoid and the pelvic wall and carried out through the vaginal vault. The gauze was gradually withdrawn from the fourth to the seventh days. Hot vaginal douches were begun on the eighth day. After the twelfth day the foot of the bed was given a daily elevation of about 18 inches in order to cause an upward pull on the lower edge of the omentum. To facilitate further the loosening of the omental adhesions shot bags, one weighing ten and one five pounds, were placed across the pelvic portion of the abdomen while the patient was in the elevated position.

The patient was allowed to leave her bed on the twentieth day but spent from two to four hours in bed each day in the elevated pelvic position. Her first postoperative menstrual epoch occurred about November 20, and for a few days she was very uncomfortable but she rejoiced because of the lessened time and severity of her symptoms. Her December epoch was still less marked. But in spite of her determination to grow well and strong I could see that she was gradually being more

harassed by pain after being up and about the hospital, and on December 26, while taking her tub bath she felt a sensation "as of something snapping" in the lower abdomen, and she had to be helped back to her room. For the succeeding week she suffered from occasional nausea and vomiting and a return of the pain in the gallbladder region and up under the shoulder-blades.

It was evident that the omentum had again become adherent and I decided that her only hope for relief would be in its complete resection.

Our former unhappy experiences demonstrated that it would be necessary after removal of the omentum to keep its stump in the upper abdominal cavity away from the field of operation trauma. It would be desirable therefore to keep the patient in the elevated pelvic position from the time of operation. Another desideratum would be the avoidance of intestinal distention so common after general anesthesia. For these two reasons I attempted the operation under local anesthesia.

I operated on January 7, 1903, using Schleich's solution for the local anesthesia, but on reaching the abdominal cavity the omentum was found so generally and so densely adherent that the patient could not bear the pain incident to its release. After thorough anesthesia with chloroform the omentum was released from dense adhesions to the former wound and to the parietal peritoneum of both inguinal regions. It was resected close to the transverse colon. A knuckle of the sigmoid was freed from the stump of the right ovarian vessels and the main portion of the sigmoid was again freed from the left pelvic wall.

The abdomen was filled with normal salt solution and closed with silver wire mattress sutures. The patient was kept in the elevated pelvic position from the time of the operation. She recovered with very little nausea and no apparent distention.

The patient seemed to have an idiosyncrasy for the formation of adhesions and for a hypersensitiveness of the peritoneum. After 48 hours the bed had to be lowered because of extreme pain in each hypochondriac region, or, in other words, at about the points one would expect the omental stumps of each colonic flexure to lie when the bed was elevated at the foot. Lowering the bed each night seemed to relieve the pain. Turning to either side increased the pain in the opposite hypochondrium. The pain in these regions gradually lessened until the patient regained her feet, when for a few days it was increased if the erect posture was taken. One month after the last operation these pains are gradually growing milder, but a rather severe pain still persists in the region of the right ovarian vessels and down the anterior part of the right thigh. The discomfort of the sigmoid region is greatly decreased, the appetite is better, the patient sleeps without anodynes.

CASE II.—Dr. L., aged 27, entered Dr. Kelly's private sanatorium November 24, 1902, suffering, as he supposed, with gallstones.

On June 8, 1900, he had been operated upon in Philadelphia for catarrhal appendicitis. On about the sixth day his wound broke down, and after the insertion of gauze drainage it healed by granulation. He was catheterized after the appendix operation, and soon became the victim of cystitis and ascending pyelitis.

On July 5, 1900, Dr. Kelly performed left nephrotomy, draining a large abscess of the kidney. The drainage sinus healed kindly, and under treatment with benzoic acid and urotropin the urine became clear, and the patient again enjoyed good health.

The present illness began in May, six months before his second admission to the sanatorium. He was seized with attacks of pain in the hepatic region, and these attacks before the end of a month became very severe. They lasted 15 to 20 minutes, and were accompanied by a rise of temperature of from 2° to 4°, profuse sweating, nausea and at times severe vomiting. He often vomited bile, particularly during early morning attacks.

The pain was most commonly located in the gallbladder region, but it often radiated up under the scapula, and over the deltoid region. At one period he was taking salicylates for supposed rheumatism in the right shoulder. The attacks of pain were generally intermittent, a week elapsing at times between two attacks.

There was marked local tenderness in the hepatic region, the patient being unable during an attack to wear a stiff-bosomed shirt or a vest. Frequently icterus was noticeable and the stools were light-colored, although never of the typical clayey variety. The stools were never sifted for stones and the urine was not examined for the presence of bile.

In view of these symptoms it was not strange that the patient had made his own diagnosis of gallstones and that Dr. Kelly concurred.

Operation, Dr. Kelly.—Exploratory incision over the gallbladder. Loosening of omental adhesions from a ventral hernia in the region of the former appendix incision. Resection of a portion of the omentum. Radical cure of the ventral hernia.

On opening the abdomen a careful examination of the gallbladder and its ducts revealed a normal condition. Dr. Kelly then carefully palpated the right kidney for stone, and began different displacement tests to ascertain whether the kidney could have been interfering with the bile passages, or whether

there was mobility enough to cause kink of the ureter and renal symptoms.

During these manipulations, the presence of the old appendix scar reminded me of the conditions found in my patient a few weeks previously; and on examination, Dr. Kelly found the omentum densely adherent to the abdominal wall about the site of the former operation wound. On freeing the omentum it was found to be partially contained in a small postoperative hernia, the sac of which it completely filled. On withdrawal of the omental contents, the index finger could be inserted to its first joint in the small hernia. The radical operation was done for the hernia. About half the omentum was resected, and the abdominal wound was closed in layers with catgut sutures.

The patient had an uneventful recovery. There was considerable nausea and some distention until the bowels were moved on the fourth day. On the fifth day the foot of the bed was elevated about 12 inches, and this elevation was soon increased to about 18 inches, where it was kept daily throughout the convalescence.

There was some complaint of pain about the two operation wounds during the first week, particularly if the patient attempted to lie on his left side. The patient wrote one month after leaving the sanatorium that he was feeling perfectly well and doing a good deal of work, and wished to know whether he could take up gymnastic training.

PERITONITIS IN TYPHOID FEVER WITHOUT PERFORATION, WITH A REPORT OF ONE CASE CAUSED BY THE BACILLUS TYPHOSUS, AND ANOTHER SIMULATING ACUTE APPENDICITIS.*

BY

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Peritonitis in typhoid fever has been so extensively discussed of late that the diagnosis and treatment of the conditions attendant upon perforation admit of but slight additions, and these will probably be more in the nature of the operative procedures. Depending upon the character of the infection, that is, the organisms present in the peritoneal exudate, there might well be attempted the establishment of an increased local, and possibly general resistance, or even the production of some degree of passive immunization by the local introduction of benign nonspecific solutions or of antitoxins.

Durham's¹ experiments along these lines are most suggestive. By the previous introduction of 1 cc. of a 1% sodium chlorid solution into the peritoneal cavity he was able to protect his animals against what had already been established as a minimal fatal dose of the typhoid bacillus, and with a typhoid antitoxin this protection was three times as efficient. Nor is the action of the antitoxin purely specific, as it increases the resistance to other varieties of bacteria as well, if to a less degree.

Peritonitis without perforation is a sufficiently frequent complication to warrant its consideration. In the records of 4,300 cases reported or quoted by Horton-Smith,² Hölischer,³ and Liebermeister,⁴ it was found 73 times (1.7%), which is approximately one-third as frequent as the perforative form.

The etiology is evident in most instances—namely, a direct extension from or rupture of an intra or extra-abdominal focus of infection which may be suppurative. It frequently happens that no explanation can be found for the origin of the peritonitis. Fitz⁵ gives the following specific causes: Acute intestinal obstruction, rupture of a softened infarction of the spleen, or of the spleen itself, of a softened mesenteric gland, abscess in the wall of the urinary bladder, ovarian and tubal abscesses, abscess in the liver or in the sheath of the rectus muscle, perforation of the gallbladder or as the result of an endometritis due to a concomitant parturition. To these

may be added: By propagation from mucosa to serosa* (Murchison⁶), infarction of the spleen (Liebermeister⁴ and Fraenkel⁸), abscess of the spleen (Curschmann⁹), and thrombosis of the intestinal vessels (Thatcher¹⁰).

In the instances of indeterminate origin, as for example those referred to by Murchison⁶ where the peritonitis developed "before ulceration had commenced and even during the first week of the fever," the bacteria must have reached the peritoneal cavity either by penetrating the intestinal wall or through the general circulation. As Curschmann has pointed out, peritonitis is seldom independent of the specific lesions in the solitary follicles of Peyer's patches. No record is to be found of a peritonitis occurring in those rare instances of typhoid without intestinal lesions. It is most improbable that bacteria ever penetrate a perfectly normal intestinal wall and reach the peritoneum. However, the variations from the normal that make the wall penetrable may be at times comparatively slight (Tavel and Lanz,¹¹ Arndt,¹² Bönneken¹³).

Nothnagel¹⁴ is of the opinion that individual variation plays an important part in the conditions that do permit of this migration of bacteria through the intestinal wall. His conviction came from the great irregularity of the conditions in which it has been observed. Variations in the intestinal circulation, especially with an associated edema, seem particularly apt to predispose to this migration. That the mere presence of bacteria within the peritoneal cavity is commonly insufficient to produce a peritonitis, though a source at times of fatal infection, is too well known from the experiments of Grawitz,¹⁵ Waterhouse,¹⁶ Orth,¹⁷ and Halsted¹⁸ to need any reference. However, the positive results of Burginski¹⁹ and Palowski²⁰ in obtaining a peritonitis by the simple inoculation of virulent bacteria might justify the assumption that such an origin is a clinical possibility however uncommon it may appear to be.

The careful experiments of Dmochowski and Janowski²¹ upon the pyogenic property of the typhoid bacillus show that simple inoculation of the peritoneum does not cause inflammation unless there is produced a simultaneous irritation of the serosa. Even then it is inconstant; results that agree well with the classical experiments with the more common pyogenic microorganisms. From their experimental evidence these authors could not conclude, however, that in man the origin of a peritonitis by the escape of bacteria from the intestine *per contiguum* is impossible. Hölischer attributed the peritonitis without perforation in the Munich cases to a "deep-seated ulceration reaching to the serosa." In such instances there is probably a localized inflammation of the serosa at the base of the ulcers which would be sufficient in the presence of bacteria to give rise to a spreading peritonitis. When there is slight ulceration, or none at all, this etiological factor is hardly conceivable. Decreased power of peritoneal absorption, however, may be an important causative agency in such cases. There is abundant clinical and experimental evidence that this factor predisposes to peritonitis in other conditions than typhoid, and Dmochowski and Panowski have shown that virulent typhoid bacilli may thus give rise to a generalized inflammation of the peritoneum experimentally. They were unable to produce a peritonitis by irritating the peritoneum and then injecting the typhoid bacilli subcutaneously, somewhat after the plan of similar, but successful, experiments of Waterhouse and Orth with *Staphylococcus aureus*. But one positive observation of this nature is reported. Gilbert and Girode,²² in one of many experiments to determine the pyogenic action of the typhoid bacillus, caused a fatal purulent peritonitis in a guineapig 24 hours after the inoculation of 1 cc. of a bouillon culture of the organism subcutaneously in the back. They recovered the bacillus

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* Deulafoy⁷ objects to the expression peritonitis by propagation, as the histological evidence does not support the definition, and he favors the denomination "peritonitis by migration."

in pure culture from the peritoneal exudate. No local predisposing factor could be found. This observation, exceptional as it certainly is, may be taken as indicating that an hematogenous peritonitis is possible in typhoid fever, since from the work of Cole,²³ Auerbach and Unger,²⁴ and others it is certain that bacteremia is common. Moreover, the number of instances where the typhoid bacillus has been the cause of metastatic abscess formation, pleurisy, and even pneumonia, is already large, and additional observations are being constantly made. According to Nothnagel, however, hematogenous peritonitis in acute diseases is the greatest exception, if indeed it ever takes place, which is well confirmed by Flexner's²⁵ study of peritonitis. He found the primary variety only in a terminal infection in chronic diseases, and most frequently in those complicated with ascites. At any rate, in these cases of cryptogenic peritonitis the bacteria, and I think under such conditions the typhoid bacillus is frequently present, reach the peritoneum probably by migration through the intestinal wall or possibly through the lymphatic or general circulation.

A simultaneous if not preexisting localized inflammation of the serosa arising from the path of migration, from a periadenitis, or from a decrease in the normal peritoneal absorption may be taken as the likely secondary etiologic factors, regarding the bacteria as the primary.

The causative significance of simple infarction of the spleen may be disregarded. Fraenkel suggested the possibility, but it was not present in his case. Infarction is of rather frequent occurrence. Horton-Smith found it in 3%, Hoffman²⁶ in 3.6%, and Griessinger²⁶ in 7% of fatal cases, which is more frequent than nonperforative peritonitis, and no causal relationship has been remarked as there would have been had there been frequent association of these conditions. The coagulative necrosis, particularly in the anemic variety, would render the migration of bacteria difficult without some softening. In the experiments of Walthard,²⁷ in which the uterus was ligated, thus making it an infarct, it was found not to act as a predisposing factor to peritonitis in the presence of bacteria, and that after such an inflammation had been induced it played only a passive part. Tavel and Lanz conclude from this that mere injury to the serosa is insufficient to aid in the causation of a peritonitis unless there can and does develop from this injury an inflammatory reaction. Halsted tied off a tip of omentum with silk thread and then applied a bouillon culture of *Staphylococcus aureus*. Of the eight dogs so treated, two developed a general and two a localized peritonitis, whereas four recovered without any local reaction. The omentum is particularly prone to react to mechanical irritation, so that in these experiments the positive results could easily be accounted for by an inflammation due to the foreign body and arising on the proximal side of the ligature.

There is one condition that theoretically, at least, is a predisposing factor in the development of nonperforative peritonitis, and to which no allusion is to be found, namely, meteorism. The untoward effects of grave distention upon the clinical condition and prognosis are only too well recognized. The tenderness that may occur with advanced meteorism can mask almost completely the symptoms of peritonitis in certain cases. The origin of the distention is to be attributed to the defective tone in the walls with serous infiltration in severe cases (Osler²⁸) resulting from the intensity of the general intoxication (Curschmann²⁹). Nothnagel³⁰ supposes that a slight primary distention may lead to the formation of a vicious circle by the progressively increasing limitation of the intestinal absorption and thus to a consequently greater distention and advancing paresis of the intestinal muscles. This conception is based on clinical and experimental observations, and thus is explained those extreme cases of enormous distention simulating the conditions secondary to intestinal stenosis. Indeed,

they are entirely comparable to bowel obstruction excepting as to the causation.

Anyone who has seen the autopsies on such cases must have noticed the numerous sharp angular bends in the intestinal coils, practically a series of physiologic obstructions, with the tense thin-walled sausage-like bowel between them. The futility of attempting to relieve such conditions by any but the most radical methods is evident. Those who have seen multiple enterotomy done in such conditions can recall the great difficulty of even thus expelling the gaseous and fluid bowel contents.

Experimentally Grawitz has demonstrated that meteorism associated with an intact mucosa is not accompanied with a migration of bacteria into the peritoneal cavity, but when there is a concomitant ulceration or necrosis of the mucosa or diphtheric inflammation this transmigration is present and these organisms are then capable of causing a peritonitis. The inhibition of the vermicular movements of the intestine and the limitation of the action of the diaphragm must result in a decrease in the peritoneal absorption, a secondary cause of peritonitis even in the presence of the typhoid bacillus alone. As these conditions are exactly those present with the meteorism of typhoid fever and as distention is a well recognized predisposing factor to perforation it is perfectly reasonable to propose the performance of a low ileostomy in cases of progressing or intractable tympanites. Not only would this aid in overcoming a very serious complication that is otherwise practically irremediable, but would have a certain prophylactic value against peritonitis. Three years ago Cushing³¹ advocated this procedure in treating peritonitis resulting from perforation when associated with distention and deep ulceration and employed it once in a secondary operation under these conditions. Escher³² has recently reported the successful application of this method in three out of four cases. The operation may be done quickly and without in itself being detrimental to the patient's condition. The exact location for the establishment of the fistula would, of course, have to be determined by the conditions found in the bowel, such as the location and depth of the ulcers. From Escher's results it would appear that spontaneous closure was to be expected so that the dangers of a second operation might be somewhat disregarded.

The bacteriology of nonperforative peritonitis has been too little observed to give any clue as to the microorganisms most frequently present. It is possible, however, that the typhoid bacillus occurs more frequently, particularly in pure culture, than in the perforative cases. In the few instances where it has occurred there has usually followed a rapidly fatal inflammation that has fallen in well with the dictum that the extent of the local lesion varies inversely with the severity of the infection. This indicates, as Shattuck, Warren, and Cobb³³ have pointed out, a most unexpected virulence in the typhoid bacillus. The longer the inflammation exists, as exemplified by the localized forms and by Körte's case, the more pronounced is the degree of suppuration coinciding with the observations on the action of the pyogenic cocci.

Pathologically there is nothing characteristic about the peritonitis. It may be general or localized, serofibrinous or purulent. The assumption that the nonperforative inflammation is more apt to be localized because of a slower invasion of the peritoneum does not seem to be borne out. However, it must be remembered that such conditions would be the less apt to lead to operation or to autopsy.

The records of 12 cases of generalized peritonitis with fairly complete clinical notes have been found; they are reported by Gairdner,³⁴ Shattuck, Cobb and Warren, Körte,³⁵ and Moser.³⁶ To these are added two cases: One occurred in the service of Dr. Edsall at the Episcopal Hospital, and the other came to autopsy during Prof.

Flexner's service at the Philadelphia Hospital. A study of the clinical histories of these cases, adding where possible data from the incomplete records of seven others referred to by Murchison, Keen,³⁷ Loison,³⁸ and McCrae and Mitchell,³⁹ has developed the following facts: The average age is 21; the oldest 50; the youngest 6; 14 out of 18 below 30; 7 in the second and 6 in the third decades; 8 males; 6 females; the time of onset of the peritonitic symptoms was most frequently at (about the twenty-second day) the end of the third week; the earliest on the tenth, and the latest on the thirty-sixth day. Five of the 13 were suffering from a severe attack of the fever; in 4 it was not stated; 3 were but mildly affected; 1 moderately so, and 1 (Dr. Edsall's case) was a typical example of walking typhoid. It is interesting that of the three mild cases two had but little ulceration, and the third was caused by a rupture of the mesenteric glands. There were five cases associated with intestinal hemorrhages, in two of which a hemorrhage immediately preceded the appearance of the peritonitic symptoms. In one case that had had hemorrhage, the peritonitis followed the rupture of a mesenteric gland. Two had previous abdominal tenderness and one tympanites and diarrhea. Distention was noted at operation several times, but it was not stated to have preceded the symptoms of peritonitis. In 11 of the 14 cases the onset was acute, the one of these occurring in walking typhoid was diagnosed appendicitis. All the others were thought to be perforation or peritonitis following perforation. The three cases with a gradual onset were all suffering from a sharp attack, and in two at least there was some stupor. The abdominal pain is the most constant symptom noted. It may be diffuse and general, but is more often more particularly referred to the right side. It may be in the upper part of the abdomen. The condition of the abdomen was not noted in each instance, but rigidity appears to be commonly if not constantly present at some time during the development of the peritonitis. There may be a rise or fall in the temperature, or the fall may be preceded by a rise. The pulse-rate seems to follow the temperature curve somewhat. The leukocytes have been counted in but three cases. In the one suspected of being appendicitis they were 9,000 just before operation, in another they were 7,000 before and 12,000 after the onset of the peritonitic symptoms; in the third no count was made before the signs of supposed perforation were recognized; three subsequent counts varied between 7,000 and 8,000. The evident similarity to the conditions existing with perforation is striking.

The results of the peritonitis continue the analogy. Of the 11 cases operated on 4 recovered, and of 9 unoperated cases all died, or naturally they would not have been recognized as of nonperforative origin. It is manifestly impossible to come to any conclusion as to the proportion of spontaneous recoveries, but it cannot be far from that of the perforative type. In the Basle cases the nonperforative form was present 16 times with 13 deaths, but no clinical data were found relative to them. The following pathologic condition was found at the time of operation or postmortem: In 8 cases the ulceration was deep, in 4 reaching to the serosa; in 3 there was little ulceration, and in 2 there had been rupture of the mesenteric lymph glands. In 1 case the peritonitis was thought to have started from a suppurating but unruptured lymph gland. The bases of these ulcers may be found to be more or less necrotic or the corresponding serosa covered with a localized exudate of fibrin, or there may be no relationship between the condition of the serosa and the ulceration. Infarction of the spleen was present twice, once hemorrhagic and associated with considerable intestinal ulceration, and once anemic and associated with very slight ulceration. Ileocolotyphus was present once, and the ulceration was considerable. The peritonitis was variously described as serofibrinous, seropurulent and

fibrinopurulent. Cultures were taken at operation twice; no growth developed from either, but in one a cover slip preparation showed cocci and bacilli. In Körte's case an exploratory paracentesis was done and the typhoid bacillus was obtained in pure culture. The typhoid bacillus has been found three times in pure culture in the postmortem examination of the peritoneum, once with a ruptured lymph gland, once with a ruptured spleen, and once in the case reported here where there was no definite cause.

It is evident that so far as can be judged from so small a number of cases and from the findings of Hölscher that the majority of cases of nonperforative peritonitis are consequent upon deep-seated intestinal ulceration. However, from a comparison of the clinical histories and the anatomic conditions which were subsequently found, there appears to be no relationship whatever between the character and acuteness of the onset, the severity of the resulting peritonitis, and the nature of the intestinal lesion, *i. e.*, whether the ulceration is slight or deep and even with a necrotic base. The ruptured lymph glands in both cases lead to a sudden onset and a severe peritonitis. One was operated on, and both were rapidly fatal. The case supposed to be due to extension of the infection from a lymph gland lived 25 days after the onset of peritonitis and two days after operation, which apparently would never have been performed had not the development of a suppurative parotitis demanded surgical procedure. The pus from the parotid contained the typhoid bacillus and a staphylococcus.

The clinical diagnoses in these cases were made from symptoms arising from peritoneal inflammation, and it was impossible in a single instance to differentiate them from cases of perforation, for which they were all mistaken, except the one diagnosed appendicitis. This is exactly in accordance with an opinion expressed years ago by Fitz: "The so-called symptoms of perforation merely indicate the beginning of a peritonitis, and may be present as the result of other local causes of peritonitis in typhoid fever than a perforative enteritis." Shattuck, Cobb, and Warren have more recently given expression to the same conviction. The preperforative stage described by Cushing⁴⁰ is doubtless present in a certain number of cases, but the perforation may not take place or adhesions form, whereas the peritonitis is already established.

The study of the conditions causing or caused by the localized form of nonperforative peritonitis is less satisfactory. Fairly numerous records are to be found of instances of intraabdominal abscess formation. Some have healed spontaneously by discharging into the intestine or externally. Others have been successfully opened and drained. These that have been examined postmortem show that the origin may be traced to the same conditions that cause the general peritonitis with or without perforation. It is probable that there is also similarity to the clinical conditions under which the general form occurs; namely, the age, sex (all of the four recorded cases, however, are in males), time of onset, character of the attack, etc. The symptoms are somewhat varied—there may be an acute onset that is in no way to be distinguished from that seen in the spreading form, then a gradual decrease in the severe symptoms, and a formation of an abdominal tumor with or without symptoms directly referable to it. In other cases associated with little more than a rise in temperature and probably a leukocytosis, there is gradually formed an intraabdominal swelling, which may be without pain and tenderness. The rupture of the spleen or of an abscess, or a softened infarction in it, may give rise to a local or general peritonitis. This complication might be recognized, as Curschmann⁴¹ has suggested, by the sudden appearance of pain in the left flank, just beneath the costal margin. Such a diagnosis could only be made by exclusion, and in view of the great rarity

of the complication and the variation in subjective symptoms it would be apt to escape detection. McCrae⁴² thinks that certain of those cases of obscure abdominal pain in the course of the fever may be due rarely to a localized inflammation over the base of an intestinal ulcer. As evidence he reports a laparotomy done under local anesthesia for suspected perforation. An area of slight exudation was found over the base of an ulcer, which when touched caused pain like that experienced before the abdomen was opened. The surrounding intestine was devoid of painful sensation.

As examples illustrating the conditions as described above may be taken the following cases reported respectively by Fraenkel, Klein,⁴³ and Roux⁴⁴:

1. Male, aged 20. Severe primary attack complicated by bronchopneumonia and facial erysipelas. On the sixth day of a relapse these developed signs of peritonitis which gradually disappeared. Four and a half months after the onset of the fever a tumor appeared in the left lower quadrant of the abdomen. This was aspirated and finally incised. Death took place later from ileus. No cause for the peritonitis could be found at the postmortem examination.

2. Male, aged 34. Suffered from a primary attack lasting 40 days, was then afebrile for 10 days, when his temperature rose to 103°. There was an increase in the area of dullness over the spleen, but no tenderness. This area of dullness and an underlying tumor gradually increased in size. Aspiration followed by incision, with evacuation of three liters of pus, and drainage resulted in recovery. Neither the spleen nor any other structures could be recognized at operation.

3. Male, aged 21. On the twenty-second day of a moderately severe attack complained of a severe pain beneath the left costal margin. Tenderness was present. Perforation was suspected. He grew weaker and died on the thirty-third day. *Phlegmasia alba dolens* developed in the last two days of life. At autopsy the intestinal ulcers were found to be healing and there was no perforation. The spleen was found adherent at its lower pole to the parietal peritoneum. Breaking up these adhesions disclosed an abscess the size of a walnut. In the splenic pulp were found other abscesses the size of "kidney beans."

From all of these cases, as well as one reported by Lehmann⁴⁵ and apparently due to suppuration in a mesenteric gland which seems not to have ruptured, the *Bacillus typhosus* was recovered in pure culture. No other reported cases of localized abscess formation were found in which it seemed fairly certain that no perforation had occurred. These findings give additional evidence in favor of the assumption that the nonperforative infections are usually caused by the typhoid bacillus. The prognosis in these cases of intraabdominal abscess formation is manifestly good so far as death from peritonitis is concerned if the proper procedures are promptly instituted.

Dr. Edsall kindly furnished me with the history of the case simulating appendicitis, an abstract of which follows. I also wish to thank him for the permission to publish it here:

G. G., aged 30, male. Barber. Admitted to the Episcopal Hospital November 2, 1902. Discharged December 27, 1902. There was no history of a previous typhoid attack. The illness began about a month before admission with transient chilly sensations occurring in the afternoon and evening which persisted for about ten days. There was some associated headache which continued somewhat longer. The bowels were constipated. A moderate diarrhea followed the use of a laxative and continued to the onset of the abdominal pain, which was sudden, severe, and general. Up to this time the patient had kept at work. Several hours later there was nausea and vomiting. This was succeeded by eructations.

On admission the tongue was dry and brown. The abdomen was distended and rigid, particularly on the right side. The tenderness was diffuse and general. The areas of liver and spleen dullness were normal and the spleen impalpable. Leukocytes, 9,000.

Operation by Dr. Hutchinson 47 hours after onset of pain. Incision through the right rectus. Yellow purulent fluid welled up when the peritoneum was opened. Fibrin flakes were present on the intestine and the purulent fluid was found free in the general cavity. The appendix was removed, but as it was not the cause of the peritonitis the ileum was examined. It appeared congested and suggested typhoid; 35 cm. to 40 cm. from the cecum a tip of the omentum was found adherent to the ileum at a point opposite the mesenteric attachment. Removal of the omentum disclosed the base of a well-marked ulcer, with a dark central spot but no macroscopic perforation was to be made out. This whole area was inverted by inter-

rupted sutures. Other ulcers were observed, but none deep enough to require inversion. The abdomen was washed out with hot saline solution and the wound partially closed; gauze and rubber tube drainage.

The patient made an uninterrupted recovery and was discharged well on the thirty-sixth day after operation.

For the following clinical notes on the other case I am indebted to Dr. R. H. Spangler, of the Philadelphia Hospital:

M. C., aged 24. Norwegian sailor. Admitted November 18, 1902; died November 25, 1902. He was brought in an ambulance to the Philadelphia Hospital complaining of general indisposition, slight cough, diarrhea, and some abdominal pain. There was a history of a gradual onset two weeks previously, while on shipboard, with loss of appetite, diarrhea, headache, chilly sensations, and general malaise. The progress of the disease up to the time of admission was uneventful.

On examination at the hospital he presented a quite characteristic typhoid condition. The pulse was rapid, weak, and distinctly dicrotic. On the abdomen were found typical rose spots. Palpation revealed an enlarged spleen and some rigidity of the abdominal muscles and a moderate degree of distention. No tenderness was noted.

The general condition appeared good and there was a satisfactory reaction to sponges manifested at once. His temperature on the morning of admission was 102.2° and reached 104.2° late in the afternoon. Through the day there was complaint of chilly feeling and abdominal pains. During the next three days his condition became progressively worse. Restlessness, delirium, and carphologia developed and later incontinence of urine and feces. The stools were fluid, yellowish and fairly frequent, two to five a day. The temperature varied from 101° to 104.5°. The pulse became more rapid and weaker.

On the fourth day after admission the patient complained of more abdominal pain. He was very restless during the day and delirious at night, trying repeatedly to get out of bed. During the 24 hours he had two shaking chills, the temperature reaching 103.8° after one at 10 a.m., and 103.6° after the second at 11 p.m. The leukocytes were 7,000. On the morning of the fifth day there was little change in the general condition, but the pulse became weaker and the distention was more evident. At 11 a.m. he vomited a large amount of greenish fluid. The delirium and incontinence continued. By 2 p.m. his temperature had dropped in 10 hours from 102.5° to 97°. He had become very restless, the abdomen was more tender and tympanitic. The patient was lying on his back with the thighs slightly flexed. The leukocytes were 7,200. Dr. Hughes, who saw him at this time, made a diagnosis of perforation. At 4 p.m. the abdominal distention and tenderness had increased. Dr. Salinger concurred in the diagnosis of peritonitis and the patient was at once transferred to the surgical department where the following note was made:

The temperature has fallen in the last 12 hours from 103.4° to subnormal. Abdominal distention and tenderness are very noticeable. The superficial abdominal veins are distended. The leukocyte count is 7,900.

At 6.45 p.m. an operation was performed by Dr. Hearn. The abdominal cavity was opened through a median incision and immediately the greatly distended loops of intestine forced themselves out through the wound. The intestines were deeply congested and in spots ecchymotic. The mesentery was also deeply congested and here and there contained dark red enlargements suggesting thrombi. In spite of a most careful search no sign of perforation was found nor was the contained abdominal fluid in the least suggestive of a perforation. During the operation the exposed intestines became more deeply congested and in places almost black. After a thorough irrigation the intestines were replaced and the wound closed with interrupted through-and-through sutures.

During the night the patient was continuously restless and delirious. The vomiting and incontinence continued. The distention persisted. At 6 o'clock in the morning the temperature had risen to 105.4°; it fell gradually to 98.6° at 2 p.m., rising to 105° at 11 p.m. Active delirium persisted during the day so that forcible restraint was at times necessary. The face and body became markedly cyanotic during the evening. The general condition grew weaker steadily and he died quietly at 11 p.m. on the night of about the twenty-first day of his illness.

At the necropsy, done 17½ hours after postmortem, the following conditions were found:

The body was that of a large, moderately well-nourished male; rigor mortis was present. There was a marked pallor of the lips and conjunctivas. The pupils were equal. Over the abdomen and thorax were scattered irregular patches of bluish-red discoloration of the skin. In the fold of the left elbow was a short closed incision (transfusion). Below the umbilicus and just to the right of the middle line was an incision 8 cm. in length closed by interrupted sutures. The abdomen was much distended, tense and extremely tympanitic, with only a slight relative dullness in the flanks. On opening the peritoneal cavity the intestines were found to be greatly distended and congested and largely covered with a dry granular, fibrinous exudate. Many moist yellowish flakes of fibrin were also present. There were a few slight fibrinous adhesions between the loops of bowel and the mesial side of the abdominal wound.

Contiguous serous surfaces were found glued together by similar material. In the dependent parts of the abdominal cavity and in the pelvis there was an excess of slightly turbid fluid. (Cultures were taken from this fluid; the needle was also rubbed gently over the fibrinous exudate.) The distention was found to be quite general except for a localized contraction in the sigmoid flexure, but nothing seen was indicative in the slightest of an obstruction. The distention was somewhat less in the upper jejunum and the distal portion of the ileum. The greatest injection seemed to be confined to the jejunum and upper ileum, showing here also occasional ecchymotic patches. In the greater part of the ileum there was almost no deep injection, but there appeared here and there deep red (and some black) thickened patches. These were inconstant in their position, not corresponding to the lymphoid structures of the intestine in many cases. They varied in size from that of a dime to that of a quarter, and were all apparently beneath the serous surface. At no place could the Peyer's patches be definitely recognized from the outside of the intestine; nor could the slightest evidence of a perforation be found, no gas escaping even under considerable pressure upon the intestinal contents. The appendix was free and hung into the pelvic cavity, its serous surface was but little affected in the general process. The mesenteric glands were enlarged but firm, and of a very curious brown color. It was thought that these glands had been seen during operation, and raised the question of thrombosis. There was no evidence of any more acute or long long standing process noticed about any of them than existed elsewhere in the peritoneal cavity. Aside from the slight fibrinous adhesions described above the peritoneal cavity was free.

Thorax.—Both pleural sacs contained old fibrous adhesions which almost obliterated the right cavity. The apex of the left lung was puckered and consolidated, but otherwise the lungs were crepitant throughout. On section, the right apex showed characteristic appearances of tuberculosis, caseous, and a few miliary tubercles with some gelatinous and caseous pneumonia. The rest of the lung was apparently normal, showing only slight hypostatic congestion.

The pericardial cavity was free from adhesions and contained a slight excess of clear fluid. The heart, which was not enlarged, was somewhat soft, and aside from well-marked fatty changes in the myocardium was entirely normal. Weight, 230 grams.

Spleen was enlarged, somewhat soft, and the surface smooth except for the slight fibrinous exudate. At both poles were irregular white areas a little raised above the surface and slightly firmer than the balance of the spleen. On section, the pulp was found to be pale, quite soft, and the malpighian bodies obscured. The white areas above described were seen to enter irregularly into the spleen tissue and to have a sharp margin about which was a very distinct, narrow, and slightly darker reddish rim. The cut surface was opaque, white, dry, and granular, and very slightly raised above the cut surface of the more normal spleen. No softened areas were encountered though the infarcted areas were cut into thin sections. Weight, 200 grams.

Liver.—The surface was found to be generally covered with the same granular fibrinous exudate which, as elsewhere, was easily removed. Otherwise there was no apparent abnormality. The cut section was firm and pale, and the lobular markings quite obscured. Here and there were to be seen a very few fine, opaque, white foci. No areas of softening were found. Weight, 14,500 grams.

The gallbladder and bile ducts were smooth and free. The contained bile unusually watery and of a very light green color.

Kidneys were normal in size and consistence. The capsule stripped away easily, leaving a slightly injected, smooth surface. On section the epithelium looked yellowish and opaque. The cortex was normal and the glomeruli were distinctly visible.

Bladder was moderately distended with cloudy urine, but the mucosa was quite normal. The genitalia was apparently normal.

Pancreas was normal in size, shape, consistence, and in the appearance of cut sections.

Stomach contained a slight amount of tenacious mucus; the mucosa was very slightly injected. Just beyond the pylorus the duodenum was slightly injected.

Intestines.—The jejunum in its upper portion showed a slight diffuse injection of the mucosa and in the lower jejunum and ileum occurred those dark, thickened areas above described. Over these the mucosa was apparently intact and unchanged. Sections of the intestinal wall through these patches showed lenticular accumulation of blood within the tissue of the intestinal wall. Their noncoincidence with the lymphoid tissue was again evidenced. These same hemorrhagic plaques were found irregularly throughout the small intestine, but were more numerous in the ileum. In the ileum there was a similar injection of the mucosa, nowhere particularly pronounced. The first Peyer's patches encountered were evidently not much changed. They, however, began to show some slight swelling as the cecum was approached, but the mucosa over them seemed to be intact. In the center of the most distal patch a small irregular excoriation was found, which extended very slightly into the subjacent tissue. The base of this ulcer was

rough, uneven, and necrotic, the slough evidently having been incompletely removed. The Peyer's patches all had a suggestion of a "shaven-beard appearance."

The appendix was normal. In the colon there was again a very slight injection of the mucosa and the solitary follicles practically all had a dark center. The rectum was similar in appearance.

The mesenteric lymph glands were enlarged to a moderate degree, firm, and gave no evidence of matting together. On section, rather brownish in color, firm, and not particularly moist. No foci of softening were observed. The retroperitoneal glands were also slightly enlarged, of somewhat the same color, but on section showed redness in streaks.

Anatomic Diagnosis.—Acute ulcerative enteritis with multiple intramural hemorrhages and meteorism, acute general serofibrinous peritonitis, parenchymatous degeneration of liver and kidneys, focal necroses of liver, anemic infarctions of spleen, fatty degeneration of myocardium, chronic tuberculosis of the apex of the right lung, recent abdominal incision.

Microscopic Examination.—Heart: No abnormality is apparent in any of the cardiac structures. A few small round cells are present about the smaller vessels.

Liver: In the capsule is found some round-celled infiltration. The surface exudate does not appear in the sections. Throughout the parenchyma the liver cells are more or less swollen and granular. Scattered here and there are foci of necrosis, usually small with but partial granular degeneration of the liver cells and little or no cellular accumulation. In the connective tissue of the portal spaces are some occasional round cell accumulations containing also a few polymorphonuclear leukocytes.

Spleen: The capsule is quite normal save for an acute fibrinous exudate, the cells of which are few and for the most part of mononuclear varieties. The pulp is swollen and the Malpighian bodies are small and relatively infrequent. In the pulp occur large numbers of typical red blood-corpucle carrying cells which rarely contain nucleated elements. A few scattered foci necroses are present but not the least evidence of abscess formation.

The white areas seen macroscopically are typical anemic infarctions surrounded by the two characteristic zones of infiltration and congestion. The inner zone of infiltration is made up almost entirely of round cells. In these karyorrhesis is marked. The outer zone of congestion is peculiar in that the red blood-corpucle, unlike similar cells in the immediately adjacent pulp, do not appear as "shadows," but take a deep eosin stain and have a distinctly hyaline appearance. Their relationship is such that their outlines often are undifferentiated and a fused condition is suggested. Throughout the infarcted area the architecture of the spleen is preserved and no softening is to be observed. The blood-corpucle are as a rule well differentiated. The coagulative necrosis is practically homogeneous and complete. Through it are clumps of hematoïdin crystals. No thrombosis is present in the vessels in the more normal pulp but appears in those which extend into the infarction. Aside from the fibrin filaments, red blood-corpucle and leukocytes there are irregular hyaline globular masses that stain deeply with the eosin. These also suggest fused red blood-corpucle. Weigert's fibrin stain leaves them unaffected and sharply differentiated from the stained fibrin filaments adjacent to them, giving support to the probability of their being agglutinated red corpucle.

Kidneys: There is no thickening of the capsule, nor is there any diffuse increase in the stroma, although a slight increase in the periglomerular tissue is present. An advanced granular swelling is present in the epithelium of the convoluted tubules. In the lumina of the tubules and within the spaces in Bowman's capsule is a considerable deposit of granular detritus staining with eosin. Hyaline tube-casts are present in fairly large numbers. No congestion is present.

Pancreas: No abnormality is apparent.

Intestine: Perhaps owing to the fact that these preparations had all been placed on blotting-paper before immersion in hardening fluid none showed any exudate. Moderate congestion of the vessels of all the intestinal coats is the only abnormality present in places. In others, where there had been some macroscopic swelling, there is a moderate endothelial hyperplasia in the lymphoid tissue. An inconsiderable degree of phagocytosis is noticeable. The mucosa is generally well preserved, though there is some postmortem change as well as some little characteristic sloughing. There had been so little loss of tissue, however, that the bases of Lieberkühn's crypts are rather constantly present. The section of the ragged ulcer found in the lowermost of Peyer's patches shows a perfectly definite, but also superficial loss of substance. Beneath this ulcer is a typical zone of necrosis. The submucosa is not involved, the necrosis not extending even to the base of the lymphoid tissue. Except for some edema in one section the muscular coats are normal. There is a slight infiltration with small round cells in places, but this is more particularly just beneath the serosa.

The most striking feature is the appearance of the hemorrhagic plaques that were so conspicuous macroscopically, both at the operation and postmortem. These accumulations of blood are found to be confined to the submucosa, the structures on either side not being at all affected. The bloodvessels in this area are as a rule quite free and normal. In some there

are present an abnormally large proportion of nucleated cells, most of which are of a large mononuclear variety. In some sections of a veinule there occurs a considerable increase in these nucleated cells, but here also the red corpuscles are in the peculiar condition described in the spleen, densely staining, highly refractive, and apparently agglutinated. This was traceable in serial sections.

Mesenteric Lymph Gland: A very pronounced endothelial hyperplasia is present, but with only a slight degree of phagocytosis. Some small nucleated cells as well as red blood-corpuscles are to be found in the large cells. A few very minute and perhaps questionable foci of necrosis are present. In the lymph sinuses a few red blood-corpuscles are occasionally to be found, particularly in the peripheral sinus. Very occasional small deposits of refractile yellow pigment are to be seen. There is a slight round-cell infiltration in the puriglandular fat, but no outspoken periaiditis.

Retroperitoneal Lymph Gland: The condition here is practically identical with that found in the mesenteric glands except that in places the sinuses are quite filled with red blood-corpuscles, a hemolymph gland.

Bacteriologic Examination.—The agar slant inoculated from the peritoneal exudate gave an abundant growth in 24 hours—apparently a pure culture had developed. A hanging drop preparation made from the water of condensation showed a small, rapidly motile bacillus. No other forms were seen here or in a stained smear. Agar plates were made from dilutions in bouillon of the original growth. After incubation two or three of these plates showed colonies that were typically those of *Bacillus subtilis*. These were excluded as a certain contamination. Eighteen or 20 agar tubes were inoculated from deep and surface colonies that were other than characteristically those of the *subtilis*. In all but two or three of these slants there developed a growth of bacilli, motile and apparently identical with those of the original culture. The remaining tubes had developed a growth of a staphylococcus.

By the usual methods it was determined that all of the bacillary cultures were of the same organism. Their growths upon the various culture media, the absence of gas formation in the presence of sugars, glucose, lactose, and saccharose, as well as their morphologic and staining characteristics, were identical with those of the typhoid bacillus. Through the kindness of Dr. W. T. Longcope, a Gruber-Widal test was made at the Ayer Laboratory of the Pennsylvania Hospital. A positive reaction occurred with the serum of a typhoid patient in a dilution of 1-500 after three hours, which satisfactorily completed the identification as the typhoid bacillus.

The staphylococcus was found to agree in size and staining peculiarities with the ordinary pyogenic staphylococci. The agar growth remained free from colored pigment but became gradually opaque; there was a definite whitish growth on potato. There was no coagulation of milk. Liquefaction of gelatin was slight and took place slowly. The gelatin was not particularly firm and other organisms caused rapid liquefaction. The characteristics were considered sufficient to identify *Staphylococcus epidermidis albus*. Ten or 12 days after the original subcultures were made, the bouillon tubes from which the plates had been seeded were reexamined. The cocci appeared to equal the bacilli in number, whereas the day after inoculation of these tubes the presence of the cocci had escaped detection.

The pyogenic properties of the typhoid bacillus have been established beyond contention, the exception of Baumgarten to prove the rule. That it may also cause peritonitis is proved by the experiments of Dmochowski and Janowski, and clinically by the observations reported by Fraenkel, Weichselbaum,⁴⁶ Roux, Körte, Lehmann, Klein, Shattuck, Cobb, and Warren. (Fraenkel, Roux, Klein, and Lehmann isolated the typhoid bacillus in pure culture from nonperforative localized peritonitis. Weichselbaum obtained it in pure culture from a general peritonitis following a rupture of the spleen, and Körte in a similar condition arising from a suppurating lymph gland. Shattuck, Cobb, and Warren report two other cases of general peritonitis where it alone was cultivated, one following perforation in which the culture was taken at time of operation, and one due to rupture of a suppurating mesenteric lymph gland.)

The presence of *Staphylococcus epidermidis albus* in the peritoneum in the case here reported in no way lessens the probability that the typhoid bacillus was the primary microorganism concerned in the production of the peritonitis. Welch⁴⁷ has shown that *Staphylococcus epidermidis albus* may give rise to a peritonitis if there is a ready communication between the peritoneum and the skin incision; as, for example, along a drain track. But in this case the peritonitis was established before there was any possibility for such an infection. Also the cultures show that the coccus was originally greatly

in the minority. It is most probable that the coccal infection took place at the time of operation.

There is but one other instance on record, and that one is unsatisfactory, of a general peritonitis due neither to rupture of the spleen or a lymph-gland nor to an intestinal perforation in which the typhoid bacillus has been found in pure culture. Keen⁴⁸ was unable to find a case in which it had been present under these conditions.

The histological examination has some very striking features. The hemorrhagic plaques in the intestinal walls, so evident at the operation and postmortem, are particularly noteworthy. Not only were they the possible result of thrombosis, and that of a peculiar type, but the consequent circulatory disturbance, particularly the edema as seen in one section, have aided materially in the transmigration of the bacilli into the peritoneal cavity. But of the greatest interest from a pathologic viewpoint is the appearance of agglutinated red blood-corpuscles in the thrombi, in the intestinal and splenic vessels, and in the zone of congestion about the area of infarction in the spleen. Flexner⁴⁹ has already pointed out the existence of the thrombosis due to agglutination of the red blood-corpuscles. He has observed it several times in the vessels of the intestine, omentum, and lung in typhoid fever; in those of the lung in a case of bronchiectasis and pneumonia, and in the vessels of the stomach in carbolic acid poisoning, and in the hemorrhagic necroses of the liver in eclampsia. Experimentally he reproduced similar conditions by the intravenous injection of rabbits with ricin, ether, and dog's blood-serum. Boxmeyer⁵⁰ in a study of the focal necroses seen in the livers of rabbits and mice after inoculation with the hog-cholera bacillus, came independently to the same explanation of a similar process in these lesions. He suggests that such thrombi may be found as the result of freezing, burning, and the action of certain mineral poisons.

It was attempted to make a comparative study of sections of masses of red blood-corpuscles agglutinated *in vitro* and those present in the tissue as described. Human and dog's blood was defibrinated and the corpuscles suspended in 19 times the amount of 0.85% sodium chloride solution, and then agglutinated by the action of ricin and snake venom, or the dog's blood also with normal horse serum. It was found impossible to harden these masses, which microscopically were characteristically agglutinated, without causing an immediate disassociation of the corpuscles and a more or less complete restitution of the normal form of the erythrocytes. The usual hardening fluids were used and modifications tried and fixation by heating employed, but this disassociation always occurred. Sections of relatively large clumps showed nothing but groups of distinct corpuscles. This process of disassociation could be watched under the microscope by allowing the hardening fluid to run under the cover glass.

This is similar to the action of potassium permanganate on corpuscles agglutinated by the action of snake venoms, first pointed out by Mitchell and Stewart⁵¹ and studied more recently by Flexner and Noguchi.⁵² The former also found that hydrogen peroxid had a similar influence. Eisenberg and Volk⁵³ have noticed the same effect upon agglutinated bacteria treated with various organic and inorganic acids, acid salts, alkalis, saturated sodium chloride, and urea solutions, formalin, and also by heating. The disassociated bacteria showed some change in appearance, varying in extent with the method employed. Reagglutination may take place.

Kraus and Ludwig⁵⁴ were able to demonstrate hemolysis and hemagglutination of dogs' corpuscles when acted upon by the living cultures of certain bacteria, but not by the action of the typhoid bacillus. Following their methods somewhat, using a culture of typhoid bacilli recently obtained from a fatal case of the fever, and a 5% suspension of defibrinated human blood in

0.85% salt solution, agglutination was observed. Groups of test-tubes containing 1 cc. of the blood suspension were inoculated with from one to five drops of a 24-hour bouillon culture. Five such groups were prepared, each one with a control containing only the blood suspension. Three of these groups were incubated at 37° C. for from 2 to 18 hours and then placed in a refrigerator. One was left at room temperature for 24 hours, incubated for 8 hours, and then put in a refrigerator, and one was kept constantly in the refrigerator. At 42 hours from the time of preparation slight macroscopic and microscopic agglutination was present in all but the group that had been constantly at low temperature. The reaction was slight but perfectly distinct. At 116 hours all showed some agglutination. This could be broken up macroscopically, but on standing 24 hours had reappeared.

For obtaining the toxin from the tubercle bacilli the method of Koch as applied by Neisser and Shiga⁵⁵ to the typhoid and dysentery bacilli in their study of free receptors was also used. A 24-hours' growth of the same typhoid culture upon agar-agar was suspended in 10 cc. saline solution, heated for an hour at 60° C., kept for two days at 37° C., and then passed through a Pasteur filter. Another series of tubes was prepared as before, and similar amounts of the filtrate added to them. The agglutination took place more quickly and in proportion to the amount of the filtrate added. There was also slight hemolysis. The clumps here were similar to those of the preceding experiment, and after being broken up by shaking reappeared after 24 hours.

Still another series was used. In this case a 56-hour bouillon culture was put through the Pasteur filter and the filtrate added as before. The agglutination took place very slowly, and was never as evident macroscopically as in the other two tests. The reformation of visible clumps took place here also after dissipation by shaking.

Agglutination of human blood may take place, therefore, *in vitro*, in the presence of a living culture, the filtrate from a living culture, or the filtrate from a salt solution extract of the bodies of the dead bacilli which owes its efficacy to autolysis as shown by Conradi.⁵⁶ This occurs more rapidly at the body temperature, and may be observed with or independent of hemolysis. The agglutination is less pronounced microscopically and macroscopically than that resulting from the action of sera or venoms.

In conclusion it may be said that the treatment of these cases is manifestly the same as of the perforative peritonitis with suitable variations in the details to meet the conditions found. In the first of the two cases here reported it is perhaps questionable whether the use of drainage resulted in any particular benefit. The prophylactic value, had the sutures failed in obliterating the source of infection, is indisputable. On the other hand, the presence of a foreign body in any tissue certainly does not favor the resistance against infection. Moreover, the immediate and remote complications arising from adhesions must be taken into consideration. Delbet,⁵⁷ from experiments, concludes that effective and prolonged drainage of the general peritoneal cavity is impossible, and that the serous discharge which flows out along the drain comes, in the majority of cases, from an exudation from the adhesions in the drain tract. In the second case it is doubtful whether the patient would have survived without any complication in view of the profound intoxication shown by his symptoms, but there was no improvement in the prognosis through the delay in resorting to surgical treatment. Nor did this treatment have any beneficial effect upon the condition, general or local, as shown by the subsequent history and the postmortem. This is largely due to the fact that the surgeon was practically asked to make an antemortem examination. It would be in just such cases as this, taken early, even before the onset of the peritonitis, that enterostomy might be of the greatest value.

CONCLUSIONS.

1. Nonperforative peritonitis usually results from an extension of inflammation through the bases of deep intestinal ulcers, but may also arise from the migration of bacteria through an intestinal wall which is relatively but slightly abnormal.
2. Meteorism thus predisposes to infection of the peritoneal cavity and by decreasing the normal peritoneal absorption furnishes a secondary cause for peritonitis.
3. An hematogenous origin of peritonitis is possible in typhoid fever.
4. Nonperforative peritonitis is commonly caused by the typhoid bacillus and the resulting inflammation is usually diffuse and often severe.
5. The inception of such a peritonitis is clinically indistinguishable from the so-called signs of perforation, and the symptoms in both are due to peritoneal inflammation. The prognosis is probably equally grave in the two forms.
6. There should be appropriate surgical intervention immediately the peritonitis can be recognized. Enterostomy is indicated when there is meteorism with the peritonitis or when it affects the prognosis and is intractable to ordinary therapeutics.
7. Thrombi, and among them those composed of agglutinated red blood-corpuscles, may lead to hemorrhages into the wall of the intestine and the resulting changes favor the transmigration of bacteria into the peritoneal cavity.
8. Infarction of the spleen may have a similar thrombotic causation, but simple splenic infarction is probably not a cause of peritonitis.
9. The specific action upon human blood of an agglutinin generated by the typhoid bacillus can be demonstrated *in vitro*.

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Hygiene in Manila.—The report of the Secretary of the Interior states that by direction of the Commission the board of health in Manila has taken upon itself the disposition of the night soil of the city, so far as this can be collected with existing facilities, and it has perfected plans for the introduction of the so-called "pail conservancy system." Adequate appropriation has been made by the Commission for initiating the installation of this system, which has begun and is progressing favorably. An immense amount of sanitary work has been done by the board and its employes. Many of the worst districts of the city have been thoroughly cleaned and a strict inspection of the buildings of the city has been maintained.

The Insular Board of Health of the Philippine Islands in conformity with the legal requirement that it do so has recommended to the Commission legislation on the following subjects: "An act regulating the practice of medicine and surgery in the Philippine Islands;" "an act regulating the practice of pharmacy in the Philippine Islands;" "an act regulating the practice of dentistry in the Philippine Islands;" "an act regulating the practice of veterinary medicine, surgery, and dentistry in the Philippine Islands;" "an act providing for the establishment of provincial boards of health, and fixing their powers and duties;" "an act providing for the establishment of municipal boards of health, and fixing their powers and duties;" "an act providing for the compulsory vaccination of the inhabitants of the Philippine Islands;" "an act providing for the control and suppression of leprosy in the Philippine Islands;" "an act regulating the manufacture, sale, and other disposition of alcoholic beverages in the Philippine Islands;" and "an act transferring the employes of the Board of Health of the city of Manila under the Provost Marshal-General to the Board of Health for the Philippine Islands."

SPECIAL ARTICLES

THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE.

Proceedings Reported by the Secretary,
WILLIAM J. GIES, M.S., Ph.D.,
of New York.

PRELIMINARY CONFERENCE.—On January 19 last a number of biologists met by invitation at the home of Professor Graham Lusk to consider the desirability of perfecting an organization of active investigators in biology and medicine. This project was originally suggested by Dr. S. J. Meltzer and received the unanimous endorsement of all present. The temporary chairman of the meeting, Professor Frederick S. Lee, appointed Drs. Meltzer, Lusk, and Gies a committee on permanent organization.

PERMANENT ORGANIZATION AND FIRST PROGRAM.—The Society for Experimental Biology and Medicine was permanently organized in the Laboratory of Physiological Chemistry of Columbia University on the evening of February 25, where it met at the invitation of Dr. Gies.

Constitution: The objects and general character of the society are indicated by the following summary of provisions in its constitution and by-laws:

a. The main object of the society is the cultivation of the experimental method of investigation in the sciences of animal biology and medicine.

b. No one can be elected to membership who has not completed a meritorious independent experimental research in animal biology or medicine.

c. Every member shall be expected to conduct an experimental investigation and give public notice of it at least once in two years. Noncompliance with this requirement carries with it forfeiture of membership.

d. The program of each meeting shall consist of brief presentations of the essential points of experimental investigations in biology and medicine or allied natural sciences, preferably of *demonstrations* of actual experiments.

e. The meetings will be held in suitable laboratories.

f. Membership is not confined to residents of New York City.

Officers: The officers elected to serve for the present calendar year are: President, Dr. S. J. Meltzer; vice-president, Dr. Win. H. Park; secretary, Dr. William J. Gies; librarian, Dr. Graham Lusk; treasurer, Dr. Gary N. Calkins.

FIRST PROGRAM.—Although much of the time at the second meeting was taken up with the details of organization, the society emphasized its main purpose and function by carrying out, in addition, the following program of demonstrations of original work:

"An experiment to show the difference in effect between the simple cutting of the cervical sympathetic and the removal of the superior ganglion": S. J. MELTZER.

Dr. Meltzer presented a rabbit in which the cervical sympathetic had been cut on one side, and the superior ganglion had been removed on the other side. Both pupils were of the same size. About two hours before the demonstration one hind leg was tightly constricted and 1 cc. adrenalin injected into it (peripheral to the ligature). On removal of the ligature the pupil on the side from which the ganglion had been excised became greatly dilated, while the pupil on the other side remained unaffected.

"Differentiation of monkey blood from human blood by the precipitin serum test": JAMES EWING.

It has been known for some time that the serum of an animal immunized against a particular alien blood will precipitate proteids, not only in the particular blood used in the immunization, but also, to a lesser degree, in the blood-serum of closely related animals. Thus the serum of a rabbit immunized

The secretary has received an abstract of each report from the member making it, and in editing these abstracts has made only occasional verbal alterations in them, such as abbreviations and the like. The abstracts here given are in fact, therefore, the contributions of the several members themselves, and should be so credited.

against ox blood will precipitate proteids not only in ox blood but also in sheep and goat blood, etc. It is only when the anti-serum is diluted to a considerable degree that the precipitate forms only in the particular blood used in the immunization. This dilution, as a rule, must be as high as 1-50. In a series of tests with various humanized rabbit sera, it was found that monkey blood, which is very closely related to human blood, can be distinguished from human blood if the humanized rabbit serum is diluted in the proportion of 1-100 before it is added to the blood to be tested. In this dilution very active humanized rabbit sera fail to cause precipitates in the blood of lower monkeys (baboon, rhesus, and Java), while still causing flocculent precipitates within one to two hours in human blood.

The serum used by Dr. Ewing in this demonstration was obtained from a chicken which had received five injections each of 10 cc. of human placenta blood. This serum proved to be much more selective than the ordinary humanized rabbit serum. The chicken serum in various dilutions up to 1-100 was added to specimens of human and monkey serum in dilutions also of 1-100. It produced turbidities in all the specimens of human blood, but failed entirely to affect the monkey blood. Finally, the chicken serum was added in a dilution 1-5 to specimens of both human and monkey blood. In the human blood a milky ring formed instantly at the line of junction of the test serum with the human serum, and a flocculent precipitate formed in fifteen minutes, while in the monkey serum no change whatever could be observed.

"An improved cage for metabolism experiments": WILLIAM J. GIES.

A cage specially designed for experiments on dogs was shown. The parts are so adjusted as to favor the collection and separation of feces, urine and hair. The improvements consist mainly of mechanical devices suggested by experimental experiences of the past few years in metabolism work, all of which are designed to ensure quantitative accuracy as well as comparative convenience in the collection of excreta.

"Properties of 'Bence-Jones' body": WILLIAM J. GIES.

Through the kindness of Dr. Meltzer a patient's urine containing this substance had been placed at our disposal for chemical study. Some of the results of this investigation were presented and various properties of the body demonstrated. Special attention was drawn to a test of Boston's new method of detecting "Bence-Jones' body" in the urine.

FIRST REGULAR MEETING AND SECOND PROGRAM.—The third session of the society was held on the evening of April 15 in Professor Graham Lusk's laboratory at the University and Bellevue Hospital Medical College, New York City. Dr. S. J. Meltzer presided. In harmony with the aims of the society the evening was devoted mainly to reports of original work done by the members, with demonstrations of methods and results. The program was as follows:

I. REPORTS OF ORIGINAL WORK, WITH DEMONSTRATIONS.

"Changes in the blood-volume of the vein of the submaxillary gland on stimulation of the chorda tympani and sympathetic nerves": R. BURTON OPITZ.

Dr. Burton-Opitz explained the mechanism of a recording stromuhr by means of which he made quantitative determinations of the blood flow in the vein conveying the blood from the submaxillary gland. The blood-volume was measured previous to, as well as during the stimulation of the secretory nerves. The curves which were exhibited showed very striking changes in the blood flow, namely, an increase on stimulation of the chorda and a decrease when the current was applied to the sympathetic fibers. In the former case the volume of the blood flow (cc. per second) was from about two to nearly six times as great as normal, and in the latter case it was from about one-half to one-fifth the normal volume. By using a strong stimulus a complete cessation of flow can be produced.

"Does a backward flow ever occur in the veins?": R. BURTON-OPITZ.

The results of this investigation may be summarized as follows: A backward swaying of the column of blood in the central veins is a constant, normal phenomenon. It is pro-

duced by two factors: first, by the contraction of the right side of the heart; and second, by high intrathoracic pressure (forced expiration). If the distal conditions in the venous system are favorable, this backward movement can also be obtained in the peripheral veins (femoral veins). The same instrument was used in this investigation as in the former.

"A new method of studying metabolism": GARY N. CALKINS.

Dr. Calkins described experiments now in progress upon metabolism in unicellular animal organisms. These forms, reproducing by simple division, offer the same protoplasm for study generation after generation, and with each division the daughter organisms, by reason of the functions of regulation and regeneration, perfect themselves in the race-type, while digestion, assimilation, waste, repair and growth are handed down unchanged from cell to cell. The problem is to ascertain whether these various functions will continue their activities indefinitely or whether protoplasmic old age will supervene to put an end to the race. In nature such an end is prevented by sexual union, whereby the conjugating organisms are rejuvenated.

In the experiments by Dr. Calkins this function was prevented by isolation. The general metabolic functions were out four consecutive times at intervals of six months, and each time, except the last, the race was saved only by a change in diet or by chemical stimuli. The phenomena were analogous to those in the artificial fertilization experiments of Loeb and others, with this difference, that if comparable with artificial parthenogenesis, the process was repeated with the same protoplasm three consecutive times. In the fourth period of degeneration the stimuli previously tried were no longer effective and the race died out, 742 generations old. Structural changes were different in the different periods of depression. The degenerate animals, in the periods which were successfully overcome, had curiously altered nuclei and endoplasm. In the last period of depression which was not overcome, the nucleus and endoplasm were normal, while abnormal parts were found in the micronucleus and the cortical plasm.

The conclusions which this part of the work seems to justify are: 1. That "old age," so-called, of the cell may be due either to the wearing out of functions, or to the degeneration of structural parts. The former is capable of artificial rejuvenescence, the latter apparently not. 2. The ordinary functions of metabolism, such as digestion, assimilation, excretion, growth, etc., are dependent upon certain definite portions of the cell (macronucleus and endoplasm), while the dividing energy is a function of the micronucleus and of the cortical plasm. 3. After conjugation the organisms start with high potentials of metabolic energy which gradually wear out, but which can be restored artificially. So, too, the dividing energy starts with a high initial potential energy, but which cannot be restored after exhaustion.

In the light of these experiments it would be pertinent and instructive to ascertain whether artificial parthenogenesis, in sea-urchins for example, could be repeated more than once on the same continuous protoplasm. On a priori grounds a successful result would be extremely doubtful.

"On the origin of cholesterol in gallstones": C. A. HERTER.

Dr. Herter said that experiments made in his laboratory by Dr. Wakeman give strong support to the views that inflammatory conditions of the walls of the gallbladder may lead to an increase in the cholesterol of the bile. Dr. Wakeman injected strong solutions of bichlorid of mercury into the gallbladders of dogs previously starved for three days. After periods of from two to five days the animals were killed. As a rule the gallbladder walls were much thickened and the epithelium was proliferated and desquamated. The solids of the bile were diminished in percentage. The cholesterol content was much increased. The contents of the gallbladder in these experiments were sterile. These facts are of great interest in relation to the etiology of gallstones.

"On nucleic acid": P. A. LEVENE.

According to Osborne, nucleic acid derived from the plant cell differs from that of the animal cell with variations in the characters of the pyrimidin base present in its molecule. Dr.

Levene has devised a new method of separating the pyrimidin bases, in which he avoids the precipitation with silver. With this method he has obtained from the animal nuclei acid (derived from the spleen and pancreas), beside thymine and cytosine, also uracil. The radicle of the latter substance had been supposed to occur only in the plant nucleic acid. Kossel and Stendel have made this same observation in regard to the nucleic acids derived from the thymus gland and from fish sperm.

"*Respiration experiments in phlorhizin diabetes*": GRAHAM LUSK (with A. R. Mandel).

An experiment on a diabetic dog showed that, whether fasting or fed on meat alone, or on meat and fat, no more fat was burned than in the same dog when he was normal and fasting.

"*A modified Eck fistula, with a note on adrenalin glycaemia*": A. N. RICHARDS.

A method devised by Vosburgh and Richards for establishing communication between the portal vein and the inferior vena cava of the dog was described and demonstrated. In this method two cannulas are employed. They are constructed on the same principle as the one used by Vosburgh and Richards in collecting blood from the hepatic and portal veins without interfering with the normal circulation in those vessels.¹ After suitable incision through the abdominal wall a cannula of that type, 1 cm. long, was inserted into the portal vein about 2 cm. below the entrance of the pancreatico-duodenalis. A second cannula of similar design was introduced into the vena cava at a corresponding point. By connecting the cannulas with a rubber tube, communication was established between the two vessels. On ligating the hepatic arteries and the portal vein at the hilum of the liver, circulation through the liver ceased and the gland was extirpated.

By the successful use of this method Vosburgh and Richards have found that the application of adrenalin to the surface of the pancreas brings about a slight rise in the sugar content of the blood even after extirpation of the liver. Their experiments thus far have covered periods of from two to three hours, no systematic attempts having yet been made to get the animals to survive the operation.

II. REVIEW.

"*Aims and achievements in recent experimental cytology*": GARY N. CALKINS.

A review of Loeb's, Wilson's, and Boveri's experimental researches.

No Quarantine Against Cuba.—Health Officer Dr. A. H. Doty says there will be no quarantine against passengers arriving from Cuban ports during the coming season, which generally begins on May 1, unless there was some evidence that yellow fever prevailed at Cuban ports. Cuba has been unusually free from yellow fever during the past two years, not a single case being reported at Havana or any of the other ports during that time. Last year's quarantine did not go into effect until July 1, two months later than the usual time.

Suicide in Army.—A French student has been investigating the subject of suicides in the armies of Europe, and has reached some curious results. Everywhere, except in Russia, the number of military suicides is decreasing; in that country, however, the average for some years past has been 133 in every 100,000. In France the proportion now is 18 in 100,000; in Italy, 24; in Germany, 36, and in Austria, 105 to every 100,000. In civil life in this country the Germans provide the largest proportion of suicides; it is curious to find them surpassed in Europe by the Austrian and Russian soldiers.

To Stop Milk Inspection.—What is regarded as a covert attempt on the part of local milk dealers to defeat the present salutary law which makes punishable adulterations and dilutions of milk has been found tucked away in an ambiguously worded bill. According to this measure prosecutors would be compelled to show "wilful intent" on the part of violators before they could be held amenable to the law. Those sections of the law which would be superseded by the new act involve the sale and inspection of milk within the boundaries of the city, and heretofore the officers of the Health Department have secured convictions in the cases which they have prosecuted on the analysis of the inspectors, and the fact that the laws regulating the milk traffic are too well known to permit of violations through ignorance. To be compelled to prove "wilful intent" practically would put an end to all prosecution unless a bureau of detectives is placed at the disposal of the Health Department to work in conjunction with the inspectors.

¹ Amer. Jour. Physiol., 1903, ix, p. 43.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

[April 25, 1903. Vol. XL, No. 17.]

1. Some Remarks on the Present Status of Medical Education in the United States. VICTOR C. VAUGHAN.
2. Requirements for Admission to Medical Colleges. E. A. DE SCHWEINITZ.
3. Requirements for Admission to Medical Schools. JAMES RUSSELL PARSONS, JR.
4. Oblique Inguinal Hernia. A. E. BENJAMIN.
5. Evolution in the Treatment of Cancer of the Rectum. C. H. MAYO.
6. Some Remarks on Sclerema Neonatorum, with Report of a Case with Autopsy. E. R. STILLMAN.
7. Hypertrophy of the Synovial Fringes of the Knee-joint, with a Report of Twelve Cases. EDVILLE G. ABBOTT.
8. The Use of a Mydriatic After the Age of Forty-five. HORACE M. STARKEY. (Concluded from p. 1078.)
9. Carcinoma Epibulbare Planum. B. MATYS.
10. Laboratory Inspection of Vaccine. ADOLPH GEHRMANN.

2.—Requirements for Admission to Medical Colleges.

—E. A. de Schweinitz believes that a student should have had training in biology before entering a medical college, though this is not absolutely essential. He is of opinion that the present tendency in medical colleges is toward too great specialization in the various branches. We should give each student a good, general, solid groundwork, and afford him an opportunity to determine in his own mind the particular line to which he is best adapted. Requirements in Latin could with good results be substituted for French and German, though requirements in these languages for entrance is unnecessary. Familiarity with French and German is not so essential in the present advanced state of medical journalism as formerly, since excellent abstracts of all foreign articles appear in the various journals. High school graduates usually make better students than the average college graduates. Advanced standing should be refused to graduates in veterinary medicine, dentistry, pharmacy, and from literary colleges. Certain medical studies should be allowed to count toward an A.B. degree, but the latter should not count toward a medical degree. No medical college should receive a student from a similar college unless he holds a special letter from the dean of the school from which he comes. Only in this way can fraud be prevented. [A.B.C.]

3.—Requirements for Admission to Medical Schools.

—J. R. Parsons, Jr., defends the present position and standard established by the New York board of regents, making it necessary for students before they enter a medical college to attain certain literary proficiency. At present only 4 medical schools in the United States exceed more in quantity than is represented by the New York medical student certificate. When medical schools conduct their own entrance examinations the tests are often mere matters of form, hence the benefit of a board of regents. The board of regents in New York takes as its basis for requirements for entrance into a medical college a 4 years' high school course based on an 8-year elementary course; 17 medical colleges in the United States require a standard equivalent to this. Seventy-nine out of 80 medical schools communicated with accept the New York medical student certificate at its face value. The author believes that authorities should not be too specific in prescribed entrance requirements—that is, that certain alternatives within reasonable bounds should be permitted. He also believes that as medical schools are strengthened and their faculties increased they can admit to the second year of medicine more freely those with baccalaureate degrees, embracing a general training in the languages, physics, chemistry, biology, and mathematics. In other words, that a 3-year professional course based on a 4-year college course is preferable to a 4-year medical course based on a high school course only. [A.B.C.]

4.—Oblique Inguinal Hernia.—A. E. Benjamin gives a more or less theoretic discussion on the treatment of this condition, and wisely asserts that the numerous methods in treatment simply illustrate the fact that no one method answers every specific purpose in all cases. He believes that too vigorous scrubbing of the parts before operation conduces to infection. Other contributing causes or factors toward failure to secure good results are careless preparation of the operator's hands; operation on patients suffering from some constitutional or local disease so-called; sutures that are absorbed too quickly; improperly

sterilized sutures; failure of proper approximation of tissues; too great tension on tied sutures; incomplete dissection and ligation of the union of absorbent sutures; and mauling of the tissues. The present tendency is toward operative rather than palliative treatment in cases suitable for operation. The truss for elderly and debilitated persons and operation for young and vigorous middle-aged persons is the general rule. The author describes an operation which follows in a general way Bagnini's method, except that in closing the wound the sutures are brought out through the skin and tied over a roll of gauze, and are thus capable of being removed when healing has been accomplished. [A.B.C.]

5.—Treatment of Cancer of the Rectum.—C. H. Mayo reviews the literature of the subject and mentions the various operations which have been advocated for treating this baleful condition. After the best operative methods of the present time only about 15% of patients secure anything like a controllable anus. The present tendency is toward the combined abdominal and sacral routes unless the growth be situated very low down where it may be attacked by the perirenal route only. If permanent colostomy becomes necessary the author advocates a median incision, double clamp and cut the sigmoid above the cancerous growth, inverting the mucous membrane of the proximal end, ligating the superior hemorrhoidal artery, and bringing the proximal portion out through the abdominal wall by a McBurney gridiron incision in the left iliac fossa. It is claimed that this gives better control of the bowel contents. The main objections of the past as summed up by the author are ineffectual removal and local recurrence; extensive mutilation by the Kraske method; frequent failure by all methods of union between the proximal and distal portions of the bowel; frequent formation of stricture following operation; straightening and tension on the sigmoid, destroying it as a fecal container. The advantages of the combined method are radical removal *en masse* of all glands, fat, and connective tissue, or colostomy for palliation; retention of the sigmoid as a fecal container; peculiar formation of the anus, giving a fair degree of control in an accessible situation. [A.B.C.]

6.—Sclerema Neonatorum.—E. R. Stillman reports the case. He has found but seven such cases reported in American literature, and a few in European literature. The patient was an infant which showed the typical symptoms of sclerema neonatorum. The skin on the back was hard, indurated, could not be pinched up in folds, was densely adherent, and seemed to be fused indefinitely with the underlying structures. The condition grew worse. The infiltrated areas were bluish-black. The legs were flexed at an angle of 45%, stiff, and could not be bent. Later, the sclerema extended to the chest. A blood examination showed 6,000,000 erythrocytes, the bowels moved sluggishly, the urine came in small amounts and at frequent intervals. Death occurred, and necropsy showed nothing to account for the peculiar condition. [A.B.C.]

7.—Hypertrophy of the Synovial Fringes of the Knee-joint.—E. G. Abbott gives an interesting discussion on this subject, dealing with the etiology, pathology, symptoms and treatment in these cases. He reports in some detail 12 cases, and his conclusions are that these cases should be considered individually and not included among the other diseases of the knee-joint. A microscopic examination of the tissue removed shows the pathologic process to be inflammatory and not due to microorganism. The etiology is obscure, but apparently due to the weight-bearing structures of the lower extremities. Pes planus in nearly all cases precedes the knee-joint trouble, and the use of a plate is of great service in treating the affection. Diagnosis is not difficult, although a torn cartilage may simulate this condition. Intact cartilages were found in all cases in which operation was performed. Paralysis of the quadriceps muscle was found in three instances previous to operation which could not be accounted for, and in several instances this occurred after operation, and was the last symptom to disappear. The question whether a case should be treated by operation or by mechanical means must be left to the judgment of the operator. [A.B.C.]

8.—The Use of a Mydriatic After the Age of Forty-five.—H. M. Starkey concludes his article on this subject reporting

many cases, and entering somewhat technically into the discussion. His final conclusions are that no age can be arbitrarily fixed beyond which cycloplegics must not be used and they are as necessary in certain cases after 45 as they are before. They are required in fewer cases as life advances, but since there is more danger of glaucoma in the elderly and as mydriatics tend to increase intraocular tension, these drugs should be used with caution after the age of 40 and in certain cases should not be used at all. [A.B.C.]

9.—Carcinoma Epibulbare Pianum.—B. Matys defines epibulbar tumors as those which are located on the margin of the cornea where it joins the sclera, from which they spread over the cornea and conjunctiva and sometimes into the sclera. They do not include secondary tumors occurring in the ciliary body, choroid or lids. He reports a case occurring in a man of 78 and exhibits a number of illustrations. He calls attention to the common error of neglecting an incipient tumor occurring at the limbus or its vicinity, and notes the differential diagnosis between phlyctenula and tumor in the cornea, also between these and carcinoma or sarcoma of this region. [A.B.C.]

10.—Laboratory Inspection of Vaccine.—Adolph Gehrmann reports on the vaccine examined by the Chicago Department of Health. He says that since July, 1894, an extended investigation of vaccine has been made, which showed that glycerinated lymph contained fewer bacteria and had a longer period of efficiency than the dry vaccine points. The former was therefore introduced, and has been exclusively used ever since. There have been distributed to the vaccinators approximately 1,000,000 individual vaccinations from the above date. Each lot is subject to a test before it is allowed to be used. Vaccine as now prepared consists essentially of ground up epithelium in a variable percentage of glycerin and water. If this mixture is not accurately adjusted it may be too thin, and separation takes place in time, injuring the quality of it. The virus must be as clean as possible, but it cannot be made initially sterile by using antiseptics. *Bacillus subtilis*, *Cladothrix dichotoma* and various molds and yeasts have been found in such quantities as to require rejection. Animal experiments are made on guinea-pigs. He states that from such experiments the bacillus of tetanus and tuberculosis and other specific bacteria could be found. The statement is made that after several hundred inoculations the author had not seen a single animal die of tetanus, nor show tuberculosis at the point of injection. These bacteria occur with extreme rarity in vaccine, and probably in the few cases where they have been reported they could have been found in considerable numbers. [A.B.C.]

Boston Medical and Surgical Journal.

April 23, 1903. [Vol. CXLVIII, No. 17.]

1. The Reaction Time of Corrosive Sublimate in Different Dilutions Against Various Species of Bacteria. CHARLES HARRINGTON and HAROLD WALKER.
2. The Cortical Cell Changes in Epilepsy: Their Significance and Clinical Interpretation. L. PIERCE CLARK and THOMAS P. PROUT.
3. Double Uterus and Vagina. C. H. HARE.
4. A Case of Uterus Bicornis Duplex, with Two Cervical Canals Above, One External Os and Stricture of Vagina. W. L. BURRAGE.
5. Pregnancy in a Uterus Bicornis Simulating Extrauterine Pregnancy. FRANK A. HIGGINS.

1.—Corrosive Sublimate Solution and Bacteria.—C. Harrington and H. Walker, after a rather exhaustive study, conclude as follows: 1. Different species of pathogenic bacteria and different cultures of the same species vary very greatly in their resistance to the action of corrosive sublimate. 2. With some species resistance is diminished in a remarkable degree by a condition of dryness, so that even the 1:10,000 solution can bring about sterility in a very short time. But some species are not materially affected in this respect by dryness. 3. Corrosive sublimate in as weak solution as 1:5,000 is ineffective against the common pathogenic bacteria, including the pus organisms, when they are moist, excepting after prolonged contact. Since fifteen minutes' contact is not sufficient for the destruction of *B. coli communis*, *B. pyocyaneus* and *Staphylococcus pyogenes albus* in the moist state, or of *Staphylococcus pyogenes aureus* whether moist or dry, the use of this and of weaker preparations in surgical work and for irrigation and similar purposes should be abandoned. 4. Corrosive sublimate

in the 1:1,000 solution is very slow in its action on some of the commonest of the skin bacteria, and since under the most favorable conditions more than ten minutes' contact may be necessary for it to kill *Staphylococcus pyogenes albus* it should not be relied upon to any great extent to ensure sterility of the hands or of instruments. [A.B.C.]

2.—Cortical Cell Changes in Epilepsy.—P. Clark and T. P. Prout, after a careful study, express their conclusions as follows: That the missing links of our knowledge of epilepsy consist in the fact that its pathogenic agents and the organic anomaly of the cortex, which constitute its predisposition, still hold the mystery of frequent relapses. By this study, however, we claim to have narrowed the gap between the terminal gliosis and the toxic and autotoxic agents in the disease pathogenesis, and we believe this is largely comprised in cell changes and those particularly of the nucleus. [A.B.C.]

3.—Double Uterus and Vagina.—C. H. Hare reports five cases of double uterus and vagina coming under his personal observation. The external genitals with little exception were normal, a septum dividing the vagina into two canals, both containing a cervix penetrable by sounds without touching. In two cases the fundus also was double, but in the others there was a single fundus. In one case both tubes and the right ovary were removed for double pyosalpinx; in another case a cyst the size of a lemon of the left ovary was removed; in the others the abdomen was not opened. [w.k.]

4.—Uterus Bicornis.—W. L. Burrage gives the history of a woman suffering from persistent dysmenorrhea. In 1895 the constricted vagina was dilated and the uterus curetted with only temporary relief. This treatment was repeated in 1898 with similar unsatisfactory results, and in 1903 she again entered the hospital under Burrage's care. The abdomen was opened when it was seen that the uterus was double and adherent. Supravaginal amputation was performed and two distinct cervical canals were found and two separate uterine cavities. Several fibroid nodules were imbedded in the uterine tissue and there was much soft tissue lining each uterine cavity. [w.k.]

5.—Pregnancy in Uterus Bicornis.—F. A. Higgins thinks that cases of uterus bicornis are not very rare. Since most cases reported are discovered by accident it is fair to suppose that the average case gives rise to no symptoms. He gives the history of a woman who had an operation for repair of cervix and a curetment. Six weeks later she began to suffer from almost daily hemorrhage, and the physician diagnosed extra-uterine pregnancy, advising operation. The abdomen was opened, and the inner third of the left tube was enlarged, the other tube and both ovaries being normal. This apparent tumor was dissected out at the uterine surface by a V-shaped incision and the uterus closed in. The patient recovered, and at the time of her discharge was 4½ months pregnant, conception having taken place about a week before the first operation. There was no further hemorrhage after the operation, and the writer assumes that it was the left cornu of the uterus which was curetted while the ovum was lodged in the right cornu. These two operations seem to demonstrate the remarkable tolerance of the pregnant uterus in many cases of operable procedure. [w.k.]

Medical Record.

April 25, 1903. [Vol. 63, No. 17.]

1. Observations on Some Limitations of Diagnosis. EDWARD G. JANEWAY.
2. The Toxicity of Appendicitis, with a Report of Two Cases of "Appendicular Vomito Negro." GEORGE RYERSON FOWLER.
3. Cardioposis and Its Association with Floating Liver. MAX EINHORN.
4. The Pathogenesis of Diabetes. HENRY S. STARK.

1.—Limitations of Diagnosis.—Janeway gives numerous illustrations indicating the difficulty at times of differentiating variola and varicella. Great responsibility rests here upon the physician, because an incorrect diagnosis may be of enormously serious import. Textbooks are at variance with each other and inconsistent in themselves in describing the two diseases, especially in differentiating them. In his experience that severe form of variola called purpura variolosa has become epidemic as a result of being diagnosed black measles, spotted fever, or purpura. While mistakes in this connection are sel-

dom made now typhoid and typhus were formerly often mistaken the one for the other. The Widal test and the present infrequency of typhus cause fewer mistakes now. One child in a family dies of meningitis, apparently, when a second comes down with a well-marked case of scarlet fever. The strong probabilities are that both were the latter. All know how frequent have diphtheria and other throat affections been mistaken the one for the other. Limitations in diagnosis is evidenced by the urgent quest of surgeons for some means of making early diagnosis of malignant disease of the internal organs, particularly the stomach and intestines; by the frequent inability to differentiate internal tertiary lesions of syphilis from tuberculosis, malignant disease, etc.; by the frequent difficulty of arriving at a correct diagnosis when the patient complains of symptoms of dyspepsia and cardiac disturbance, particularly if of the nature of angina. Optic neuritis was once thought to point almost conclusively to tumor of the brain, and absence of hydrochloric acid to malignant disease of the stomach. Both are now considered collateral signs only. [A.B.C.]

2.—Toxicity of Appendicitis: Black Vomit.—G. R. Fowler reports two cases of "black vomit" occurring in appendicitis. In both cases the appendix was gangrenous, "black vomit" began some hours after operation, and in both instances the color was found by laboratory examination to be due to blood. Both patients died. Necropsy was secure in but one case and in the stomach was found from 200 to 300 small ulcers. He says in a most conservative summing up it may be said that the occurrence of hematemesis has added another to the long list of grave complications of appendicitis. From the pathologic standpoint it is interesting to note that the exclusion of embolism in the production of the ulceration of the gastric mucosa by Nitzsche is not borne out by Prof. Van Cott's findings in the author's own case, in which both emboli and staphylococci were found. The view that the microorganisms were transported to and produced thrombi and subsequent embolism in the vessels is sustained, first, by the fact that in one of the sections there is a focus of necrotic tissue in which the microorganisms appear, the vessels of the submucosa near this area containing recent thrombi, and second, in another section an embolus appears involving a vessel in the mucosa near its bifurcation. [A.B.C.]

3.—Cardioposis Associated with Hepatoposis.—M. Einhorn calls attention to this condition and reports several cases. Etiology is not well understood, but emaciation and neurasthenia are mentioned. It occurs much more frequently in men, the supporting action of the corset in women probably accounting in part for this. Symptoms are palpitation, vertigo, and occasional inability to lie on the left side. The heart, otherwise normal, is displaced downward, usually the width of a rib and intercostal space, and its range of mobility is somewhat increased. In nearly half the cases of cardioposis a general enteroposis is found, and in all cases some degree of hepatoposis. This point seems to have escaped the attention of most observers. It seems at first singular that in all cases of cardioposis a hepatoposis should be present. Descent of the heart, however, necessarily causes descent of the diaphragm, and the latter condition causes the hepatoposis. Not all cases of hepatoposis, however, are associated with cardioposis. Prognosis is good, life being in no special danger. The treatment is psychologic, hygienic, and symptomatic. [A.B.C.]

4.—Pathogenesis of Diabetes.—H. S. Stark deals rather exhaustively with several theoretic explanations of the etiology of diabetes and offers his conclusions as follow: 1. The exact truth of the pathology of diabetes is not known. 2. There are no acknowledged and constant anatomic appearances of liver or of pancreas associated with diabetes. 3. There are no characteristic lesions in any other organ. 4. An impairment of the physiologic functions of the ductless glands may be at the root of the disease. 5. Artificial glycosuria is not diabetes. The facility with which this phenomenon can be elicited implies its insignificance as a pathologic factor. 6. So far as can be ascertained from competent sources there is hope that the vacuum in our knowledge of the nature of diabetes will soon be filled. [A.B.C.]

New York Medical Journal.

April 18, 1903. [VOL. LXXVII, No. 16.]

1. The Therapeutic Value of the Röntgen Ray in the Treatment of Pseudoleukemia. N. SENN.
2. A Plea for the Hospital or Office Treatment of Diseases of the Rectum and Anus. SAMUEL G. GANT.
3. The Practical Uses of Hypnotic Suggestion. WILLIAM LEE HOWARD.
4. The Work Performed by the Diagnosis Laboratory of the Department of Health in Connection with Ehrlich's Diazo Reaction During 1902. J. S. BILLINGS, JR.
5. The Treatment of Some of the Surgical Complications in Typhoid Fever. JOHN F. ERDMANN.
6. Is the Cognomen, "Chemical Physiology," Scientific? A Study of Vital Processes. JOSEPH CLEMENTS.

1.—Röntgen Ray Treatment of Pseudoleukemia.—N. Senn reports two cases of pseudoleukemia treated successfully by this method. The first is that of a man of 43. The glandular affection dated back one year, and involved extensively the glands of the cervical, axillary, and inguinal regions. He was given treatment daily for the first 10 days, 60 volts, 8 amperes, being used each day; distance of tube from surface, 12 inches, a medium vacuum tube being used. After 10 treatments the glands had undergone a noticeable reduction in size. There was considerable dermatitis, and it was necessary to reduce the voltage and ampérage to 42 and 6 respectively. After six treatments the voltage was again reduced. After 24 treatments had been given, it was found that the affected glands had almost disappeared. The burns were extensive and the treatment discontinued. Two weeks later the glands had entirely disappeared. Three months later the cervical and axillary glands were slightly enlarged. Ten daily treatments were given and the glands promptly disappeared. Several months have elapsed and there has been no return of the disease. The second case is that of a man of 53. The glandular involvement dated back 10 years, the glands of the neck, axilla, and groin being extensively involved. The Röntgen rays were applied to the neck, axillas, elbows, chest, abdomen, and groin of each side every alternate day. After four or five sittings there was unusual softening of the glands and a gradual diminution in their size. After 15 treatments, a slight dermatitis appeared and general symptoms of toxemia. Treatment was discontinued for three weeks, when the glands were found much diminished in size. The applications were again resumed. After 12 treatments the symptoms of toxemia were so pronounced that further treatment was discontinued. Only two small glands could be found and these soon disappeared. Several months have elapsed and the patient considers himself in perfect health. [C.A.O.]

2.—Office Treatment of Rectal Diseases.—S. G. Gant points out the many rectal diseases suitable for office treatment and discusses what he considers the simplest, safest and least painful procedures which accomplish the most certain results. The local anesthetic preferred is eucain B, 3%. He has recently radically cured in his office many cases of small bleeding and protruding hemorrhoids by eucanizing and ligating the tumors, the ligatures being applied in a shallow incision made around their bases. Such piles may be treated by the clamp and cautery, but the operation is not so well suited for the office treatment. Polypoid growths can be easily removed in the office, and abscess cavities can be opened, irrigated and drained. The methods which may be employed in the office treatment of anal fistula are complete division, ligation, and injection. Complete division is the best procedure. The ligation operation is occasionally justifiable in debilitated, phthisic subjects, because it avoids the loss of blood. Complete division of the sphincter is the most certain method of relieving fissure. Superficial ulcers may be speedily cured by securing soft evacuations, cleansing the parts, and applying a solution of ichthyol 10%, silver nitrate 3%, zinc sulfate 4%, or balsam of Peru 25%. Deeper ulcers should be cauterized. Coloproctitis and pruritus in most instances can be successfully treated in the office. The author believes that massage is one of the most essential features in the nonmedical treatment of chronic constipation. Electricity is a very valuable adjunct and faradism has given the best results. Enemas are sometimes necessary early in the treatment. The after-treatment following operations performed in the office consists mainly in keeping the wounds healthy by means of cleanliness, good drainage and topical applications, and in regulating the stools by prescribing two-ounce doses of carabana water, to be taken before break-

fast; and finally in the use of suppositories containing morphin, cocain, and belladonna, alone or in combination, when necessary to relieve pain. [C.A.O.]

3.—Hypnotic suggestion is discussed by W. L. Howard, and some of its practical uses presented. He finds its greatest value in making a diagnosis between functional and organic brain disturbances. The pains of locomotor ataxia, rheumatism, neuralgia, etc., may be relieved, but the relief is seldom enduring, and but few persons suffering from these diseases are good subjects. Hysteria is the best field for the practice of hypnotism. Pain is abolished and anesthesia produced, paralysis, spasm, and contracture corrected, affections of the digestive and genitourinary system, Raynaud's disease, polyuria, anuria, affections of the special senses, and all the expected or unexpected disturbances arising from an unstable nervous organization are cured or modified by hypnotic suggestion. [C.A.O.]

4.—Diazo Reaction.—J. S. Billings, Jr., gives a review of the work performed by the laboratory diagnosis of the health department of New York in connection with Ehrlich's diazo reaction during 1902. He has found that the reaction is more constant in typhoid fever than almost any other sign or symptom, not excepting the Widal reaction in the blood. It is most marked between the fourth and tenth days, being found in the great majority of cases by the fourth day, and in not a few on the third. The more intense the infection the earlier the appearance of the reaction. It begins to fade after the tenth day, and in many cases has disappeared by the beginning of the third week. [C.A.O.]

5.—Surgical Typhoid Complications.—J. F. Erdmann confines his paper to the subjects of abscess of the liver, subphrenic abscess, perforation of the gallbladder, cholecystitis and intestinal perforations. When the abscess of the liver is situated below or within the costal arch, the method of approach is that of an ordinary laparotomy. Should the patient be in a markedly low condition local anesthesia should be employed. When the abscess is behind the ribs a subpleural or transpleural and diaphragmatic operation may be required. This is often best done by the excision of sections of one or more ribs, and careful dissection of the pleura from the costal wall and then from the diaphragm, with puncture through the diaphragm, constituting the subpleural operation. This is only feasible in those hepatic and subphrenic abscesses occurring low in the costal region. Transpleural and transdiaphragmatic operations must be done in those cases in which the pus has collected high in the costal region. A case of perforation of the gallbladder in a woman of 46, occurring at the beginning of the sixth week of typhoid, is reported. An incision was made through the right rectus and a cholecystectomy done. Recovery and union was complete in three weeks. Operative interference in cholecystitis depends largely upon the symptoms presenting. If marked rigidity of the upper rectus segment continues for 36 to 48 hours without any diminution, if the temperature and pulse can be definitely ascribed to a septic condition other than that of the toxemia of typhoid, and if imminent rupture of the bladder is suspected, an operation should be done—cholecystotomy, if the patient's condition is bad or if cholangitis is present; cholecystectomy if cholangitis is not suspected or the patient's condition warrants this procedure. The author reviews the subject of intestinal perforation, and concludes that not more than three or four hours should be given for the shock to subside before operating. He believes that if a fairly clean toilet can be made, no drainage should be used. [C.A.O.]

Medical News.

April 25, 1903. [Vol. 82, No. 17.]

1. The Treatment of Syphilis. W. D. TRENWITH.
2. The Treatment of Acute Gout. J. R. CLEMENS.
3. Chronic Parenchymatous Pulmonary Tuberculosis. WM. N. BEGGS.
4. Spinal Cord Injury, So-called Concussion of the Cord. FRANK PARSONS NORBURY.
5. Report of a Case of Monocular Inferior Hemianopsia. E. S. SAYLOR.
6. Hydragogin: Some Observations Upon Its Use in Diseases of the Heart and Kidneys. M. LOEWENTHAL.
7. The Use of Normal Salt Solution. HARRY FRENCH THOMPSON.

1.—Treatment of Syphilis.—W. D. Trenwith says cleanliness is the main thing in treating the chancre. It should

be washed twice daily with warm water and soap, then with mercuric chlorid 1-2,000, then dressed with gauze wet with the same solution: No effort at excision of the chancre should be made. During the period between the appearance of the chancre and the eruption tonics containing iron should be given, the teeth should be put in the best possible condition, plenty of rest and sleep secured, the body should be well nourished, tobacco and alcoholic beverages should be limited, and everything done to prepare the patient for the oncoming attack. So soon as the eruption appears a serious talk should be had with the patient, and he warned of his necessity to cooperate with the physician. All tobacco, intemperance and coitus should be prohibited. The author now starts the administration of mercury, either by mouth or by inunction. If by mouth, this is not continued longer than the first two or three weeks, when it is replaced by inunctions. He used the official 50% ointment of mercury, and has it put up in wax papers of 30 to 40 grains each. Inunctions are made on successive parts of the body until all parts have received a treatment. After some two weeks this is replaced by a course of iodids for a like period, and then inunctions are again instituted for a like period, to again be replaced by iodids. This alternate treatment is continued for six or seven months, when a rest of three or four weeks is given, after which mixed treatment of the mercury biniodid and potassium iodid is continued to end of the first year. After this large doses of potassium iodid are given for about two months out of every four, with occasional administration of mixed treatment, to end of second year or longer, when all treatment is stopped and the patient watched carefully for a year or more. [A.B.C.]

2.—Treatment of Acute Gout.—J. R. Clemens institutes treatment by giving free doses of calomel, followed several hours later by black draught; this not only for purgation, but to relieve hepatic congestion. After this he keeps the bowels loose with salines and the tincture of colchicum. The latter should continue to be given in small doses so long as there is pain in the joints. The local treatment of the joints is important, and should always consist of some form of warmth. That recommended is a mixture consisting of sodium carbonate, tincture of opium, and belladonna mixed with hot water. Dressings wrung out of this are placed about the joint, covered with oiled paper, and this in turn by cotton wool and a bandage. The diet should be restricted during the acute stage and the patient kept in bed. Never apply cold to a gouty joint. Copious draughts of hot water should be drunk. [A.N.C.]

3.—Chronic Parenchymatous Pulmonary Tuberculosis.—W. N. Beggs calls attention to this form of tuberculosis and states that the great majority of textbooks gives a poor classification of tuberculosis of the lungs, many neglecting this form altogether. He quotes with approval Powell's description of this form of pulmonary tuberculosis, who designates it "chronic tuberculous phthisis." In a somewhat exhaustive paper the author reports 14 cases. He condemns the practice so common among physicians of sending these cases indiscriminately to Colorado when so many of them are doomed to early death. His conclusions are: It is a perfectly characteristic type of pulmonary tuberculosis, distinctly different from those generally recognized. It is constant in its progress and bad in its prognosis. It is scarcely less fatal than phthisis florida, though its duration is longer. It is very insidious, and this tends to cause error on the part of the physician and a mistaken sense of security to both patient and medical adviser. The preceding two reasons render its early recognition of great importance to both physician and patient. [A.B.C.]

4.—See *American Medicine*, Vol. IV, No. 17, p. 648.

5.—Monocular Inferior Hemianopsia.—E. S. Saylor reports the case. A woman of 27 in a fall struck her head against a heater, producing a severe wound. Two weeks later she experienced a flash of light followed by dimness of vision in the left eye. Later she noticed when looking at an object with this eye she only saw but the upper half of it. There was no pain and no inflammation. Examination of the eye showed vision much decreased; there was no detachment of the retina, tension was normal and the bloodvessels were nearly so. Embolism and cortical disease were ruled out. The author

concluded the affection must be retrobulbar neuritis of rheumatic origin. The administration of the salicylates was followed by almost complete relief. [A.B.C.]

6.—Hydragogin in Cardiac and Renal Diseases.—M. Loewenthal has used this drug in a number of cases, and his conclusions are that in hydragogin the profession has a valuable addition to the cardiac stimulants. For functional derangements, like palpitation, he knows of nothing superior to it; and it has a particular effect to increase the power of the heart's contraction in a more regular and uniform, though not in so powerful a manner as digitalis alone. For increasing the specific gravity of the urine in chronic Bright's disease it surpasses digitalis or any other drug known to the author. In severe cases of acute diseases, such as pneumonia, sudden prostrations in fevers, in peritonitis, cardiac exhaustion, and in many other like conditions, we meet with the most signal illustrations of the advantage of the combined action of cardiac remedies as presented in hydragogin. The author begins with 10-drop doses every two or three hours, but if nausea, weakness, copious dejections from the bowels, or intoxication occur, he suspends the remedy for 24 hours, then begins again. [A.B.C.]

7.—Injection of Normal Salt Solution.—H. F. Thompson gives his experience in the use of salt solution. A man of 40 ate plentifully of fish and cheese. Some hours later he was taken with retching, vomiting, and purging. Collapse supervened. His condition on the third day was critical. Ten ounces of normal salt solution injected into the axillary region caused immediate cessation of vomiting, and recovery followed. Another case was that of a woman of 31 with pulmonary tuberculosis not far advanced. She was taken with vomiting and for a week every drug known to the author which is recommended for persistent vomiting was tried without avail. At this time normal salt solution given subcutaneously in the axillary region controlled the vomiting and the patient made a complete rally from her depressed condition. Another was a case of pneumonia in a child of 4½ years. The whole right lung was involved. There was persistent high temperature which failed to respond to bathing. Subcutaneous injection of 6 ounces of normal salt solution had a profound influence on the temperature, reducing it almost immediately, though the child died a week later of heart failure. The author believes that the alarming condition in each of these cases was due to toxins circulating in the blood, hence the indication for the treatment given. For replacing the blood he refers to Anderson's reported case, in which salt solution was administered after each of five hemorrhages in a typhoid case. In each instance there was marked abatement of the symptoms and the patient finally recovered. [A.N.C.]

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1. Problems in Sanitation: Presidential Address Before the American Public Health Association, New Orleans, December, 1902. HENRY D. HOLTON.
2. The Association of Tabes and Multiple Sclerosis: Report of a Classical Case of Tabes with Intention Tremor and Nystagmus. CHARLES J. ALDRICH.
3. The Curative Powers of the X-rays Upon Lupus and Malignant Growths, with Report of Cases. THOMAS J. BUCHANAN.
4. Splenic Anemia: Notes of a Case. A. L. BENEDICT.
5. Report of a Case of Cranial Fistula Cured by Operation. J. A. KEOWN and E. B. SCHILLENBACH.

1.—See *American Medicine*, Vol. IV, No. 25, p. 960.

2.—The Association of Tabes and Multiple Sclerosis.—Charles J. Aldrich details a case of tabes, combined with the following unusual complications: Laryngeal crises, complete abductor and partial adductor paralysis, complete arytenoid paralysis and partial paralyzes of the cricoarytenoidei laterales, hyperthermalgesia and hypercryalgia, truncal hyperesthesia and hyperalgesia, a localized fixed painful area on the wrist, a marked and classic intention tremor, and nystagmus. The patient is a street-car conductor of 53 years, who contracted syphilis 13 years ago, at which time he had three months' irregular treatment by an irregular practitioner. In the case here recorded there is a perfect type of intention tremor with nystagmus in a classic tabetic, yet, in view of the man's age and the fact that nystagmus may occur in locomotor ataxia as well as motor irritations such as tremor, impulsive movements, athe-

toid gestures, the author sees no necessity of complicating our pathology by assuming the simultaneous existence of the two diseases. This latter observation is especially worthy of attention since we have no definite knowledge of either the character or exact location of a lesion which uniformly and invariably produces intention tremor. [F.C.H.]

3.—The Treatment of Lupus and Malignant Growths with the Röntgen Rays.—T. J. Buchanan details five cases illustrative of the curative powers of the Röntgen rays upon lupus and malignant growths. The technic of Röntgen ray therapy and the manner in which Röntgen rays cure carcinoma are given. He concludes as follow: Superficial epitheliomas, lupus, rodent ulcers, eczema, and many kindred skin affections can positively in many cases be cured with the Röntgen rays; the growth of deep-seated carcinomas can sometimes be retarded and the pain very much lessened by means of the Röntgen rays, but that such patients can be permanently cured is as yet not demonstrated; a tube of medium high vacuum is better suited for Röntgen ray therapy than a tube of low power, particularly for deep-seated carcinomas; the part exposed should never be nearer the tube than 12 inches; an exposure should never last longer than 5 or 10 minutes at one sitting; an interval of 3 or 4 days should intervene between each sitting; in order to produce a cure it is neither necessary to produce a burn nor cause any reaction whatever; all cases of inoperable carcinomas, sarcomas, etc., should be treated with the Röntgen rays before they are abandoned as hopeless; the operator must be one well skilled in the use of the apparatus, and after the suspension of treatment carcinomas show a strong disposition to quickly return. [F.C.H.]

4.—Splenic Anemia.—A. L. Benedict details the case of a man of 40. He considers it is going too far to say that splenic anemia is simply the anemia of hepatic sclerosis plus the splenic enlargement and due to portal obstruction, but it may very well be that the hepatic sclerosis is the underlying cause, or that it begins coincidentally with the toxic influence upon the spleen and blood, but usually manifests itself late, simply because of various difficulties of diagnosis. [F.C.H.]

5.—Cranial Fistula Cured by Operation.—J. A. Keown and E. B. Schallenbach detail the case of a female of 25. The sinus was situated in the left frontal bone about four inches above the eyebrow, filled with pus, and extending down to the dura. Two operations were required with several months' intermission to effect a cure. The diagnosis was a probable tuberculous process in the cranial bones. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

REVIEW OF LITERATURE

Unusual Causes of Lead Poisoning, with Report of a Case.—J. Zimmer¹ reports the case of a male 29 years of age, by occupation a lens polisher, at which he had been employed for seven years. From his symptoms plumbism was suspected in spite of the fact that the patient was not aware of handling lead. Lead was repeatedly found in the urine. Later an analysis of the rouge used in polishing the lenses showed unmistakable evidence of lead, although not in large quantities. The base of the preparation is the red oxid of iron, so that the lead is probably an impurity. In view of the obscure nature of this case it suggests that even where there is no direct history of working with lead, an examination of the gums, urine, and the like, might well be made a routine practice among workers in factories, when subjective symptoms are of an atypic character. [F.C.H.]

A Fatal Case of Schonlein's Disease, with Autopsy.—W. T. Watson² reports this case, which occurred in a female child of 10. She had been well up to the beginning of the attack, with the exception of slight and transient abdominal pain for two or three months, and frequent headaches for two weeks prior to the onset. The acute attack began January 28, and death occurred March 13. On February 3 the urine was

highly albuminous, and from February 9 the history was that of an acute nephritis. At autopsy the pathologic diagnosis was acute hemorrhagic glomerulo-nephritis, anasarca and bronchopneumonia. No cutaneous hemorrhages were visible. All the abdominal viscera were extremely edematous. The spleen was enlarged. [A.G.E.]

Pathology and Treatment of Scleroderma in Childhood.—W. Ebstein¹ reports two cases of scleroderma in children. The first patient, a boy of 8, had the disease in its incipency; it had begun with a "rheumatic" onset three weeks before. The skin was thick, did not glide over the underlying tissue, was cold and slightly edematous. There was vasomotor irritability; the tongue could not be put out, the lips and cheeks were stiff, etc.; the skin reflexes were increased. After a three months' course with baths containing from $\frac{1}{4}\%$ to $\frac{1}{2}\%$ of clay, massage with a borated salicylic ointment, and the internal administration of sodium salicylate, 3 grams (45 grains) daily, the boy was improved beyond expectation. The second patient, a boy of 5, reached the clinic one year after the onset of the disease. The sclerosis was very extensive, and contractures of some of the joints had formed. A number of pale scars were seen at different parts of the arms. In this case treatment availed but little. Of all therapeutic measures in this disease, Ebstein thinks better of massage than of any other, but if results are to be obtained, treatment must be early and energetic. [E.L.]

The Symptom-complex of Basedow's Disease.—L. von Schrötter² reports a case of exophthalmic goiter presenting the typical symptoms of that disease, and in addition a peculiar pigmentation of the skin and a swelling of the lower part of the body. The pigmentation was light and dark brown, irregularly distributed, and either sharply circumscribed or fading into the normal skin. The swelling included the lower part of the abdomen and the lower extremities, and gave an appearance similar to that of myxedema. Examination of small, excised pieces of skin and subcutaneous tissue showed a condition of lipomatosis. The case was therefore considered to be one of exophthalmic goiter with changes in the skin, due to altered internal secretion of the thyroid gland. The author is of the opinion that there are three forms of disease due to anomalies in the thyroid gland. (1) Basedow's disease, due to a condition of hyperthyroidism; (2) myxedema, due to a condition of athyroidism; and (3) a rarer class, due to abnormal secretion, or dysthyroidism. [B.K.]

Notes on Urinary Chemistry.—W. G. Smith³ contributes notes on two cases. One patient was a female of 23, whose chief complaints were hypogastric pain and frequent micturition. The first specimen of urine obtained deposited a white sediment one-third inch in depth which, on examination, proved to be leucin. Smith, after an elaborate discussion of the subject, says that leucin is very rarely found in urinary sediments. He does not know of any previously recorded case in which it has appeared as a macroscopic sediment in bulk and unassociated with tyrosin. The second case is made the basis of a description of a reaction between urea and formaldehyd and its clinical significance. Smith concludes that to the clinical physician the relationship of formaldehyd to urine presents three points of practical interest: (1) It yields with urea a white precipitate (probably methylene-urea) which might easily be mistaken for leucin; (2) if present in urine formaldehyd will reduce the copper test, and so introduces a fallacy in testing for sugar; (3) formaldehyd interferes with the detection of small amounts of albumen by means of heat and acetic acid. [A.G.E.]

The Origin of Pulmonary Tuberculosis.—It has been the generally accepted theory that the infection in pulmonary tuberculosis comes by way of the air passages. E. Aufrecht⁴ showed this view to be untenable and evolves a new theory. The tubercle bacilli usually gain entrance to the human body through the tonsils, whence they pass to the cervical and mediastinal lymph glands, which become swollen and often caseous. The adherent bloodvessels are penetrated by the bacilli, which thus gain access to the circulation. From the

¹ Deutsche medicinische Wochenschrift, January 1-8, 1903.

² Zeitschrift für klin. Med., Bd. 48, Heft. 1 and 2.

³ The Practitioner, February, 1903.

⁴ Deut. Archiv für klin. Med., Bd. lxxx, p. 193.

¹ Buffalo Medical Journal, January, 1903.

² Maryland Medical Journal, April, 1903.

cervical glands they pass through the right heart and into the smallest branches of the pulmonary arteries. From the mediastinal glands they may pass directly into the lungs by way of the pulmonary arteries or into the general circulation by way of the pulmonary veins, in the latter case setting up a general miliary tuberculosis. The apices of the lungs are the seats of predilection for various reasons. When the bacilli reach the terminal arterioles they give rise to an increase in the cellular elements of the blood vessel walls, these cellular accumulations forming the so-called gray tubercles. The latter occur in the liver, where no terminal arteries exist. But in organs possessing end arteries, notably the lungs, spleen, and kidneys, a thrombosis occurs, which leads to necrosis and the formation of the so-called cheesy tubercles. Cavities are produced through the setting up of pneumonic processes in the alveoli, the exudates thus formed offering a foundation for the penetration of bacilli from the tubercles. [B.K.]

Syphilitic Heart Disease.—Syphilis of the heart and blood-vessels, at one time considered so rare as to deserve but little attention from clinicians, is today known to be a comparatively frequent sequela of a primary lesion. According to J. W. Runeburg,¹ the varieties deserving attention are gummatous bloodvessels and muscle affections, aortic, with dilation, aneurysmal dilation of the aorta; coronary disease with myomalacia, and sclerosis of the cardiac muscle (this is probably the commonest affection), and diffuse gummatous myocarditis. Cardiac syphilis is characterized by occasional or paroxysmal anginoid pain; cardiac asthma, irregular cardiac contraction with muffled heart sounds and indistinct pulse beats, occasionally murmurs; rarely the disease will lead to cardiac insufficiency with hypertrophy and dilation. If occurring in young or middle-aged persons, without diffuse sclerosis of the superficial vessels, and without other known causal factors, especially if a history of syphilitic infection can be obtained, the case is very likely one of cardiac syphilis. The statistics of aortic aneurysm show syphilitic antecedents, anywhere from 56% to 85%. He emphasizes the importance of an early diagnosis, as much good can be done by an early and thorough course of specific treatment, especially in cases of arteritis, aortitis, and arterial dilation, and even extensive processes are much improved by antisiphilitic treatment. The mortality from circulatory syphilis he places as at high a figure as from syphilis of the central nervous system. [E.L.]

The Micrococcus of Acute Rheumatism.—E. W. A. Walker² gives the results of investigations by himself and Beaton regarding the bacteriology of acute rheumatism. They agree entirely with Poynton that a particular microorganism, and no other, is constantly associated with acute rheumatic lesions and is their causal agent. They have obtained this micrococcus from 15 rheumatic patients and have obtained positive results from four specimens inoculated into rabbits. A minute description of the organism with its cultural characteristics is given. Walker is convinced that by observations of cultures and microscopic sections it is impossible to distinguish this organism from any ordinary streptococcus. He thinks that its recognition has been hindered by the term "diplococcus" usually applied and would replace it by some more general name, as for example, micrococcus rheumaticus. Upon the question of this organism being an ordinary streptococcus or specific hangs the whole argument for the specificity of rheumatism. Walker is strongly of the opinion that it is specific, but as yet can furnish no definite proof. Investigation along the line suggested by Marmorok promises much. The questions demanding investigation are: (1) The specificity of the organism in question; (2) the toxic specificity of rheumatism; (3) the pathways of infection; (4) a specific therapeutic agent. [A.G.E.]

The Influence of Tuberculosis on the Duration of Life and the Earning Capacity.—E. Stadler³ has made investigations in 670 cases of pulmonary tuberculosis in working people, and finds the average length of life of these patients to be from 6 to 7 years. It is longer in persons between 14 and 39 years of age than in those beyond 40. Their occupation has no influ-

ence on the progress of the disease. The ability to work varies with the duration of the illness. After five years half of all patients are still capable of performing some work. Treatment in sanatoriums is of too recent origin to enable the drawing of any final conclusions, but statistics so far show that in one-fifth to one-fourth of cases in the first or second stages of the disease life is lengthened about three years. [B.K.]

Communicability of Bovine Tuberculosis to Man.—In discussing the communicability of tuberculosis from cattle to man, Koch¹ remarks about the unreliability of the statistics bearing upon primary intestinal tuberculosis. Some authors place it as low as 1.4%, others as high as 37.8%. As a matter of fact, Koch has not had a single case reported to him from all the hospitals and laboratories of Germany in 15 months, in spite of repeated requests. He therefore believes that none have been observed, and thinks that the individual judgment of the various observers must be at fault. He reviews the different cases of cutaneous infections reported as having occurred among veterinary surgeons and butchers, and since all but one remained localized, considers them of little value in bearing testimony, especially as many of them heal spontaneously. In the only case in which the skin was claimed to have led to a general infection, the infections were found upon close scrutiny to have been independent of each other. He briefly mentions the negative results of Baumgarten's experiments, who injected bovine tubercle bacilli to combat carcinoma, and in no instance produced tuberculosis. All such testimony, however, is but indirect proof against the communicability. The direct proof against it consists in the fact that when meat or milk containing bacilli are partaken of, groups of infection are observed. Example: Typhoid epidemics. No one has ever reported such epidemics of tuberculosis following the use of tuberculous meat, although it is constantly used in many sections of the country, and all human beings eat living tubercle bacilli at some time during their lives. Not even an isolated case has been reported which could be traced directly to tuberculous meat. The Prussian Government, after making extensive observations concerning such meat, permits its sale, as its infectivity has not been proved. Concerning epidemics and isolated cases occurring as the result of milk and butter from tuberculous cattle, he mentions a number, but as none of them was well studied, he thinks they do not deserve being seriously considered. To place the onus of tuberculous infection upon suspected milk, the clinical symptoms of the disease must be clear, and postmortems must confirm them. All other sources of infection must be excluded with absoluteness. Other individuals partaking of the same milk must be studied concerning their health, and the milk must come from cows with tuberculous udders. He concludes by saying that he cannot vary one point from the standpoint he took at the Tuberculosis Congress in London, where he stated that he does not believe either meat or milk coming from tuberculous cows dangerous to man. [E.L.]

The Pathogenesis of Crises of Hepatic Colic.—The conclusions of M. Dufour² are that three different conditions, or combinations of conditions, may be instrumental in causing the syndrome known as hepatic colic. In the first series is placed peritonitis, more or less localized, having its origin in the gall-bladder; second, a latent peritoneal inflammation that is disclosed only by distention of the biliary passages, the latter having been caused by either a calculus or external pressure; third, pure biliary lithiasis, where the pain is caused by the passage of calculus and is explained by the classic theory usually given. [A.G.E.]

Bovine and Human Tuberculosis.—F. Schanz³ suggests the possibility of identity of the human and bovine tubercle bacillus, but that through some unknown factor the latter is unable to produce in man the same disease as the human bacillus. The bovine bacillus is capable of producing a local skin affection in man (tuberculosis verrucosa cutis), but it cannot produce lupus, although apparently there is no difference in the two organisms. Some other factor, as yet unknown, seems to be necessary for the disease besides the tubercle bacillus. [E.L.]

¹ Deutsche medicinische Wochenschrift, January 1 and 8, 1903.

² The Practitioner, February, 1903.

³ Deut. Archiv für klin. Med., Bd. lxxv, p. 412.

¹ Deutsche medicinische Wochenschrift, November 27, 1902.

² Lyon Médical, March 22, 1903.

³ Wiener klinische Wochenschrift, January 1, 1903.

GENERAL SURGERY

A. B. CRAIG MARTIN B. TINKER C. A. ORR

EDITORIAL COMMENT

Surgery of the Gallbladder and Bile Ducts.—The past few years have witnessed a marked advance in the surgical treatment of the excretory appendages of the liver. Various American and foreign surgeons have contributed important literature to the subject, reciting in some instances large series of cases. It is mainly from the conclusions which may be drawn from the composite picture of many cases, as viewed by different authorities, that we recognize the advance. Kehr,¹ of Halberstadt, has reported the largest series of cases by any one operator. From May, 1890, to August, 1902, he did 720 laparotomies for gallstones on 655 patients; of these 536 were women and 119 were men. The conclusions and suggestions of a surgeon with this enormous experience in the space of 12 years cannot but be of interest to the profession. In his report, Kehr takes to task the quacks, clothed or unclothed in ethical robes, who lead patients to believe they can be cured of gallstones by medical treatment; though in certain forms of cholelithiasis he quite agrees that internal treatment, especially a course at Carlsbad or a similar resort, may allay temporarily the symptoms. According to this surgeon, jaundice is absent in 80% to 90% of cases of cholelithiasis, and even in those cases in which the stone is in the hepatic or common duct, jaundice is absent in 33% of cases. He agrees with the dictum first announced by Courvoisier, and later confirmed by Mayo Robson, Cabot,² and others, that chronic cholelithiasis is most apt to present a thickened and contracted gallbladder. In 30 instances fistula was found between the biliary apparatus and the intestinal tract, and in several instances this had led to ascending cholangitis. Kehr believes that each case must be a law into itself so far as indications for operation are concerned. Corpulent men, as a rule, do not bear the operation well, while women, especially those who have borne children, lend themselves well to this surgical procedure. The indications for operation are different as applied to the rich and the poor. The latter can not afford the expense of temporizing with courses of treatment at the wellknown health resorts. Talleyrand said "statistics is the lie reduced to figures," but the recording by Kehr of a very considerable number of failures and of a mortality rate heightened by including every death from any cause whatever which occurred within 100 days after the operation gives confidence in the statements made. The following figures will indicate the relative frequency of the various operations on the biliary apparatus as performed by this surgeon; the most conspicuous features being the increased number of instances in which he now drains the hepatic duct and the vastly proportionate increase in the number of his cholecystectomies. During the first half of his activity in gallbladder surgery including 360 cases there were 54% cystotomies, 20% cystectomies, 13% choledochotomies, and 1% drainage of the hepatic duct. In the last 360 cases there were 20% cystotomies, 54% cystectomies, 6% choledochotomies, and 41% drainage of the hepatic duct. Thus it appears that cholecystectomy as first performed by Langenbuch in 1882 is becoming very popular with this operator, and according to him it is but 1% more dangerous than cholecystotomy. Mayo,³ with experience in 454 operations for gallstones, places malignant disease as a complicating factor at 5% of operative cases. Kehr estimates it at 10% of those coming to operation, but this author believes since not more than about 5% of gallstone cases come to

operation, the part which stones play in the causation of cancer of the gallbladder must be very small indeed. Kehr found the pancreas normal, so far as palpation could ascertain, in but 66% of the reported gallstone cases. This agrees with the statement of Mayo Robson,¹ who says in cases of gallstone, 'especially where there are small floating stones, it is not uncommon to find the head of the pancreas enlarged and hard, the result of chronic pancreatitis, strongly simulating cancerous disease of that organ. Kehr has performed but one nephropexy in his last 360 gallstone operations. He claims to have had such good results in retaining a wandering kidney in position through the application of a bandage that he now almost universally resorts to this measure. This statement will cause surprise to many surgeons, since many textbooks consider this a troublesome, insecure and unreliable method of holding the kidney in position. Mayo in 454 gallstone operations² reports a mortality of less than 1%. Kehr places his mortality, including all cases of malignant disease, suppuration, etc., wherein the patient died within 100 days after operation, at 15.5%. In uncomplicated laparotomies for gallstone his mortality is 3.5%. In his last 200 uncomplicated laparotomies, in which there was neither diffuse cholangitis nor carcinoma, his mortality was but 1.5%. He asserts that a surgeon should perform at least 100 laparotomies before allowing himself an opinion on his mortality rate. He prefers to operate early, but this is often impractical. In about 10% of cases there are apparent recurrences, but doubtless in many of these is really no stone, the symptoms being due to adhesions, etc. From the above it will appear that this surgeon has contributed materially to the surgery of the biliary apparatus and it is believed that his technic within the abdomen, preceded by the abdominal incision as advocated by Mayo Robson,² marks a distinct advance in the surgical treatment of the gallbladder and bile ducts. Robson's incision is through and parallel with the right rectus muscle at the level of the gallbladder and prolonged upward or downward, as occasion may require. This freely exposes the gallbladder and when the edge of the liver is rolled upward brings the hepatic and common ducts into view, thus permitting proper treatment for any pathologic condition which may be found.

REVIEW OF LITERATURE

Trocar and Cannula for Treatment of Liver Abscess.—Alexander Turnbull³ reports three cases treated by this method. One was a marine officer who was convalescent from fever. He became jaundiced, was put to bed, where he slept well and had a good appetite. Temperature was usually normal in the morning, but rose to 102° in the evening, attended by sweating. Some days later he had a rigor and suffered from hepatic and right shoulder pain. This continued for a month. The liver was enlarged with slight tenderness. The appetite remained good, the tongue clean. It could be noticed that liver dulness was slowly ascending and there was increased hepatic tenderness. Almost three months after the beginning of the symptoms he was aspirated in the sixth intercostal space of the right side, below the nipple, and an abscess found 1½ inches below the surface. A few days later the abscess was evacuated by means of Manson's trocar and cannula. Two pints of pus were evacuated. Drainage was continued for some days and patient made a complete recovery. Two other similar cases given similar treatment likewise recovered. [A.B.C.]

Postoperative Pneumonia.—The statement is often made that pneumonia after operations is due to the deleterious influence of anesthetics, particularly ether, on the lungs. This fallacy is strikingly exploded by observations made on postoperative pneumonia occurring after laparotomies and other interventions under local anesthesia. In some instances the complication is indeed due to ether or chloroform vapor, but

¹ Münchener medicinische Wochenschrift Nos. 41, 42 and 43, 1902.² Medical News, November 30, 1901.³ Medical Record, February 21, 1903.¹ British Medical Journal, January 24, 1903.² Loc. cit.³ British Medical Journal, February 21, 1903.

more frequently other etiologic factors are at work. Such causative agents are: Cardiac weakness, rigidly enforced; prolonged lying on the back; pulmonary embolism brought about by vomiting and swallowing food particles as well as embolism by way of the blood-current, and exposure of the patient's body to the cooling air during operation. Some of these factors have been shown experimentally to exert a pernicious action. Thus rabbits are unable to vomit, and artificially produced incarcerated hernia in them did not lead to pneumonia; on the other hand, dogs can vomit, and in them the same experiment resulted in pneumonia. Whether vagus paresis and infection through the mask are occasional causes of postoperative lung involvement is an open question. Laparotomy is more frequently followed by pneumonia than any other operation, the percentage being as high as 8%, with a mortality of 3% to 4%. Operations on the stomach are very apt to precipitate this complication, while it is seldom seen after operations on the liver. Herniotomy upon incarcerated hernia is frequently followed by pneumonia, which is very rare after herniotomy on nonincarcerated hernia. These facts have been elicited by numerous authors from statistical studies. S. F. Derujinsky¹ has in turn mobilized an exceptionally rich new array of original statistical data, embracing 4,946 operations, with 43 cases of pneumonia, or 0.8%, the mortality from the latter being 0.4%. The complication occurred 9 times after laparotomy, 7 times after radical operations for hernia, 4 times after amputation of cancerous mammae, and 8 times it followed operations on the lips, thyroid gland, esophagus and throat. Uterine operations were complicated by pneumonia 6 times. In 19 cases the causative relation between operation and pneumonia was definitely established; 13 times infection with streptococci was present, 3 times aspiration of food particles took place, and 3 patients suffered from emphysema and bronchitis before operation. The author proposes the following classification of postoperative pneumonia: (1) Cases appearing soon after operation and due to the anesthetic, narcosis pneumonia; (2) cases due to infection, occurring most frequently after obstinate vomiting, infectious pneumonia; and (3) hypostatic pneumonia. [L.J.]

Recovery After Late Laparotomy for Gunshot Wounds of the Intestine.—The case detailed by J. H. Mitchell² was that of a boy of 12, who shot himself with a 22-caliber revolver, the bullet entering the abdomen in the median line nearly two inches below the umbilicus. Operation was performed 16 hours after the injury. Beginning peritonitis was present and 11 perforations of the intestine were found. These were closed with Lembert sutures and the abdominal cavity flushed with large quantities of salt solution. The patient made a steady recovery, though a fecal fistula persisted for nearly two months. The patient was discharged as cured on the sixty-ninth day. [A.G.E.]

Adenocarcinoma of the Rectum.—Charles B. Ball³ discusses the pathology of these malignant tumors. He states that 95% of rectal cancers are of the adenomatous type. The degree of malignancy is indicated by the tendency to recur after operation. If the case comes under notice before the disease has completely penetrated the intestinal tunic, the prospect of complete removal and cure is good. Otherwise, and unfortunately this embraces the vast majority of cases, it is bad. It occurs most frequently after middle life, but cases have been observed as early as 16 to 18 years. Clinically, we observe two types: (1) begins as a flat tubercle in the mucous membrane and submucous tissue. It increases somewhat rapidly by exuberant growth at the margin wall, the center breaks down and forms a crater-like ulcer. The perforation of the muscular coat occurs early. It is most frequent in young subjects; (2) is a more superficial ulceration, and has not the exuberant edges seen in the other variety. The adenomatous tissue is less in quantity and more atrophic, dense connective tissue surrounds the ulcerated surfaces, which tends to contract and narrow the lumen of the bowel, producing intestinal obstruction. The early symptoms of cancer of the rectum unfortunately are trivial, otherwise relief would be sought and found at a time of much greater use and hope to the patient.

Usually the first symptom is a slight chronic diarrhea, more marked in the morning, also blood-stained mucus stools, a large increase in mucus being due to great increase in gland-tissue which the adenomatous growth has caused, this functioning as does the normal. Pain as an early symptom is not prominent. Digital examination should be made in all suspected cases. The growth is usually sufficiently low down to be reached by a well-lubricated finger, especially if bimanual examination is resorted to. [A.B.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Iodipin in Cases of Uterine Fibroid.—J. A. Shaw-Mackenzie¹ has tested the value of iodipin as a remedy for uterine fibroids in two cases, and reports the results, hoping to lead others to similar experiments. Both were instances of large movable fibroids reaching to the umbilicus. The treatment in the second case was by hypodermic injection of two cubic centimeters of iodipin (25% in strength) into the cellular tissue of the buttock and continued injection daily for 10 days on alternate sides, doubling the dose on the fifth day. On the sixth day the tumor was two fingers' breadth below the umbilicus, and the right lobe was easily defined. On the tenth the patient went out of town feeling very well; but returned on the nineteenth, the tumor being much swollen again. The treatment was renewed, the dose increased in amount, and continued for several weeks with marked improvement, and in about two months' time she appeared restored to excellent health. The tumor and lobe could still be felt, but deep palpation was required to make them out. Although the reduction in size of the tumor in the first case was not as remarkable as in the second, still there was a very decided improvement. This treatment does not confine the patient to the bed or house, nor is there apparently any disagreeable effect. [w.k.]

A New Method of Managing the After-coming Head.—Stiffeck² considers the following method of managing the after-coming head an improvement over all others. As soon as the child is delivered as far as the scapulas, he places the patient transversely across the bed and frees the child's arms by raising its legs; the patient is placed in the Walcher position (buttocks elevated, legs hanging down over side of the bed) and the physician, standing between the limbs of the patient, presses with both hands slowly and at short intervals downward and backward directly upon the head of the child. He does this without troubling the least about the position of the head or the breathing of the child. As soon as the head has fully entered the pelvis, the delivery is terminated by him by means of the Veit-Smellie method. He sees in this method a great saving of time, and claims to be able to prevent grave asphyxia by it. The injuries to the child are very rare indeed. He has practised this method in 36 cases with excellent results. [E.L.]

The Surgical Treatment of Puerperal Pyemia.—Ernst Michels³ cites a case of pyemia which Trendelenburg cured by ligation of the right internal iliac vein and the right ovarian vein. He then reports a case of puerperal pyemia in his own experience, in which through the usual methods of treatment the local conditions had been greatly improved, the uterus had contracted, the fetid uterine discharge had ceased, but the general condition continued very alarming with very high temperature and repeated rigors. A distinct fulness was noted in the left inguinal region which suggested a thrombosis of the ovarian vein. Accordingly an operation, which is fully described, was performed and the ovarian vein, which was thickened and dilated, was ligated in two places about half an inch below the renal vein, and then divided between the ligatures. The vein was then exposed to its point of exit from the broad ligament, slit open and a fetid mass of softened thrombus with small accumulations of pus removed. The effect of the operation was surprising; no more rigors occurred, her general condition improved rapidly and, although the wound

¹ *Chirurgia*, February, 1903.

² *Albany Medical Annals*, April, 1903.

³ *British Medical Journal*, February 28, 1903.

¹ *Lancet*, April 4, 1903.

² *Deutsche medicinische Wochenschrift*, January 15, 1903.

³ *The Lancet*, April 11, 1903.

healed slowly, it healed completely and she left the hospital strong and well. [w.k.]

A Case of Procidencia.—O'Callaghan,¹ surgeon to the French Hospital, London, reported a case of procidencia in a single girl; aged 18. Two years previously, while working in the fields, she lifted a heavy pannier, and while doing so she felt something suddenly protrude between her thighs; the poor girl was so frightened and ashamed that she kept her condition secret for two years, until at last the pain and scalding caused by the urine and discharge voided over her excoriated thighs and ulcerated mucous membrane drove her to confide in her mistress who brought her to the hospital. The uterus was anchored by two deep silk ligatures passed through the upper and posterior uterine wall, which caused an anteflexion of this organ thus tilting the cervix backward and upward, giving a maximum tension to the vaginal walls. The operation was a perfect success. No record was found of such a condition occurring at such an early age. No cause for the abnormality could be found. [w.k.]

A Rare Specimen of Uterine Monoma.—At the meeting of the British Gynecological Society, November 13, Snow² called the attention of the society to a rare specimen of what he designates as uterine monoma complicated with three myomas of the ordinary type. He calls monoma what Lawson Tait denominated soft edematous myoma. He pointed out that the monoma was always solitary; was steadily progressive toward death, which it caused within a short term of years, was accompanied by severe and continuous h emorrhage; was more painful and attended by relatively acute symptoms. On the other hand, the much more prevalent uterine myoma is always multiple, need not involve any symptoms whatever, slowly grows throughout a very prolonged period, is never fatal except indirectly, as by bulk or degenerative phenomena. There is thus a wide gulf, clinically and pathologically, between the two varieties. In the specimen shown both forms of tumor were found to exist. [w.k.]

Uterine Myomas.—Cullen³ reports four cases of uterine myoma of very rare character. The first case was a large myomatous uterus with a subperitoneal nodule molded to and filling the pelvis. Strangulated umbilical hernia. Removal of hernial sac. Hysteromyomectomy with recovery. Case 2: A myomatous uterus with very large pedunculated submucous myoma filling the vagina, also with a large subperitoneal nodule adherent to the right ureter and bloodvessels at the pelvic brim. Complete hysteromyomectomy with great difficulty in delivering the submucous myoma per abdomen. There was accidental temporary ligation of the right ureter. Recovery followed. Case 3: A partially parasitic myoma receiving its blood-supply chiefly from the enlarged omental vessels and a densely adherent bladder. Also associated with over 50 liters of ascitic fluid and clinically presenting the typical picture of a patient suffering from a tremendous ovarian cyst. Removal of parasitic myoma was followed by recovery. Case 4 involved removal of a large interstitial and partly submucous myoma. There was subsequent sloughing of inner layers of uterine walls. Removal of the necrotic tissue was followed by recovery. [w.k.]

Vaginal Tear During the Period of Expulsion.—Baumbach⁴ reports the case of a woman with kyphoscoliosis and ankylosis of the right hip-joint who, after passing through six normal confinements (once with twins) came to labor the seventh time again pregnant with twins. The first child was delivered normally; examination a short time after revealed the uterus empty, the posterior wall of the vagina torn, and the second fetus lying in the abdominal cavity within the unruptured amniotic sac. Delivery was accomplished and the tear packed daily thereafter with sterile gauze. The patient made an uninterrupted recovery. The woman was delivered twice afterward, and in each instance was the fetus driven through the posterior vaginal wall into the peritoneal cavity. The treatment each time was the same as at first, and recovery resulted without undue prolongation of the puerperium. [E.L.]

TREATMENT

SOLOMON SOLIS COHEN
H. C. WOOD, JR. ——— L. F. APPLEMAN

EDITORIAL COMMENT

On Systemic Antisepsis.—Ever since the introduction of the antiseptic method into surgery, physicians have had the thought to apply the principle to internal diseases of microbic origin. The earlier germicides have all of them proved more toxic to the patient than to the bacteria, so that for several years the idea of sterilizing the blood attracted but comparatively little attention. Recently, however, the work of Cred e and the dramatic effects in one or two cases of formaldehyd injections have again brought the problem prominently before the profession. Of the various drugs which have been tried from time to time but three today are worthy of serious consideration; these are quinin, Cred e's soluble silver, and formaldehyd. In this review we shall consider only the possibilities of germicidal or antiseptic action; the subjects of antitoxic, fixator, and amboceptor action need much more investigation, and may prove to be fruitful.

Quinin.—Quinin has for years been employed in septicemia with the idea that it is of benefit either by virtue of its effect on the leukocytes or else on the infecting microorganism. It is to be remembered, however, that the lower forms of vegetable life, as represented by bacteria, are much less susceptible to the action of quinin than are those of the animal kingdom, such as the plasmodium. According to Sternberg, the lowest strength in which quinin exercises a distinct inhibitory influence on the growth of bacteria is in the proportion of 1 to 800, while Miquel places the antiseptic strength of quinin at 1 to 182. Taking even the lower figures of Sternberg it would require a dose of 72 grains in a man of 180 pounds to exercise any action upon the infecting germ. It is evident, therefore, that if quinin does any good in septicemia it is not by virtue of its direct bactericidal influence.

Collargolum.—Although there has been recorded a large number of cases of septic conditions in which Cred e's soluble silver has been of apparent benefit it does not seem probable that the remedy acts directly on the cocci. It will be recalled that soluble silver (collargolum) is an allotropic modification of the metal. Cred e's supposition that it retains the bactericidal action of metallic silver is a pure assumption and contrary to our experiences with other allotrops. For example, the so-called "red" phosphorus bears to the animal body relations very different from those pertaining to the ordinary form of this element.

Experimental evidence bears out this conclusion, for it has been abundantly demonstrated that colloidal silver is comparatively feeble either as germicide or antiseptic. Cohn found that it required six hours to kill the Loeffler bacillus even with a solution of 1 to 30. If we accept Cred e's own figures and grant that staphylococci will not grow in media containing 1 part of collargolum in 5,000, it would require much larger doses than he recommends to act even as a feeble antiseptic. It is impossible to have any idea of the amount of drug introduced into the blood by an inunction, and we can therefore judge of the concentration in the blood only by the intravenous dose. Cred e recommends 0.08 to 0.12 gram of collargolum intravenously. In a man weighing 125 pounds this would make a concentration in the blood of about 1 in 100,000. It would, therefore, require at least four times the advised dose to have even the slightest direct effect on the cause of the disease.

Formaldehyd.—A remarkable case reported by Dr. Barrows¹ in which the intravenous injection of a formaldehyd solution appeared to save life in what seemed a hopeless case of puerperal septicemia has directed the

¹ December meeting British Gyn. Soc.

² British Gynecological Journal, February, 1903.

³ Johns Hopkins Medical Bulletin, March-April, 1903.

⁴ Deutsche medicinische Wochenschrift, January 8, 1903.

¹ New York Medical Journal, January 31, 1903, p. 177.

attention not only of the profession but also of the laity to the possibilities of this substance as a systemic antiseptic. It seems to have been the fate of formaldehyd since its discovery to have made theatrical promises of probable utility which have not always been fulfilled. We may recall that at its introduction as a germicide it was alleged to be in corresponding solutions more powerful than even mercuric chlorid; but how far short of this has it fallen! Barrows bases his assertion of the value of formaldehyd in septicemia on the statement that 1 part in 250,000 is germicidal. This is contrary to all recent authorities to which we have access. According to Burgess,¹ a solution of 1 to 250 requires an hour to kill *Bacillus coli communis*, and is equivalent to a 1 to 40,000 corrosive sublimate solution. Marion² says that a 1 to 20,000 formaldehyd solution will kill most bacteria if the exposure be long enough. This seems certainly to be the lowest concentration at which formaldehyd is germicidal, although it is antiseptic in more dilute solutions. There is no room for doubt but that formaldehyd is distinctly more feeble than corrosive sublimate. In Barrows' case he injected first 500 cc. and later 750 cc. of a 1 to 5,000 solution of formaldehyd. Supposing the patient to weigh 120 pounds, this would make the concentration in the blood about 1 to 100,000 for the first dose, and 1 to 60,000 for the second. It is possible that such concentrations might prevent temporarily the development of microorganisms, but it is hardly likely that the germs would be destroyed. That larger doses are not safe is shown by the experiments of Maguire.³ This observer having injected 260 cc. of a 1 to 2,000 solution into his own arm, passed bloody and albuminous urine. So much for theoretic considerations. In the absence of sufficient number of cases to draw conclusions, the most available clinical evidence at our disposal is the experiments of Snodgrass and Elbrecht⁴ upon septicemic rabbits. Although their reports are so imperfect as not to permit of accurate interpretation their conclusions are apparently justified by their work. According to these authors the injection into the veins of rabbits inoculated with streptococci of solutions of formalin corresponding in strength and proportionate in dose to those of Barrows, lessened the mortality, but *no more so than a like amount of normal salt solution*. Dr. Park⁵ has very recently made a series of experiments in which the animals which received formalin died more promptly than those that had no treatment. He has also had a case of septicemia die after the use of the formalin treatment. It would seem plausible, therefore, to argue that Dr. Barrows' patient was saved not by the formaldehyd, but by the salt solution in which it was dissolved! We are not prepared, however, to give so positive an opinion. The whole matter must be considered at present *sub judice*.

REVIEW OF LITERATURE.

Ethereal Oxygen.—Sir Benjamin Ward Richardson⁶ believed what he termed "etheral oxygen" to be one of the most useful of his many contributions to therapeutic resources. In a two-necked Woulff bottle, one neck of which was furnished with a delivery-tube and a valved mouthpiece, he placed 2 fluidounces or more of "ozonic ether" (which is a "30 volume" solution of hydrogen dioxide in ether), poured through a funnel in the other opening, 1 fluidounce of a solution of potassium permanganate (8 grains to the ounce) and then corked that opening while the patient inhaled ether and oxygen through the mouthpiece. He also demonstrated the usefulness of oxygen as a carrier of many other vapors—as ethylene, chloroform, methylene, methylal, amyl nitrite, ammonia, iodine, bromine, benzoine, turpentine, and volatile oils. The oxygen may be freshly evolved from hydrogen dioxide in a flask containing the volatile substance on or in the

dioxid solution, or a gentle current of oxygen from any convenient reservoir may be passed through the medicated solution into the inhaler. When water is not admissible, the volatile substance—say iodine or turpentine—is placed in a good-sized flask with a double neck, and the oxygen simply flows over it on its way to the inhaler. Another method is to charge an elastic receiver with oxygen that has passed over the volatile medicament, and to have the patient inhale directly from this a fixed quantity. Clover's (chloroform) inhaling bag and the cellulite mouthpiece of Richardson are the best appliances for use in this manner.

FORMULAS, ORIGINAL AND SELECTED.

- Influenza (Grip).**—For the cough:
 Ammonium chlorid 5 drams (20.0 grams)
 Dionin 8 grains (0.5 gram)
 Tincture of hyoscyamus 5 drams (20 cc.)
 Syrup of wild cherry 2 ounces (60 cc.)
 Distilled water to make 4 ounces (120 cc.)

- Teaspoonful every two or three hours.
For catarrhal symptoms:
 Powdered extract of belladonna 4 grains (0.26 gram)
 Codein 5 grains (0.32 gram)
 Powdered capsicum 4 grains (0.26 gram)
 Euquinin 1 dram (4.0 grams)
 Acetanilid 1 dram (4.0 grams)

Dispense as 20 powders.
 One every three hours.

- For malaise and pain:**
 Powdered camphor 6 grains (0.40 gram)
 Powdered extract of belladonna 2 grains (0.13 gram)
 Powdered capsicum 2 grains (0.13 gram)
 Saloquinin 40 grains (2.60 grams)

Put into 12 capsules.
 One every two or three hours till relieved.

—Merck's Archives.

FOR INVESTIGATION.

Brief reports of results of the use of drugs mentioned in this section are invited, for the Editor's information and for publication. (See editorial article in issue of January 4, p. 42.)

Vinegar as an Antidote for Carbolic Acid.—In a recent number of the *Boston Evening Transcript* appears a letter from C. H. Ames recommending the use of vinegar as an antidote, both locally and generally, in carbolic acid poisoning. According to this letter several cases have appeared in homeopathic literature in which it has been found efficacious. [H.C.W.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 25, 1903:

SMALLPOX—UNITED STATES.			Cases	Deaths
Alabama:	Mobile.....	Apr. 11-18.....	3	
California:	San Francisco.....	Apr. 5-12.....	15	
Colorado:	Denver.....	Apr. 4-11.....	28	
Florida:	Jacksonville.....	Apr. 11-18.....	1	
Illinois:	Belleville.....	Apr. 11-18.....	3	
	Chicago.....	Apr. 11-18.....	17	2
	Galesburg.....	Apr. 11-18.....	4	
Indiana:	Evansville.....	Apr. 11-18.....	3	
	Indianapolis.....	Apr. 11-18.....	4	2
Kentucky:	Covington.....	Jan. 10-Apr. 18.....	98	
Louisiana:	New Orleans.....	Apr. 11-18.....	8	imp'rt'd
Maryland:	Baltimore.....	Apr. 11-18.....	2	
Massachusetts:	Fall River.....	Apr. 11-18.....	1	
	Lowell.....	Apr. 11-18.....	2	
Michigan:	Detroit.....	Apr. 11-18.....	11	
	Flint.....	Apr. 11-18.....	1	
	Grand Rapids.....	Apr. 11-18.....	7	
	Port Huron.....	Apr. 11-18.....	1	
Minnesota:	Wlona.....	Apr. 11-18.....	1	
Mississippi:	Gulfport.....	Apr. 16.....	16	
Missouri:	St. Louis.....	Apr. 12-19.....	9	
Nebraska:	Omaha.....	Apr. 11-18.....	2	
New Hampshire:	Manchester.....	Apr. 11-18.....	8	
	Nashua.....	Apr. 11-18.....	5	
New York:	Buffalo.....	Apr. 11-18.....	2	1
	New York.....	Apr. 11-18.....	2	1
	Rochester.....	Apr. 14-21.....	4	
Ohio:	Cincinnati.....	Apr. 10-17.....	15	1
	Cleveland.....	Apr. 11-17.....	1	1
	Dayton.....	Apr. 11-18.....	2	
	Toledo.....	Apr. 4-11.....	19	1
Pennsylvania:	Altoona.....	Apr. 11-18.....	1	1
	Johnstown.....	Apr. 11-18.....	1	
	Philadelphia.....	Apr. 11-18.....	10	1
	Seranton.....	Apr. 11-18.....	8	

¹ Lancet, 1900, 1, p. 1797.
² Le Progrès Méd., 1895, xxiii.
³ Lancet, December, 1900.
⁴ Interstate Medical Journal, February, 1903, p. 79.
⁵ Boston Med. and Surg. Jour., 1903, No. 9.
⁶ Cited by Tissler in Cohen's "System of Physiologic Therapeutics," Vol. x.

South Carolina:	Charleston.....	Apr. 11-18.....	5
	Greenville.....	Apr. 4-11.....	1
Tennessee:	Memphis.....	Apr. 11-18.....	1
Utah:	Salt Lake City.....	Apr. 11-18.....	3
Washington:	Tacoma.....	Apr. 6-13.....	2
Wisconsin:	Milwaukee.....	Apr. 11-18.....	1

SMALLPOX—INSULAR.

Philippines:	Manila.....	Mar. 4-11.....	1
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SMALLPOX—FOREIGN.

Austria:	Prague.....	Mar. 28-Apr. 4.....	8
Belgium:	Brussels.....	Mar. 28-Apr. 4.....	9
Brazil:	Bahia.....	Mar. 21-28.....	1
	Rio de Janeiro.....	Mar. : 0-29.....	13
China:	Hongkong.....	Feb. 28-Mar. 7.....	1
	Shanghai.....	Mar. 9-16.....	12
Colombia:	Barranquilla.....	Mar. 22-29.....	1
	Bocas del Toro.....	To April 6.....	3
France:	Paris.....	Mar. 28-Apr. 4.....	1
Germany:	Hamburg.....	Mar. 28-Apr. 4.....	1
Great Britain:	Birmingham.....	Mar. 22-Apr. 4.....	25
	Dublin.....	Mar. 29-Apr. 4.....	12
	Leeds.....	Mar. 29-Apr. 4.....	10
	Liverpool.....	Mar. :9-Apr. 4.....	2
	Liverpool.....	To Apr. 4.....	62
	London.....	Mar. :9-Apr. 4.....	13
	Manchester.....	Mar. 29-Apr. 4.....	24
	Sheffield.....	Mar. 21-Apr. 4.....	4
India:	Bombay.....	Mar. 17-24.....	85
	Calcutta.....	Mar. 14-21.....	3
	Karachi.....	Mar. 16-22.....	1
Italy:	Milan.....	Feb. 1-23.....	4
	Palermo.....	Mar. 28-Apr. 4.....	1
Japan:	Yokohama.....	Mar. 14-21.....	1
Mexico:	City of Mexico.....	Mar. 29-Apr. 5.....	8
Russia:	Moscow.....	Mar. 21-28.....	3
	Warsaw.....	Mar. 21-28.....	2
Straits Settlements:	Singapore.....	Feb. 21-Mar. 7.....	2
Turkey:	Alexandretta.....	Mar. 21-28.....	6

YELLOW FEVER.

Brazil:	Rio de Janeiro.....	Mar. 13-29.....	81
Colombia:	Panama.....	Apr. 6-13.....	3
Costa Rica:	Limon.....	Apr. 10.....	2
Ecuador:	Guayaquil.....	Mar. 21-Apr. 4.....	6

PLAGUE—INSULAR.

Philippines:	Manila.....	Mar. 4-11.....	10	8
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PLAGUE—FOREIGN.

China:	Hongkong.....	Mar. 7-14.....	19	17
India:	Bombay.....	Mar. 17-24.....	1,270	
	Calcutta.....	Mar. 14-21.....	751	
	Karachi.....	Mar. 15-22.....	120	97

CHOLERA—INSULAR.

Philippines:	Cebu.....	Feb. 21-28.....	2	1
	Manila.....	Feb. 21-28.....	2	1
	Opan, Isl. of Cebu.....	Feb. 28.....	4	4
	Talisay, Isl. of Cebu.....	Feb. 24.....	17	10
	Provinces.....	Feb. 1-28.....	135	84
	Not previously reported.....		532	319

CHOLERA—FOREIGN.

India:	Bombay.....	Mar. 17-24.....	1	
	Calcutta.....	Mar. 14-21.....	215	
Straits Settlements:	Singapore.....	Feb. 21-Mar. 7.....	10	
Turkey:	Damascus.....	To Mar. 22.....	28	28

Changes in the Medical Corps of the U. S. Army for the week ended April 25, 1903:

WEBBER, Captain HENRY A., assistant surgeon, now at Pasay Barracks, Manila, will proceed to Neuva Caeceres, South Camarines, for duty.

PATTON, First Lieutenant IRVINE W., assistant surgeon, now at Calamba, Laguna, will proceed to Santo Tomas, Batangas, for duty, relieving Contract Surgeon Edw. N. Bowen, who will proceed to Fort William McKinley, Manila, for duty.

FULLER, Captain LEIGH A., assistant surgeon, now at Pasay Barracks, Manila, will report at Post of Manila, for duty as surgeon at Cuartel de Espana, Manila, relieving Contract Surgeon Edgar W. Miller, ordered to the United States.

NOBLE, First Lieutenant ROBT. E., assistant surgeon, now at Fort Santiago, Manila, will report at Post of Manila, for duty as assistant surgeon at Pasay Barracks, Manila.

CRABTREE, First Lieutenant GEO. H., assistant surgeon, now at Cuartel Melsic, Manila, will report at Post of Manila, for temporary duty as surgeon at Fort Santiago, Manila, in addition to his duties as surgeon at Cuartel Melsic, Manila.

SHAFFER, JOS. J., contract surgeon, is granted leave for one month, to take effect upon being relieved from duty on the Army transport Thomas, and with permission to apply to the adjutant-general of the Army for an extension of one month.

DEVEREUX, First Lieutenant THOMAS, assistant surgeon, is assigned to duty as transport surgeon, Army transport Sumner.

CLEARY, Colonel PETER J. A., assistant surgeon-general, will proceed to Fort McIntosh, Fort Ringgold, and Fort Brown on business pertaining to the inspection of the medical and hospital departments at those posts.

FULLER, Captain LEIGH A., assistant surgeon, is relieved from duty in the division of the Philippines, and will report to the commanding general of that division for assignment to duty with troops en route to the United States via the Suez Canal.

FIELD, First Lieutenant PETER C., assistant surgeon, is granted leave for one month, from about May 15, with permission to apply for an extension of twelve days.

MINOR, JAMES C., contract surgeon, is granted leave for one month, from about May 4.

McCLURE, S. B., contract surgeon, leave granted March 14 is extended one month.

The following-named officers are detailed to represent the medical department of the Army at the twelfth annual meeting of the Association of Military Surgeons of the United States, to be held in Boston, Mass., May 19 to 21: Major Wm. C. Borden, surgeon; Captain Geo. D. DeShon, assistant surgeon. Major Borden will proceed to Boston in time to reach that place on or before May 19 and upon the adjournment of the association will return to his proper station.

ANDERSON, ROBT. A., contract surgeon, is relieved from duty at Fort DuChesne to take effect upon the arrival at that post of First Lieutenant Geo. H. R. Gosman, assistant surgeon, and will then proceed to his home, Clarkedale, Miss.

MCCALL, JAS. H., contract surgeon, is relieved from duty at the United States General Hospital, Presidio, and will proceed to Columbia Arsenal, Tenn., for duty, to relieve Contract Surgeon Frederick D. Branch, who will proceed to Fort Ethan Allen for duty.

SHOCKLEY, First Lieutenant-Major A. W., assistant surgeon, leave granted March 3 is extended fifteen days.

BIERBOWER, HENRY C., contract surgeon, is granted leave for one month from April 13.

FISHER, Captain HENRY C., assistant surgeon, will proceed from Baltimore, Md., to Fort Preble and report to the commanding officer Artillery District of Portland for temporary duty at Fort McKinley during the Army and Navy maneuvers of 1903. After closing up his official business in the district at the termination of the maneuvers Captain Fisher will return to his proper station.

LYNCH, Captain CHARLES, assistant surgeon, will proceed about May 1 from Fort Porter to Fort Preble and report to the commanding officer Artillery District of Portland for temporary duty at Fort Levett during the Army and Navy maneuvers of 1903. After closing up his official business in the district at the termination of the maneuvers Captain Lynch will return to his proper station.

Changes in the Medical Corps of the U. S. Navy for the week ended April 25, 1903:

STREETS, T. H., medical director, detached from the Naval Laboratory, New York, and to duty at the Naval Hospital, Philadelphia, Pa.—April 17.

HARMON, C. E. H., medical inspector, ordered to the Naval Laboratory, New York—April 17.

STEPP, J., assistant surgeon, ordered to the Naval Hospital, Portsmouth, N. H.—April 17.

PARKER, J. B., medical director, detached from the Naval Hospital Philadelphia, and ordered home to wait orders—April 18.

HAAS, H. H., passed assistant surgeon, detached from the Naval Hospital, Portsmouth, N. H., and granted sick leave for four months—April 18.

GATEWOOD, J. D., surgeon, detached from the Lancaster and ordered to the Yankee—April 22.

Changes in the Public Health and Marine-Hospital Service for the week ended April 23, 1903:

SMITH, A. C., passed assistant surgeon, leave of absence for fifteen days from April 8, 1903, granted by Bureau letter of March 25, 1903, amended so that it shall be for ten days only—April 21, 1903.

NYDEGGER, J. A., passed assistant surgeon, relieved from duty at Baltimore, Md., and directed to proceed to Gulf quarantine and assume command of the service at that port—April 21, 1903.

LUMSDEN, L. L., passed assistant surgeon, to proceed to New Orleans, La., and report to medical officer in command for duty and assignment to quarters—April 20, 1903.

ANDERSON, J. F., passed assistant surgeon, to proceed to Great Falls, Mont., for special temporary duty—April 23, 1903.

KERR, J. W., assistant surgeon, to proceed to Gallipolis, Ohio, and Point Pleasant, W. Va., for special temporary duty—April 23, 1903.

RICHARDSON, T. F., assistant surgeon, to proceed to Bay St. Louis, Pascagoula, Pass Christian, Long Beach, Handsboro, Gulfport, Biloxi, Ocean Springs, and Scranton, Miss., for special temporary duty—April 20, 1903.

GOLDBERGER, JOS., assistant surgeon, relieved from duty at Ponce, P. R., and directed to proceed to Vera Cruz, Mex., for duty in office of the United States Consul—April 21, 1903.

FRANCIS, EDWARD, assistant surgeon, to report to director of Hygienic Laboratory for special instructions—April 11, 1903.

FOSTER, A. D., assistant surgeon, relieved from duty at Charleston, S. C., and temporary duty at Cape Fear quarantine, and directed to proceed to Baltimore, Md., and report to medical officer in command for duty and assignment to quarters—April 22, 1903. That portion of Bureau order of April 22, 1903, directing Assistant Surgeon Foster to proceed to Baltimore, Md., revoked, and directed to rejoin station at Charleston, S. C.—April 22, 1903.

ECHEMENDIA, D. M., acting assistant surgeon, granted leave of absence for seven days from April 15, 1903, under provisions of paragraph 210 of the regulations.

FRICK, JOHN, acting assisting surgeon, relieved from duty at Havana, Cuba, and directed to proceed to Tampico, Mex., for duty in office of United States Consul—April 21, 1903.

GOLDSBOROUGH, B. W., acting assistant surgeon, granted leave of absence for three days from April 23—April 23, 1903.

MASON, W. C., acting assistant surgeon, granted leave of absence for three days from May 5—April 21, 1903.

SAFFORD, M. V., acting assistant surgeon, granted leave of absence for two days from April 10, under provisions of paragraph 210 of the regulations.

American Medicine

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Immunity from malaria has often been alleged of natives of malarial countries, but the most recent observations show that such immunity is only partial, not being sufficient to kill the invading organisms though able to resist their poisons. Malays as well as negroes though harboring the germs seem to be uninjured thereby until the host loses resistance from some other cause, such as another infection, exposure, fatigue or starvation. The practical bearing of this discovery is very important to our troops in the tropics, for it shows that every native though apparently healthy must be considered a source of infection and that native servants must not be permitted to sleep in houses with white men unless they all use mosquito-bars. These matters are now becoming the subject of military orders, as shown by reports from the Philippines. They also illustrate the extreme necessity for the employment of expert sanitary advice in tropical warfare. Gradually the sanitarians are making it possible to campaign in places where formerly warfare was dreadfully fatal from unavoidable diseases. Every new discovery must be put to practical use at once by our army surgeons, and the line officers must carry out the recommendations if our soldiers are to benefit by the new discoveries constantly being made. Perhaps it may thus be possible to make service in the tropics as safe as at home so far as infectious diseases are concerned. The need of constant scientific observations on tropical subjects is evident, for at present it seems certain that some tropical places will always have garri-sons of American soldiers.

The Tuberculous Prisoner.—The deathrate of prisoners from tuberculosis is far in excess of the ordinary rate and it is held that this is chiefly due to the fact that the walls, floors, etc., are so thoroughly infected with the germs that new prisoners contract the disease and those already affected are made worse by constant reinfection. A movement is therefore on foot to construct separate prisons for the tuberculous, and it has even been urged that these should be placed in the distant and more healthful regions of the State. We have little sympathy with the plan, for instance, to locate the New York penitentiaries for tuberculous criminals in the Adirondacks, and not much more for building separate institutions nearer by when the prison facilities of a State are already ample. In build-

ing new prisons such separate buildings should be planned and isolation carried out. But in the meantime the pressing duty is to institute a long needed reform in systematic and frequent disinfection of the old walls and floors according to rigid and approved scientific methods. Cornet has demonstrated the need and the effectiveness of such measures. Moreover, the prisoners should be taken in hand and taught the most effective methods of personal and institutional hygiene. The absolute control over them should make this an easy and inexpensive task. In these ways the terrible mortality of these institutions may be immediately lessened at least 50%.

The Government Laboratories of the Philippine Islands.—The recent report of Paul C. Freer, Superintendent of Government Laboratories, Manila, P. I., contains much of interest to physicians and sanitarians. No stronger evidence is needed of the wise foresight which is being exercised by the Department of the Interior of our new possessions than that afforded by the account of these government laboratories and the work already accomplished and inaugurated. The serum institute in its temporary quarters at San Lazaro is pushing the preparation of prophylactic serums and is accomplishing splendid work in combating that scourge of herds, the rinderpest, and will soon be able to supply antipestic, antidipteritic, and other serums. The chemical laboratory has done efficient service in the preparation of quantities of benzoylacetlyperoxid, which has proved to be a valuable intestinal antiseptic in cholera and dysentery. The report of the biologic laboratory is of particular interest, and we shall soon print the detailed report of Director Richard P. Strong of a series of investigations of far reaching importance, and deserving of the highest commendation.

The Etiology of Smallpox.—In last week's issue brief reference was made to the reputed discovery by Professor Councilman, of Boston, of the elusive parasite of smallpox. Dr. Councilman, whose wellknown scientific caution and conservatism add great weight to the announcement, claims that the parasite is a protozoan with a definite cycle of development, consisting of two stages. In the first stage the organism is extranuclear and presents itself as a small, homogeneous body in the protoplasm of the epithelial cell. The body grows

larger and becomes granular and irregular in outline, acquiring a distinct resemblance to an ameba. When it has attained a certain size or age it breaks up into numerous small dots or rings, with which phase the first stage in the life cycle of the protozoan comes to a close. The newly-formed bodies, or spores, may now do one of two things. They may repeat the first stage by infecting other cells, or they may enter the nucleus and pass through the second stage, which is looked upon as being sexual. The first stage unaccompanied by the second is supposed to be characteristic of vaccinia and cowpox, while in true smallpox both stages are found together. The intranuclear body appears first as a small ring, which enlarges and eventually becomes transformed into a mass of rings, which fills the nucleus and destroys it. Coincidentally with the destruction of the nucleus the ring body breaks up into a vast number of spores, which, it is presumed, represent sexual elements. The spores are contained in countless numbers in the ripe smallpox pustule, and when the latter dries and falls off are scattered far and wide. It is through them that the contagion spreads. Dr. Councilman and his assistants, Drs. Magrath and Brinkerhoff, have followed the organism through all its stages without a break. They were particularly fortunate in discovering ocular proof of the mode in which infection of the skin takes place—in one of their slides they found a dermal blood-vessel containing many of the small ring-bodies, the youngest form of the parasite. As in the case of other protozoan organisms of man artificial cultivation has not succeeded. It is *a priori* highly probable that Dr. Councilman's parasite is the cause of smallpox, inasmuch as the great majority of variologists have for more than a decade clung to a belief in the protozoan origin of the disease. Van d. Loeff, R. Pfeiffer, Guarneri, Funck, Jackson Clarke, Monti, v. Sicherer and others have described almost identical sporogenic organisms. Guarneri, as the first, performed inoculations of the cornea with vaccine virus, and confirmed Pfeiffer's observations on the cycles of the parasite. Among the most recent studies are those of Wasielewski, who succeeded in propagating active vaccine bodies in the rabbit's cornea to the forty-eighth generation, proving the efficacy of the material on a calf and on several children. Even if the organisms seen by Dr. Councilman prove to be identical with the so-called Guarneri's bodies, the achievement of the former is none the less remarkable and worthy of the greatest praise. There are many interesting questions the answers of which will be brought nearer by Dr. Councilman's work: How does the organism gain entrance into the body? Is there an intermediate host? Does the parasite produce a toxin, as was suggested by Pfeiffer and Huguenin? What share do bacteria, chiefly the streptococcus, have in producing the clinical features of smallpox? These are a few of the questions pressing for solution. Furthermore, impetus and direction will be given to search for the parasites of chickenpox, scarlet fever, and measles.

The Department for Mental Diseases in the Albany Hospital.—The report¹ of the first year's work

of this department furnishes exceedingly valuable data for those who advocate the reception by general hospitals of cases of acute mental disease. Though this department was instituted practically as an experiment, one year has sufficed to demonstrate conclusively that it is a necessary adjunct to the facilities of the hospital. The modest statement of results by the attending specialist in mental diseases, Dr. J. M. Mosher, is well worth a careful perusal. Following the notation of the hospital wards the new department was designated Pavilion F, thus avoiding a title that was in any way suggestive. During the year 174 patients were admitted. Of these 4 came from the outpatient nervous department and 12 from other departments of the hospital, 8 being surgical cases, 2 medical, and 1 each ophthalmologic and obstetric. There were 6 deaths. Of the patients discharged 41 were transferred to State hospitals for the insane. Quoting freely from the report it has been demonstrated that mental patients from all classes may be received upon voluntary request, and that a small minority resent the confinement and cannot be held. The number of malcontents is not greater than in other departments of the hospital. The length of time patients should remain is still undetermined. Some, while distinctly improving, had to be removed because of lack of means. A fund to furnish aid to such patients has been founded. That class of patients best treated by the diversion of amusement or occupation needs greater resources than can be furnished by the pavilion in question. It is also stated that certain probably curable cases have not been benefited. This indicates the limitations of the pavilion, and suggests that patients whose condition does not demand the active medical treatment provided by a general hospital should not be too long detained. The following conclusion is reached: "It appears, consequently, that we have done more than establish an emergency hospital for temporary care. Prospect of cure has been extended to many patients whose minds have been seriously involved. The principle may be stated that any patient, whose case may be regarded as curable with the means at hand, should be offered the ministrations of this pavilion." The city and State authorities have watched closely the workings of the pavilion, with the result that an appropriation has been granted for doubling its capacity. Many valuable ideas originate in the Albany hospital, but those in charge are to be especially congratulated upon the inception and splendid showing of Pavilion F.

The Source of Crime, the Drink-habit, and Government Revenue.—No one will deny that Sir Robert Anderson is exceptionally qualified to speak as an expert on crime and its origin. All temperance reformers, and none more thoroughgoing than we, will have pleasure in voting Amen! to his statement that "to the drinking habits of the people may be attributed most of the crime, and a very large share of the ill-health and the poverty of the laboring and lower classes." Sir Andrew Clark said that 70% of the cases treated in the London hospitals were due directly or indirectly to drink. Lord Cairns said that the practice

¹ Albany Medical Annals, April, 1903.

of temperance "would empty our gaols," and Lord Chief Justice Coleridge is reported as saying that judges were weary of calling attention to drink as the principal cause of crime. But now comes the great expert who wishes, instead of talking about the matter, actually to get rid of crime. Sir Robert, the expert, he who would prevent both crime and the criminal, he who knows whereof he speaks and is thoroughly in earnest, this man says that the temperance people in England, or rather the teetotalers and prohibitionists, form the one sole compact opposition to temperance reform and to the prevention of crime. Sir Robert's words are these:

But it would seem that no legislation upon this question may be looked for at present; and for the simple reason that the political teetotalers are strong enough to wreck any measure in the nature of a compromise, and no other kind of measure is practicable. Moreover, any radical reform of the drink code would, if successful, involve the abandonment of our present fiscal policy; and that policy commands the almost fanatical support of the great majority of the temperance party. It is not my purpose to enter on a discussion of the merits or demerits of what is called "free trade." But I wish to point out that it operates to keep His Majesty's Treasury "in the same boat" with the public-house interest. For the Treasury largely depends for its revenue on the drinking propensities of the population. The contribution to the general taxes, paid by an ordinary working man with a family to support, amounts to not more than a half-penny a day; but his contribution to the excise in paying for his daily drinks averages at a low computation not less than five pence a day. That is to say the man who drinks pays some ten times more to the public chest than the teetotaler.

This is a sad pass, or *impasse*, to which immoral politics may bring a great nation. We Americans, of course, are not in such a sorry plight. Our government draws none of its revenue from such polluting sources, and our temperance reformers are not involved in such political and illogical absurdities!

Progress in Spelling Reform.—We have no sympathy for the *fonetik folks*, nor for the devisers of Volapuk or other expressions of philologic nausea, but we have every desire to rid the language of barbaric illogicalities and follies that have grown with the unconscious development of the past. It is therefore an exceptional pleasure to note the evidence of effected reform shown in the adoption of sensible spelling by the United States Census Office. This fact puts the reform beyond the stage of doubt and discussion, and renders absurd the efforts of the reactionaries to retain outgrown spellings. Publishing houses which control medical periodicals and publish dictionaries devoted to antique orthographies will henceforth find that their "conservatism" and profound interest in "etymology" and "pure English" will no longer avail. In the "Classification of Causes of Death," and in other circulars issued by the Census Office, we notice the modern instead of the medieval forms of words. We are gratified that even *oedema* and *oesophagus* are forever done away with, and are replaced by *edema* and *esophagus*. *Hæmorrhage*, *leukæmia*, and the more ridiculous *leucæmia*, *anæmia*, *gangrene*, *diarrhæa*, *septicæmia*, *æstivo-*, *anæsthetic*, *sapremia*, *pyæmia*, *hæmoptysis*, *gonorrhæa*, *ozæna*, *goitre*, *perinæum*, and a hundred other solecisms are deleted and replaced by the simpler and better forms. *Aneurism* is wrongly pre-

ferred to *aneurysm*, and *diphtheric* should have been given instead of *diphtheritic*. We are grateful that *lach-* has not been retained in this tearful part of a word, but are sorry that *lacrymal* is preferred to *lærical*. And at last we are rid of *chorioid* and *chorioiditis*, and also of the pepper-and-hyphen-box in *cooperation*. With such great progressive steps it seems strange that the incongruities of some old-time forms of compound words should have been retained. We find *retro-uterine*, and in the next line *periuterine* without the absurd hyphen; *gastroenteritis*, and close by *entero-colitis*; *cardiovascular*, and then *cerebro-spinal*; *gastroenteric* and soon *broncho-pneumonia*. There are no such words as *sarco-*, *broncho-*, *pseudo-*, *cerebro-*, *retro-*, *entero-*, etc., and in thousands of such compounds we do not hyphenate. We do not even see the need of any hyphen in *beriberi*. *Noncancerous* and *nonpuerperal* are correctly spelled.

The International Medical Congress at Madrid, if we may judge from the reports that have reached us, was a sorry affair, and leads to the hope that it may be the last of the series. Science, and especially medical science, does not come out with much credit in these huge gatherings. This feeling on our part does not originate in any sort of political or national sentiment or pique, and is wholly uninfluenced by the unaccountable mismanagement, whereby the United States delegation was not represented in the official responses of the delegates and "was denied admission to the stage." There were said to be 5,000 in attendance at Madrid, but it was a heterogeneous assemblage, including many persons and professions that could be called medical only by a dangerous stretching of the term. Oratory, banquets, and social festivities were apparently thought of more importance than science. "The greatest confusion prevailed," says the cabled report of our amiable contemporary, the *Medical Record*, and "there was an utter lack of systematic arrangements for the meetings. They were held in out-of-the-way places, were not properly announced, and consequently were very poorly attended. No one seemed empowered to give any information regarding what was to be done or how it was to be done. The committees were even more confused than the delegates. The result was that the greatest confusion prevailed during the entire session, resulting in the omission from the program of some of the most important addresses." According to the *British Medical Journal* (to which we owe our thanks for advance reports) the medical and surgical interest of the people of Spain was centered upon a wounded bullfighter rather than upon the Congress. The addresses appear to have contained little that was new or of interest.

Some suggestive figures as to the birthrate are supplied by the pastors of churches at a recent meeting in Jersey City. One pastor of a church, described as the oldest in the country, and attended by people of prominence, reported that the 402 families of his congregation had brought but 19 infants to be baptized during the year. Another pastor, with 360 families in his congregation, had baptized 17 infants, and one with 123 families had baptized but 2, the whole

number of infant baptisms reported from seven congregations, comprising 1,521 families, being only 95, or 1 infant to 16 families. In contrast to this was the report of the pastor of another church in which there were 253 families, and he had baptized 158 infants. Another reported 91 baptisms in 104 families. Now these figures at first sight seem to be without interest or teaching, but they at once become startlingly suggestive when it is learned that the seven congregations with the low birthrate are English speaking, "the oldest in the country," etc., while the average of the German speaking congregations was 3 baptisms to 5 families. The Germans are probably more mindful to bring their children to baptism than are their American coreligionists; but, even making allowance for a decline of faith, the decline of productiveness suggested by these figures is unmistakable. The figures are still more astonishing when it is learned that the gathering of ministers was of the Reformed Church, including the German Evangelical. Thus the older the German stock the lower the birthrate, and those so recently coming here as to still require German in its pulpits have the high birthrate. Race suicide has a new showing in these figures.

Shakespeare's Knowledge of Medicine.—In the April number of the *Westminster Review* a most interesting writer on medico-literary subjects, Dr. John Knott, has a capital article on "The Medical Knowledge of Shakespeare," in which he concludes that the greatest of the poets had an understanding of the principles of surgery and medicine nowhere behind the professional knowledge of the day, and that when he differed from the current authorities it was in the direction of greater accuracy. Most noteworthy is Dr. Knott's demonstration that Shakespeare was in advance of Harvey's discovery, published after the poet's death, as evidenced by the following quotations:

The second property of your excellent sherris is the warming of the blood, which, before cold and settled, left the liver white and pale, which is the badge of pusillanimity and cowardice; but the sherris warms it and makes it course from the inwards to the parts extreme. It illumineth the face, which as a beacon, gives warning to all the rest of this little kingdom, man, to arm, and then the vital commoners, and inland petty spirits, muster me all to their captain, the heart; who great and puffed up with his retinue, doth any deed of courage; and this value comes of sherris. . . .

In the play of *Coriolanus*, the stomach, replying to the attacks of its enemies, proceeds to say:

True is it, my incorporate friends, quote he,
That I receive the general food at first,
Which you do live upon; and fit it is,
Because I am the store-house and the shop
Of the whole body; but, if you do remember,
I send it through the veins of your blood,
Even to the court, the heart, to the seat o' the brain;
And through the cranks and offices of man,
The strongest nerves and small inferior veins
From me receive that natural competency
Whereby they live.

The Early History of Quarantine.—In *Yellow Fever Institute Bulletin*, No. 12, J. M. Eager has published a valuable review of the history of quarantine

in general, and of the origin of sanitary measures directed against yellow fever in particular. During the epoch of the Crusades, however, lazarettoes and leper houses were common throughout Syria and Europe, and leprosy takes precedence as a quarantinable disease. It appears that the Venetians practised quarantine measures against malignant contagious diseases as early as 1403, and that the Portuguese established the first quarantine against yellow fever in 1421. The origin of the theories of contagion is traced in a concise but interesting manner, as is the development of maritime quarantine and of early maritime sanitary laws. Sanitary bulletins (*bulletones sanitatis*), so-called because they were stamped with the "bollo" or seal of the authority issuing them, are first mentioned in Italian writings of the year 1300; they served as bills of health for merchants and other travelers. This little pamphlet of 27 pages supplies an important chapter in the history of preventive medicine.

Hospitals and Nurse-training Schools for Colored People.—The latest annual report of the Frederick Douglass Memorial Hospital and Training School of Philadelphia makes a plea for better support which should enlist the attention of the benevolent. Such institutions, as the report suggests, exist chiefly for the benefit of the rapidly growing colored people, "whose fears and prejudices against hospitals have been almost proverbial." The report also says that a special reason for supporting these northern hospitals is that in the south in the few hospitals that exist the negroes get only the poorest care, being placed in inferior wards set apart for them, and that they "suffer the brunt of all that is experimental in treatment." Is this true? We hope not; and yet, if so, it only adds to the argument already sufficiently strong in favor of these special hospitals for the negro. Is there any such complaint in reference to the treatment of colored patients in northern hospitals? And another question is pertinent: Do colored patients prefer treatment by white physicians and nurses rather than by those of their own race? Good ground for support is urged by the management of the Douglass hospital in that outside physicians may attend their own patients while in the wards.

"Had never been vaccinated at all," "or presented old doubtful scars of vaccination performed in infancy,"—such are the reports, published with most commendable pertinacity, by the Health Department of Chicago, of all the smallpox cases occurring in the city during the week. We hope these reports will not be discontinued, and would suggest at least an annual recapitulation of them, "*pour encourager les autres*," especially the antis.

Football Statistics.—Professor Dexter writes to say that his statistics concerning football show that "the number of men playing football is increasing more rapidly than the number of accidents is increasing, although it is true that the *percentage* of students playing football is somewhat less than it was 10 years ago."

AMERICAN NEWS AND NOTES.

GENERAL.

Smallpox, as officially reported in the United States from December 27 to May 1, amounts to 16,700 cases, with 466 deaths, as against 30,804 cases, with 924 deaths, for the same period in the previous year.

Opium Habit in Hawaii.—A House committee report on an act to regulate the sale and use of opium contains the statement that the opium smoking habit is spreading alarmingly among the natives.

Plague in the Philippines.—Latest news from Manila records the fact that there have been 101 cases of bubonic plague, mostly among the natives and Chinese, in Manila since January, and the disease is apparently gaining ground.

Army Hospital in the Philippine Islands.—Arrangements have been made to erect a large modern hospital and convalescent home at an elevation of nearly 3,000 feet in the mountains near Mariveles for the use of officers and men suffering from the effects of the tropical service.

Cholera in the Philippines.—News from Manila states that cholera again is threatening the Island of Luzon. The bad outbreak in the Camarines is apparently spreading northward. The Cagayan Valley is infected, and it is feared the epidemic will extend over all the islands. Past epidemics have generally lasted more than three years.

Recrudescence of Plague at Mazatlan.—A late report states that plague has reappeared at Mazatlan. Two persons who were serving a quarantine at the observation station have succumbed to the disease. Another case is reported to have occurred in the city. According to official reports, from December 1 to April 15 there were 487 cases of the disease, with 328 deaths.

Hospital Benefactions.—LOGANSPOUT, IND.: Judge D. D. Dykeman has given \$50,000 to Logansport for the establishment of a hospital as a memorial to his wife who died recently. Upon the death of Judge Dykeman his entire estate will be available as an endowment to the institution. BOSTON, MASS.: The late Mrs. Lucy R. Read, of this city, bequeathed \$5,000 to the Sharon Sanitarium.

Rats and Bubonic Plague.—U. S. Surgeon Glennon's report with reference to the rats examined in San Francisco during the month of March is interesting as evidence that the plague has been entirely eradicated. The number of rats delivered alive at the laboratory number 142; those found dead and delivered at the laboratory number 31; those showing lesions of phosphorus poisoning, 21; total number of rats examined, 173. Rats show plague infection first.

Railway Accidents for Three Months.—The Interstate Commerce Commission has issued a bulletin on railroad accidents for the three months ended December 31, 1902. It shows that during that period in train accidents 266 persons were killed and 2,788 injured. Accidents of other kinds, including those sustained by employes while at work, and by passengers in getting on and off cars, etc., bring the total number of casualties up to 938 killed and 11,873 injured. The damages to cars and engines and roadbed by these accidents amounted to \$2,462,056.

Association of American Medical Colleges.—An interesting feature of the meeting of the Association held in New Orleans, La., May 4, was the report submitted by the special committee appointed at last year's convention in Saratoga upon requirements for admission to the freshman year of a medical college. The majority report holds that students applying for admission to the colleges of the Association shall have pursued a four years' course of instruction in a high or normal school, or present a certificate of admission to the freshman class of a State university. The minority report requires a four years' high or normal school course preceded by not less than a six years' course in primary and intermediate schools. The amended report, which was finally adopted, requires four full years of work in a high school or its equivalent for eligibility to admission in a medical college.

Miscellaneous.—BALTIMORE, MD.: Dr. Florence R. Sabin, assistant in anatomy at the Johns Hopkins University Medical School, has been awarded the prize of \$1,000 offered two years ago by the Naples Table Association for the best piece of scientific research work done by a woman. Dr. Sabin presented the results of an investigation on the origin of the lymphatic system. ST. PAUL, MINN.: Dr. Charles Lyman Green, of this city, has been appointed professor of theory and practice of medicine in the medical department of the State University of Minnesota. PHILADELPHIA, PA.: Dr. Edward Martin, professor of clinical surgery in the University of Pennsylvania, has been appointed Director of the Department of Health and Charities. NEW YORK CITY: Dr. Robert F. Weir, professor of surgery; Dr. George M. Tuttle, professor of gynecology, and Dr. G. M. Peabody, professor of materia medica and therapeutics, have resigned from the Faculty of the College of Physicians and Surgeons.

EASTERN STATES.

Oldest Medical Society in the United States.—At Winsted, Conn., on April 28, the Litchfield County Medical Association, the oldest medical society in the United States, not excepting National or State societies, held its one hundred and thirty-ninth annual meeting. The proper officers were elected.

Country Home for Poor Children.—It is stated that Bloodgood H. Cutter, of Long Island, who is known as the "farmer poet," has given to the Episcopal Diocese the old Queenstown Court House at Jamaica, which he has owned since 1894, for the establishment of a country home where children and invalids under the care of the church in the borough of Brooklyn can be taken to secure the benefits of country air and healthy surroundings.

New Issue of Bank Notes to Prevent Smallpox.—At Holyoke, Mass., owing to the prevalence of smallpox the Home National Bank will make an entirely new issue of \$1.00 and \$2.00 notes to lessen the danger of contagion. The bank officers say that the money is probably as dangerous to the community, from a sanitary point of view, as any other means of contagion. The small notes in circulation for a year or two have become very worn and soiled, and give evidence of hard usage. The money is passed from smallpox quarantined blocks for purchase of supplies, notwithstanding the danger of spreading the disease.

Campaign Against Mosquitos.—It is stated that the Brooklyn Board of Health is to begin its annual onslaught upon the mosquito. The comparatively cold weather has, it is said, prevented the board from beginning the work sooner. The plan is to petrolize all ponds and pools where mosquitos are likely to congregate and breed. The board is able to prosecute the work on a larger scale this year than formerly, owing to the fact that it has more funds at its disposal. In addition to the light fuel oil heretofore used, the heavier crude oil, which evaporates less quickly, is also to be used. The lessened number of malarial cases in Brooklyn is evidence that the work of last year has borne fruit. There is good reason to believe that a like decrease will be witnessed during the present year.

To Combat Tuberculosis.—It is said that in three years nearly 3,500 cases of pulmonary tuberculosis in Boston have been reported to the Board of Health, and during that period the physicians have been required to report only such cases as are classified among the infectious diseases, and it is believed that many cases of tuberculosis are not reported. In view of the fact that the nature of the disease, the means by which it is acquired, its course and treatment, are but poorly understood by its victims an association has been formed known as the Boston Association for the Relief and Control of Tuberculosis, whose object it is to prevent the spread of tuberculosis by educating people, showing them how the patients may be treated at home, so as to get well without danger to the other members of the family. It is hoped that this commission may cooperate with the Tenement House Association recently appointed by the Mayor. Work of a similar nature is being done in New York, Montreal and large cities of Europe, to say nothing of the work which has lately been organized in Philadelphia, whose nucleus is the Phipps Institute. Circulars are being distributed by the Association giving the aim, rules and titles, with reference to the prevention, care, and treatment of tuberculosis.

NEW YORK.

Smallpox Aboard.—The French Line steamer "Gascogne" arrived April 29 from Havre with 243 cabin and 999 steerage passengers, and was detained at Quarantine on account of a smallpox case in the steerage. Giovanni Cittadin, aged 19, was sent to a hospital and 122 of his fellow passengers were taken to Hoffman Island for observation. The steamer was disinfected.

Registration for Trained Nurses.—Governor Odell has signed the bill providing for the registry of trained nurses by the New York State University. Only those who are so registered may hereafter legally sign "R.N." after their names, or wear these initials upon their uniforms. The purpose of this law is to enable employers to know the qualifications of persons whom they hire to do nursing. It does not attempt to dictate who shall be employed as a nurse, or who shall undertake to do a nurse's work. It simply provides that persons of insufficient training shall not be permitted to palm themselves off as being qualified equally with those who have spent years in patient study.—[Evening Post.]

Open-air Sanatorium.—It appears that the institution founded in the Adirondacks by Dr. Trudeau for the treatment of tuberculosis was the first in this country to institute the open air and hygienic method of treatment. In 1873, being afflicted with tuberculosis, the doctor went to the Adirondack Mountains in the hope of effecting a cure, when the prevailing sentiment among physicians in this country was to send all tuberculous patients to the warm lowlands, such as Florida. In time the physician became entirely well and conceived the idea of the Adirondack Cottage Sanatorium. Since its founding many tuberculous patients have been treated in the institution, although it is comparatively little known. According to

the figures given about 30% of those treated have been discharged practically cured; 41% with the disease arrested; 19% as improved; 7% in which there was entire failure to arrest the disease process. The expense of running this sanatorium is almost \$50,000 a year, almost one-third more than the receipts the patients would provide. The deficit has been made up in the past largely by private subscriptions from wealthy individuals.

Sale of Mineral Waters.—A timely editorial appears in the New York *Sun* giving the figures of sales of mineral waters in the United States. We quote: "In 1890 47,000,000 gallons of mineral waters from springs in the United States were sold; in 1901, 55,775,000; and in 1902, 65,000,000. The value at the point of shipment now reaches \$10,000,000 a year, and taking into account the expense of transit, bottling, and the profits of retailers, \$18,000,000 or \$20,000,000 must be expended each year for American mineral waters. Following any epidemic of any zymotic disease there is generally reported a marked increase in the sale of mineral water in hotels, in dining-cars on railroads, and in theaters; and very likely this increased care in the use of water is of immense effect toward counteracting the dangers arising constantly from the neglect to care for the public water-supply in accordance with the growth of population. The productiveness of the mineral-water springs of the United States is practically unlimited, and at the rate which the product is increasing it can not be long before the amount sold each year will reach 80,000,000 gallons, nearly equivalent to a gallon per inhabitant. Americans are the greatest water-drinkers in the world."

PHILADELPHIA, PENNSYLVANIA, ETC.

Chester Free from Smallpox.—It is stated that Chester is at the present time free from smallpox after a battle of over two years with the disease. No new cases have been reported since March 28.

The Medical Club, of Philadelphia, will give a banquet on May 15, 1903, in honor of Dr. George H. Simmons, of Chicago, secretary of the American Medical Association; Professor von Mikulicz-Radecki, of Breslau; Professor C. A. Ewald, of Berlin; Professor Hans Kehr, of Halberstadt, and Professor Hermann Tillmanns, of Leipsic, Germany.

Rabies.—At Montclair, N. J., a veterinary surgeon having in detention a dog said to be afflicted with rabies invited the school children of the town to view the incarcerated animal. This was done to eradicate the idea in the minds of many persons that a rabid dog is violent in demeanor, has frothing at the mouth, and other alarming objective symptoms. The surgeon showed on the contrary that the animal is ordinarily quiet but has dry parched mouth and tongue as would ordinarily be seen in a person suffering from a high fever.

Campaign Against Smallpox.—The State Board of Health has inaugurated a systematic campaign against smallpox throughout the State, and the appropriation of \$50,000 by the Legislature for this purpose will very materially assist the board in its purpose to eradicate this evil. It is stated that smallpox exists in many villages throughout the State, and in such places nothing short of a house-to-house inspection, proper quarantine, and vaccination can accomplish the desired end. In Philadelphia and vicinity the disease appears to be dying out, and it is only by such an emergency appropriation as that recently made by the Legislature that the disease can be stamped out in other parts of the State. Vaccination must be continued vigorously until every vestige of the disease disappears.

In Reference to Medical Testimony.—The bill designed to relieve physicians and surgeons from testifying in civil cases with reference to communications made to them by patients has been vetoed by Governor Pennypacker. The Governor is of opinion that the act is so vague and indefinite in character as to deserve the stigma of dangerous legislation. He concedes that there are many circumstances in which it would be highly proper to preserve inviolate communications made by patients to physicians, yet there are circumstances under which it would be highly necessary for the State to be in possession of the facts known to the physician, the keeping of which would defeat the ends of justice. Hence his veto act. The bill does not sufficiently define and make clear the circumstances under which communications to physicians shall be considered private communications.

The Prince of Peace Maternity Hospital.—This institution has been in existence now over four years, during which time it has shown its right to be by the way in which it has been continually overcrowded. It is the only home in the city of Philadelphia, or in fact in the State of Pennsylvania, where a girl who has made her first misstep can be cared for without coming in contact with inmates who have had deeper and sadder experiences. It is also the only maternity hospital where a girl about to become a mother can enter several months before her confinement, and thus be enabled to hide her shame, and where she will be kept afterward until she can return to her friends, or until a suitable position may be obtained for herself

and child. Thus an opportunity is given her of becoming a self-supporting, self-respecting Christian woman. It has also a well-equipped hospital department for the treatment of diseases peculiar to women, and a dispensary, both in active operation.

SOUTHERN STATES.

Deaths in District of Columbia.—In the District of Columbia during the week ended Saturday, April 25, there were 127 deaths. During the week before they numbered 90, and in the corresponding period of last year 118. Of the late decedents 76 were white, representing a deathrate of 19.0, and 51 colored, the deathrate being 29.1. For all the deaths the rate was 22.1 as compared with 15.7 last week and 20.0 last year.

WESTERN STATES.

Typhoid at Stanford University.—The latest reports indicate that the typhoid epidemic prevailing at Stanford University is becoming more extensive. New cases are being reported. The total number of cases up to the present writing is 35 on the campus and 83 in Palo Alto.

To Combat Tuberculosis.—An appropriation of \$200,000 by the next General Assembly for the erection of a sanatorium for the care of tuberculous patients was recommended in a report submitted to Governor Nash by the Ohio Commission on Tuberculosis appointed by the General Assembly a year ago. The report states that 6,000 die annually of tuberculosis in Ohio, and that the disease is not hereditary, but is communicable, and can be prevented and cured. There are said to be 15,000 now in Ohio afflicted with tuberculosis.

Football Prohibited.—After much debate, the bill to prohibit the playing of football in South Dakota has passed the Legislature of that State. By this South Dakota has shown herself to be the only State in the Union which was willing to consider the proposition as anything beyond a joke. Bills to prohibit football have been introduced in the Legislature of at least 10 States during the past six months, but in most cases they have been the subject of ridicule. At Madison one legislator got up before the assembly and moved to amend the bill to include ping-pong, croquet, and golf.

War on Drug Habit in Illinois.—The State of Illinois has declared war on the drug habit and every State's attorney in the various counties has been directed to make a thorough investigation of the conditions and to present his findings before the grand jury. The State Board of Pharmacy is making a determined fight against druggists who sell cocaine, opium, and other opiates, in violation of the law. It has been found that the improper use of drugs has grown to a very large extent, and that it is not confined to any particular class of people. Residents of fashionable hotels and on fashionable boulevards in Chicago are said to be as thoroughly addicted to the cocaine habit as those in the slums and lower walks of life.

Negligent Hospitals.—In his report to the Children's Hospital Society the chairman of the Hospital Inspection Committee, of Chicago, charged that the majority of the children's wards connected with the large general hospitals are overcrowded, contain insufficient air space and deficient ventilation, that the children's departments are in most cases not organized, and that this lack of system in their management defeats their purposes. The committee denounced the antiquated method of feeding infants which is used in institutions devoted to their care; condemned the milk supply as tending to breed disease rather than nourish; deplored the total lack of provision for the care of mentally defective children, and the inadequate facilities for the care of crippled children and infants, those suffering from infectious diseases.

Work Accomplished in Chinatown.—The report of Surgeon Glennon, of San Francisco, gives the work accomplished in Chinatown for the week ended April 18. His summary is as follows:

Number of rooms reinspected.....	2,507
Number of buildings reinspected	354
Persons inspected.....	2,491
Sick inspected.....	52
Dead inspected.....	10
Number of necropsies.....	1
Rats examined bacteriologically	125
Rats found with pest infection.....	0
Places disinfected.....	576
Number of times streets sprinkled with bichlorid solution	3
Number of sewers flushed	6
Notices served to correct plumbing	82
Number of plumbing nuisances undergoing correction.....	27
Number of rat-poison boards rebated.....	80

CANADA.

Sir James Grant Honored.—The physicians of Ottawa, Canada, recently gave a banquet to Sir James Grant, to celebrate the golden jubilee of his entry into medicine. He was presented with a handsome loving cup. He has been located in Ottawa 49 of the 50 years that he has been engaged in the practice of medicine.

FOREIGN NEWS AND NOTES

GENERAL.

Plague in Bombay.—The Marine-Hospital reports state that the outbreak of plague in the city of Bombay occurred in September, 1896, and continues to the present time. During the last year there were more deaths from plague than in any other year since the outbreak. Over 100,000, or nearly one-seventh of the entire population of the city, have died of plague within the last seven years, being an average of over 13,000 a year.

Secret Medicines in Japan.—Very stringent laws have been enacted in Japan in regard to secret proprietary medicines. The importation of those containing a poison from which accidents might result is absolutely prohibited, as is also the sale of those that have deteriorated. The retailer must be informed in regard to the ingredients, proportions and doses, and must specify them in applying to the authorities for permission to sell the medicines.—[*Canadian Journal of Medicine and Surgery.*]

History of Compulsory Notification of Tuberculosis.—The first edict requiring compulsory notification of pulmonary tuberculosis was issued by a king of Spain in 1751. The decree describes the motives for it, and enjoins destruction of the furniture and wearing apparel used by consumptives and replastering the room after a death. Physicians who fail to notify the alcaide of a consumptive patient, or the death of a consumptive, are fined 200 ducats at the first offense and suspended for one year, and for a second offense 400 ducats and exiled for four years. Nurses, servants, and others waiting on the consumptive are required to see that the authorities are notified of the case under penalty of 30 days in prison for the first offense and four years at the galleys for the second. The edict also contains a paragraph directing that dealers in second-hand clothing must keep a record of the persons from whom the clothes are bought and to whom sold.—[*Journal of the American Medical Association.*]

CONTINENTAL EUROPE.

Students at the University of Paris.—During the year 1901-02 there were registered at the University of Paris 12,414 students. Of these 3,827 were students of medicine as compared with 3,957 in 1900-01. Among these were 405 foreigners. In the school of pharmacy there were 1,683 students as against 1,742 the previous year.

Pasteur Cure for Epilepsy.—It is related that a high Serbian official afflicted with epilepsy recently went to the Pasteur Institute at Budapest for treatment for hydrophobia. Under the Pasteur treatment the wound caused by the bite of the dog soon healed, and with this cure his epilepsy also disappeared. The case is attracting much interest in medical circles.

The Spanish public is at present deeply interested in medical or rather surgical subjects from a far different reason. The *torero* Conejito who was wounded in a bullfight a few days ago lies dangerously ill at Barcelona, and all the papers contain full bulletins sometimes issued almost hourly, with full clinical reports of pulse, temperature and sleep. The last accounts are discouraging, and indicate general septic infection. Amputation of the injured limb is talked of as a last resource, and with but little hope of saving life. If a fatal termination should ensue, it will undoubtedly cast a gloom over Spain that the most brilliant successes of the Congress will do little to remove. Meanwhile the small band of *toreros* who stand in or promenade the Calle de San Geronimo are watched with the deepest interest and a respectful reverence that we can never hope to appreciate.—[*British Medical Journal.*]

Attendance at the International Medical Congress at Madrid.—According to the Spanish newspapers the number of foreigners who had inscribed their names as members of the Congress up to April 18 was more than 3,000. This number added to that of Spanish members makes up a total of nearly 6,000. It must be remembered, however, that the Congress can scarcely be called a purely medical assemblage inasmuch as pharmacists, veterinarians, dentists and generally all persons interested in medicine and sanitation are admitted to membership. It would, therefore, be interesting to know exactly what proportion of this motley gathering consists of members of the medical profession. It is anticipated that some 400 Germans and Austrians will attend; among those expected are Professors von Bergmann, Eulenbarg, Leyden, Ewald, von Schrotter. France and Belgium are expected to send between them 600 representatives; among them are Professors Brouardel, Cornil, MM. Robin, Hayem, Doyen, Tuffier, Chantemesse, Lapersonne.—[*British Medical Journal.*]

OBITUARIES.

J. V. Laborde, Professor of the School of Anthropology, Founder of the Société de Médecine Publique et d'Hygiène Professionnelle, and one of the most active members of the Société de Biologie, of which he

was vice-president, died recently in Paris. He was graduated from the Académie de Médecine in 1887, and is especially well known to the profession for his discovery of the method of rhythmic traction of the tongue in the treatment of cases of apparent death.

William Holbrook, in Palmer, Mass., April 27, aged 79. He was graduated from the New York University in 1848. He enlisted as assistant surgeon in the Tenth Massachusetts Regiment and was soon after appointed surgeon-in-chief of the First Brigade of the First Division, Fifth Corps of the Army of the Potomac. He represented his district in the Legislature in 1882. He was medical examiner for eastern Hampden from 1877 till his death.

Joseph S. Eastman, Berkeley, Cal., April 19, aged 48. He was graduated from the Missouri Medical College, St. Louis, in 1878 and was one of the founders and the first president of the Oakland College of Medicine and Surgery. He was a member of the California State Medical Society and of several county medical societies.

James Conlan, of Brattleboro, Vt., May 3, aged 52. He was graduated from the medical department of the University of Vermont in 1878 and has practised his profession in Brattleboro for the past twenty years. He was a member of the State Tuberculosis Commission and had served two terms in the State Legislature.

James A. Roache, of Brooklyn, N. Y., May 3, aged 44. He was graduated from the Long Island College Hospital in 1891 and at the time of his death was one of the staff of St. Mary's Hospital. He was a member of the Long Island Medical Society and the Kings County Medical Society.

J. W. Taylor, of Leesburg, Va., April 28. He was graduated from the Jefferson Medical College, Philadelphia, in 1854, and had been for many years a leading practitioner in Loudoun county, Va.

Frederick A. Sweet, in Bisbee, Ariz., April 17. He was graduated from the New York University in 1889, and was chief surgeon of the El Paso and Northeastern Railway.

Henry C. Bunce, in Glastonbury, Conn., April 15, aged 78. He was graduated from Yale College, New Haven, in 1850 and served as assistant surgeon during the Civil war.

John F. Gaylord, in Plymouth, Mass., April 14, aged 45. He was graduated from Yale College, New Haven, in 1878 and was a member of the Samoset Medical Association.

Andrew G. Selman, a retired physician of Indianapolis, Ind., died April 17, aged 81. He was graduated from the Transylvania University, Lexington, Ky., in 1843.

Deuman R. Kensell, in Columbus, Ohio, April 17, aged 75. He was graduated from the Homeopathic College Hospital, Cleveland, Ohio, in 1859.

William S. Robertson, near Mount Hermon, Va., April 21, aged 72. He was graduated from the Medical College of Virginia, Richmond, in 1854.

Leonard Kittinger, in Wilmington, Del., April 17, aged 68. He was graduated from the Hahnemann Medical College, Philadelphia, in 1863.

Allen R. Smith, of Baltimore, Md., May 4, aged 57. He was graduated from the Baltimore College of Physicians and Surgeons in 1881.

Arthur Jones, in Bellevue, Ohio, April 15, aged 37. He was graduated from the Jefferson Medical College, Philadelphia, in 1898.

John W. DeVaughan, in Milltown, Ala., April 19, aged 72. He was graduated from the Vanderbilt University, Nashville, in 1883.

Uriah M. Gibbs, in Hanceville, Ala., April 18, aged 83. He was graduated from the University of Nashville, Tenn., in 1897.

Morton M. Dowler, in Topeka, Kan., April 13, aged 69. He was graduated from the Rush Medical College, Chicago, in 1865.

Joseph A. Stegmenn, of Philadelphia, April 24, aged 40. He was graduated from the Hahnemann Medical College in 1886.

Thomas J. Elam, near Rucker, Tenn., April 20, aged 71. He was graduated from the University of Nashville in 1858.

Doctor von Kahliden, Professor of Pathologic Anatomy in the University of Freiburg, in Bresgau, died recently.

George M. MacMillan, at Sewickley, Pa., April 16. He was a graduate of the Ohio Medical College, Cincinnati.

Charles L. Youmans, in Baxley, Ga., April 8. He was graduated from the Atlanta (Ga.) Medical College in 1895.

L. H. Kitchel, in Aiden, N. Y., April 20, aged 57. He was graduated from the University of Buffalo in 1870.

Harris E. Paige, of Dover, Del., aged 45. He was a graduate of the Jefferson Medical College, Philadelphia.

Julius Victor Carns, Professor of Comparative Anatomy in the University of Leipzig, died recently, aged 80.

John T. Hendershot, of Otley, Ia., April 5, aged 61. He was a graduate of the Rush Medical College, Chicago.

John C. Wilby, in New Orleans, April 18. He was graduated from the University of Zurich in 1874.

Henry A. Mix, in Oregon, Ill., April 22. He was graduated from the Rush Medical College in 1864.

M. B. Borgono, Professor of Clinical Surgery in Santiago, Chile, died recently.

William M. Lemen, of Martinsburg, W. Va., May 2, aged 72.

John E. Gardner, of Duluth, Minn., May 2, aged 64.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

AN OBSTETRIC SUGGESTION.

BY

ARTHUR DEVOE, M.D.,

of Seattle, Wash.

What may be called the first function of the newborn child is respiration. This failing, the condition of the eyes and the possible need of Credé's antiseptic therein, nowadays so constantly in mind, is a vanished consideration. So many babes are born into the world on the border line between easy viability and advanced asphyxiation that the question of a ready method of promoting respiration is of daily interest to the accoucheur. Here is a point not new except as it is suggested for universal use and not to be reserved for the half suffocated or very tardy breathers.

I do not remember to have seen anywhere the recommendation to make a routine practice of stretching the sphincter ani in all newborn babies before tying the umbilical cord and as an aid to securing prompt and forcible respiration.

I desire to urge this general practice for the promotion of infantile life and have a number of considerations to offer in support of it:

1. Stretching the sphincter ani gives immediate aid to respiration at a moment of partial or advanced asphyxiation which is present in so many of the newborn.

2. For this purpose the little finger may be quickly cleansed and oiled and the operation done for the child while it is in a more or less anesthetic condition; later on the operation becomes more objectionable as causing more suffering.

3. This routine supplies early the important knowledge as to whether a competent sphincter and anal opening exist.

4. As this stretching of the sphincter is an important aid in establishing respiration, so also it may be considered a help to peristalsis and the due establishment of intestinal function, thus probably forestalling an incident like the following:

A baby, 11 days old, having defecated, and voided his bladder, with fair regularity since his birth, was reported by telephone to have frequent crying spells and to strain and grow red in the face as though trying to defecate. The nurse reported that there was no appearance of a tumor either inguinal or umbilical, no intimation of a hernia; and not being a trained nurse she refused to act upon my suggestion to insert a finger and stretch the sphincter ani.

So I must visit this patient, whom I found crying and straining as reported. The anus looked slightly reddened and irritated, and the defecated matter emitted slightly before my eyes looked granular and not of the normal soft consistency. The insertion of my finger caused some crying which soon ceased after the removal of my finger, and the tenesmus and straining did not reappear. One more treatment two days later was given, though it did not really seem necessary. Improved intestinal action as shown by the character of the stools soon became manifest.

The moments immediately following the birth of a child and before severing the umbilical cord are precious and should be seriously employed. I would not wish to suggest a needless care or thought to the attention of the officiating doctor. But this little procedure will not prove burdensome. It is in fact much easier to do than the making of rhythmic traction of the tongue and is of kindred reflex interest. It is safe, easy and timely, conveying vital stimulus to varied functions. Why should it ever be omitted?

CHOREA AND EYESTRAIN: A CRITICISM.

BY

CHARLES J. ALDRICH, M.D.,

of Cleveland, Ohio.

To the Editor of *American Medicine*:—In your issue of March 14, 1903, appears a short article by Dr. Albert R. Baker in reference to eyestrain as a cause of chorea, which seems to me to contain statements that ought not to go unchallenged.

I was present at the reading of this paper, which was the opening discussion of Dr. Dickey's paper on chorea, before the Ohio

State Pediatric Society, at Toledo, January 9, 1902, and listened with some amazement to Dr. Baker's statements, and sincerely hoped that they would not be published. I did not discuss the paper at that time because it seemed to me that a very noted neurologist from Philadelphia, who was present, summed up all there was to be said in the discussion by the simple statement that he did not believe the winking and grimacing of children described by Dr. Baker and which was relieved by glasses was chorea, and that chorea proper could not be caused by eyestrain, since it was undoubtedly an acute specific nervous affection of more or less definite onset, course and limitation. He further expressed himself as believing that lenses when needed would, in genuine chorea, operate favorably by removing a source of irritation and consequently aid in the calming of the nervous system which is so necessary in the treatment of the affection.

Since Dr. Baker's article has appeared in print it seems to me a duty to refute the most evident error which he seems to entertain and which he attempts to perpetuate when he states that the lesson which he wishes to teach is, "*Send the patient to the oculist first and not waste valuable time in giving drugs. Give the spectacles first and follow up with your hygienic and medical measures if necessary.*" (The italics are my own.) This very sweeping, almost squinting observation does not fit in very well with the expressed opinion of Dr. M. Allen Starr, who after examining 2,000 cases collected from various authorities says, "While it is possible that local twitchings of the muscles of the eyes or face or neck may be produced by eyestrain or by irritation in the nasopharynx, true chorea is never, in my opinion, produced by these causes, and treatment directed to the relief of so-called muscular insufficiencies in the eye muscles is useless." Again in an article in the *Festschrift* in honor of Dr. Abraham Jacobi, he takes a survey of 1,400 cases of chorea treated in the nervous department of the Vanderbilt clinic, and yet does not even mention eyestrain as a cause.

Krafft-Ebing in an analysis of 200 personally observed cases mentions shock, fright, rheumatism and infectious disease as causes of chorea, but has not observed, or has forgotten to mention eyestrain as a causative factor.

Osler in his book on chorea gives special consideration to the relation of eyestrain as a cause of the disease, and disposes of all the claims of Stevens by the assertion that of the five cases presented to the New York Neurologic Society by Stevens not a single one was chorea minor.

Ranney's later report on chorea and eyestrain is commented on by Osler, who states: "I do not think that any one of the 12 cases could be really called true Sydenham's chorea, but that nearly all were one or other of the varieties of habit-spasm, or tic, some possibly of hysterical chorea." Since this is quoting the words of neurologists and one celebrated internist, let us quote from one who is recognized as perhaps one of the highest authorities in the United States on diseases of the eye, de Schweinitz, who states that "ordinary chorea and many of the forms of facial spasm, habit-spasm, etc., are materially benefited by correcting refractive errors and anomalies of the ocular muscles, just as they are helped by a variety of other treatments, but I do not believe that there is any proof to show that eyestrain of itself is responsible for their origin, with perhaps the single exception of the so-called habit-spasms affecting the orbicularis and immediate facial area. Certainly many of these will disappear promptly after the refractive error is corrected without any treatment whatsoever, and they will not disappear if you do not relieve the eyestrain. In a constitution predisposed to chorea I presume eyestrain is a very important factor in fostering and perhaps provoking attacks, but that is all." Writing again upon the subject, the same author says: "The evidence, however, seems quite lacking that hypermetropic refraction is the basal cause of chorea, as it is that the chorea is the cause of the hypermetropia."

Now in view of these few facts quoted from the large array of eminent, scholarly men who do not believe that eyestrain can be anything but an occasional exciting cause of chorea, the rather cruel criticism of the profession in which Dr. Baker indulges in the following quotation is certainly regrettable: "It does seem sometimes that the profession as a whole are very

obtuse in adopting new ideas and new methods." It is not a question of new ideas but one of diagnosis, and it has been established that the two New York ophthalmologists were not treating chorea, nor do I believe from Dr. Baker's description that his cases were chorea, and am glad that he conscientiously expresses his doubt as follows: "It is possible that these are not true choreas and should be called habit-choreas, in any event they are met frequently and often are not treated intelligently."

Although not germane to the question of chorea and eye-strain the following quotation from his article should not be offered without comment: "Migraine, that typical eye headache which can almost always be cured with spectacles, is still doped, purged, and dieted, world without end, forever, until the patient takes the matter in his own hands and consults an oculist."

In true migraine, while many remedies and measures may relieve the severe attacks and render them less frequent, yet it remains practically an incurable neurosis. I, who am a victim of this markedly hereditary affection, and unfortunately have transmitted it to my two children, one of whom has been carefully glassed and reglassed without benefit by Dr. Baker and other oculists for the cure of this malady, may be pardoned for having pronounced views upon this question. Indeed, I have sent many other patients to be spectacleed by Dr. Baker and other oculists, but fail to recall a single case of genuine migraine that has been cured. Had Dr. Baker treated his subject as eyestrain and habit-spasm I would not have a word of fault or a criticism to indulge in, but chorea certainly is of itself either an acute specific infection or else the reaction of an especially susceptible nervous system to the toxins of various other acute infections. I myself have so constantly observed increase in the size of the various lymphatic glands of the body occurring in acute chorea and in the absence of history of rheumatism or other acute infections that I have come to look upon it as an acute specific infection expending its force upon the motor cells of an especially vulnerable nervous system.

Guthrie believes chorea to be a selective action of the rheumatic diplococcus upon a nervous system with special predisposition to chorea. Campbell and Thompson have found chromatolysis and swelling of the cells. Dana and others have found embolism of the minute arteries of the brain.

It is an attested fact that rheumatism frequently complicates or precedes chorea; that its occurrence in children of rheumatic parents is not uncommon; that not infrequently when no rheumatism is present it is complicated by endocarditis; that embolism of the arteries of the brain has been known and even of the arteries of the retina.

Now, in view of this array of pathologic findings, how, in the name of common sense could we hope to cure chorea with spectacles, unless to use almost Dr. Baker's own words that after the victim has been refracted "without end, forever, until the patient takes the matter in his own hands and consults," not the oculist, but a physician.

AN UNUSUAL CASE OF ANGINA.

BY

MILTON GOLDSMITH, M.D.,

of Pittsburg, Pa.

Physician to the Medical Dispensary, Mercy Hospital, and to the Pittsburg Free Dispensary.

H. M. N., a white male, aged 36, came to me August 18, 1902, stating that for two years he had been suffering with attacks of pain in his left arm. The attacks were usually brought on by excitement or exertion and even by rapid walking. He had been treated by several physicians and only a few weeks ago had undergone two operations upon the nerves of the arm without obtaining relief.

Family History.—His mother died of gastric catarrh at 67 years of age. His father died at 54, from the rupture of a blood-vessel, blood gushed from his mouth and nose and a diagnosis of apoplexy was made. He had been a hard working man and during the few years preceding his death had been compelled to do heavy hauling for both the Union and Confederate armies. Two sisters died in infancy, two later of typhoid fever and one was drowned. The only living sister is said to have mammary carcinoma. One brother is living and well. There is no history of tuberculosis.

Social History.—The patient has been an ironworker most of his life. He was a bartender one year and a policeman four-while for nearly eight years he carried on professional prize-fighting. He has used alcohol and tobacco moderately and insists that he never drank heavily. He is married and has two healthy children; his wife has had no miscarriages.

Previous History.—He is uncertain as to the usual infections of childhood. Seventeen years ago he was jaundiced for three or four months, during which time he was constipated and occasionally nauseated, but had no pain. Several years later one knee became slightly swollen, but under local applications the condition subsided in a few days. He had specific urethritis four times but had no lues. With these exceptions he has never been sick. Several years ago he was drugged during a prize-fight, and since that time he has been slightly constipated, but by taking some proprietary cathartic, has been able to have a daily evacuation. His appetite has always been good; he sleeps well; is not subject to headache, and except for the attacks of pain mentioned considers himself a very healthy subject.

Present History.—About two years ago, while performing some ordinary motion with his left arm (no suddenness, violence, or twisting) he was seized with severe pain in that member, starting just in front of the middle of the deltoid, immediately below the acromion, then shooting down the outer side of the arm and forearm to the back of the thumb. Since that time he has had attacks varying in frequency from 1 or 2 to 10 or 12 in 24 hours, never being free from them for a period longer than two or three days. Attacks have usually appeared after running, rapid walking or exertion of some kind, occasionally after excessive eating, but they have appeared while sitting perfectly still, or even during sleep. They are more frequent during damp weather. At first the pain could be relieved by pressure over the point of starting, but this means of relief was soon lost. The attacks last 15 to 20 minutes, as it seems to him; they have never been actually timed. He could continue walking, but knows from experience that absolute rest will shorten the attack, so he always stops immediately.

During the paroxysm he notices the radial arteries throbbing, gets very pale and sweats profusely, but has no dyspnea or sense of impending dissolution. Eructations of gas generally end the attack. Several times he has had the sensation of something clutching at his heart, but the pain never begins there, and it is the knowledge that to continue walking will produce this feeling of something clutching or constricting his heart which causes him to stop the moment the pain appears. The arm has lost neither strength nor usefulness; there has never been any tenderness; between the attacks he has absolutely no pain and feels perfectly well so long as he keeps his bowels open. He has been seen by several physicians and told that his trouble was perineuritis.

Treatment has been varied. Blisters over the course of the pain have been tried; he has used a battery and taken strontium iodid with no effect except to upset his stomach. At his request venesection was performed. He has taken morphin and anti-kamnia; the former gave some relief for a time, but soon lost its effect; the latter had little, if any, effect.

About July 25, under chloroform anesthesia, the median nerve was stretched. August 3, under local anesthesia, an incision was made over the seat of pain, the muscles around the joint loosened up and the circumflex nerve stretched. (The descriptions of these operations were given me by the surgeon who performed them.) The first operation had no effect; following the second there was some lessening in the frequency of attacks, but when they did appear they were as severe as ever.

For a few weeks preceding these operations the patient had been at a health resort, drinking largely of the waters there, and was probably taking very good care of himself, and the slight relief obtained was probably the result of this improved hygiene, rather than of the second operation.

Shortly before applying to me he was told to try nitroglycerin. This advice was given by some physician to whom he had told his story, who probably suspected the nature of the trouble, but made no examination whatever.

Examination, August 18, 1902.—The patient is a strapping looking fellow, of large bony and muscular development. His complexion is slightly like that in argyria. There are no enlarged superficial lymphatic glands. The left arm shows a scar at the middle of the inner border of the biceps and one below the acromion, the results of his recent operations. Both are healthy in appearance, the second being somewhat tender, the last operation having taken place only 15 days previously. There is no atrophy or flabbiness of the muscles of the shoulder or arm; no trophic lesions; no tenderness over nerve trunks or in any part of the arm, except at the scar of the last operation. All motions can be performed equally well with both arms, though at present he voluntarily restricts movements of left arm because of tenderness in scar already mentioned. With these exceptions, and some discoloration due to counterirritants, the arm appears perfectly normal. Several healthy scars, results of former injuries, are found on the face and right leg. Pulmonary resonance on the right extends to the sixth rib in midaxillary line; to the level of the eleventh dorsal spine posteriorly; on the left it extends to top of the fourth rib at the left sternal border and to the level of the twelfth dorsal spine posteriorly. All borders descend with inspiration. Fremitus, resonance and breath sounds are normal.

Heart.—Apex beat in fifth interspace $\frac{3}{4}$ inch outside the

midclavicular line; impulse at apex is quite distinct, while there is a less marked impulse to the entire precordia; no thrill.

Superficial dullness begins at the top of the fourth rib at left edge of sternum; extends to left as far as position of apex beat and to the right as far as the left sternal border. Because of the large muscular development, deep dullness could not be satisfactorily determined, but apparently does not extend beyond the right edge of the sternum. At the apex the first sound is roughened, while the second is obscured by a murmur, to be described presently. Pulmonary second sound is somewhat accentuated and also partly obscured by this same murmur. At the aortic area the first sound is roughened and a short systolic murmur is heard in the carotids. A long, moderately loud diastolic murmur is heard, most distinct in the second interspace at right edge of sternum, but also plainly heard in the pulmonary area and less distinctly in the mitral region. This murmur is transmitted toward the apex. The superficial arteries throb visibly; they are not distinctly atheromatous, possibly hard for a man of 36. No arcus senilis. The pulse can be easily felt at the ends of the fingers; it is decidedly of the water-hammer character. With these signs a diagnosis of aortic regurgitation is proper. No capillary pulse, pulsating uvula or murmur in the femorals. No symptoms of failing compensation.

Abdomen.—Practically negative.

Urine.—Amber, clear, acid; sp. g., 1.020; no albumin; no sugar; microscope showed a few leukocytes and epithelial cells. Several subsequent examinations have given practically this same result.

Hemoglobin (by Tallquist scale, 75%). This moderate anemia may be the result of venesections and operations, although enough time has elapsed to make up for this loss.

In deciding upon the diagnosis, it is unnecessary to differentiate from all the conditions this case might correspond to. While the correctness of my views cannot be absolutely proved, I feel satisfied that the case belongs to that group of affections of which true angina pectoris is the type, and shall merely mention those features in which it differs from the classic description of that disease:

1. Early age; disease began at 34.
2. Great frequency of attacks, often 10 to 12 in 24 hours.
3. Pain begins in arm, appearing at the heart always secondarily, and then only after patient fails to become perfectly still upon the appearance of pain.
4. Pain travels along the outer side of arm (the possibility of an anomalous nerve or artery is suggested).
5. Apparent relief in frequency, not severity, following second operation (as previously mentioned, this is probably accounted for by improved hygiene).
6. Normal urine.
7. Absence of positive signs of arteriosclerosis.
8. Moderate degree of cardiac hypertrophy.

Despite the evidence of organic lesions, the possibility of a neurotic basis cannot be ignored. Without taking time for detailed argument, I will simply state that after studying the case for a considerable time, I have not been able to ascribe the condition to a functional basis. The effect of nitroglycerin is in itself strong evidence as to the genuineness of the condition. About two weeks before coming under my observation he began to use this drug, and by taking 1 mg. ($\frac{1}{30}$ gr.) by mouth was able to shorten the attacks markedly.

I began treatment by putting him on .6 mg. ($\frac{1}{100}$ gr.) with tr. aconite .06 cc. (1 minim) every three hours, also ordering syrup of hydriodic acid 4 cc. (1 dram) t.i.d., and giving the usual directions against excitement, overexertion, etc. He did not know he was taking nitroglycerin. During the week previous he had had a number of severe attacks, showing the improvement following his second operation to have been merely transitory.

The subsequent history of the case is as follows:

Immediately following the regular doses of nitroglycerin the number of attacks dropped to less than half the former number, becoming at the same time much less severe. He found himself able to run short distances and indulge in other forms of moderate exertion which had hitherto always brought on an attack. Within a few weeks, against my advice, he decided to return to work, after an idleness of two years. He secured a position in a rolling-mill, where he was simply an overseer, but occasionally had to assist in emergencies. As a rule he was able to take part on these occasions without exciting an attack. Improvement continued steadily for about two months, after which he remained stationary. During this time there was a slight increase in the size of the heart, while all the murmurs became more marked.

In a paper by Dr. J. H. Musser¹ attention is called to the fact that dilation of the heart in a patient the subject of angina pectoris is frequently attended by a subsidence of the symp-

toms and at the same time by a change in the physical type of the individual. The patient under consideration may be an illustration of this rule. The only physical change noted was a decided diminution in his sexual sense.

The pulse for a time lost its Corrigan character. After reaching this stationary stage, with the dose of nitroglycerin already mentioned, beside taking 1 mg. ($\frac{1}{30}$ grain) whenever attacks appeared, I hesitated to increase the quantity.

Erythrol tetranitrate, .06 gram (1 grain) 4 times a day was tried for two weeks, but had to be discontinued because of the expense; it had no effect during the brief time it was taken. Another point of interest was the fact that after the first great improvement attacks appeared only in damp weather. Thinking of the possibility of a rheumatic tinge, a course of salicylates was prescribed but with no effect whatever. One attack came on just as he was entering my office. It lasted about five minutes, and did not differ from his own description. Pulse was 128 at the beginning and 100 at the end of the attack.

I immediately gave him two hypodermic tablets of nitroglycerin, 6 mg. of each ($\frac{1}{30}$ grain); they happened to be some I had had on hand about two years, probably of no more value than so much saccharum lactis; the effect was what might have been expected from the latter article, in fact he insisted that there was nothing in them.

Shortly after this the man disappeared, and I did not see him until ten weeks later. He had decided to stop "doctoring," and had bought 1,000 nitroglycerin tablets, 1 mg. ($\frac{1}{30}$ grain) and was taking them only when he felt attacks coming on, these varying from 1 or 2 to 10 or 12 a day, rarely the larger number; on bright days there were rarely any. This has been the only drug which ever gave quick and certain relief. When the weather is fair he can undergo moderate exertion with impunity, but during damp weather very little exertion will excite an attack.

Examination at this time, January 22, 1903, showed apex in fifth interspace, one inch outside midclavicular line. Superficial dullness begins at top of fourth rib at left edge of sternum.

Auscultation at the apex shows a systolic murmur transmitted to the anterior axillary line. A systolic murmur is heard at the aortic cartilage and in the carotids. The second pulmonary sound is obscured by the aortic diastolic murmur, which is transmitted down the sternum and toward the apex. Pulse is typically Corrigan and drops a beat occasionally. There is a slight capillary pulse apparent, though it should be mentioned that this examination was made at night. His general health is good and he is still at work and taking a fairly active interest in a local political campaign. I have not seen the patient for nearly three months, but while the further study of the case must be left to the future, it has seemed of sufficient interest to justify its presentation in its present unfinished state.

EMANSIO MENSIMUM.

BY

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To the Editor of American Medicine:—I desire to place on record the following cases of emansio mensium:

I have had under observation for the past four years a young, white, unmarried woman of 23, in whom there is complete suspension of the menstrual function, and she has furthermore assured me that she has never had a flow at any previous time. Examination showed an infantile uterus; it was impossible to palpate the appendages. At long intervals there has been a slight hemoptysis; otherwise she has been perfectly well in every respect.

A second case is that of a married woman, aged 28, who has a child 3 years old. She menstruates once or twice a year, but has gone 14 months (no pregnancy) without losing a drop of blood vicariously or otherwise. She is well nourished, and as a rule of a cheerful, sunny disposition, excepting at times a marked irritability manifests itself of sometimes a day's duration.

An Italian translation of Dr. J. Madison Taylor's and Dr. William H. Wells' wellknown "Manual of Diseases of Children" (second edition, 1901) is being published by the Unione Tipografica Editrice, of Turin, Italy, the first of the twenty fascioli of which the Italian translation will be composed having just been issued from the press. The translation has been undertaken by Dr. Mario Flamini, of the Pediatric Clinic of Rome; Professor Luigi Concetti, director of the Pediatric Clinic of Rome, has written a preface, and Dr. Francesco Valagussa, adjunct professor and docent of the Pediatric Clinic of Rome, has made various notes and additions. The translation also has been somewhat revised by the authors, who have been in constant communication with Dr. Flamini, forwarding him notes, etc. The occasion is one of felicitation not only to the authors, but to American medicine generally, inasmuch as the manual was chosen as being especially adapted to clinical teaching in Italy.

¹ Transactions of the Association of American Physicians, 1897.

ORIGINAL ARTICLES

MEDICAL EDUCATION IN THE UNITED STATES.¹

BY

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One of the chief objects of the organization of the American Medical Association was the elevation of the standard of medical education in the United States. In the president's address, the Father of the Association, Dr. N. S. Davis, stated that "the purpose of the organization was the improvement of our system of medical education and the direct advancement of medical science and practice."² That medical education in that day was defective, as recognized by the founders of the Association, is shown by the report of the Committee on Medical Education in the year 1850. The committee said, in part, as follows: "Medical education is defective because there are too many medical schools; the teachers are too few. There are too many students. The quantity of medicine taught is too limited; the quality too superficial, and the mode of bestowal of the honors of medicine too profuse and too unrestricted."

For many years the Association showed its interest in and attempted to influence the elevation of the standard of medical education through a committee on medical education. The Transactions of the Association of the earlier years show many reports of this committee, which display much thought and effort on the part of the Association to improve the status of medical education at that period of time. James R. Wood, as chairman of the committee, in the year 1858 recommended that the various medical colleges of America be requested to send delegates to a convention of medical colleges, to consider the matter of medical education. This movement finally resulted in the formation of the Association of American Medical Colleges, which thereafter represented, to a degree at least, the American Medical Association in its efforts to improve medical education. Later, the Southern Medical College Association was formed. Together these associations represent about 80% of the regular medical schools of the country, and these colleges have, in a general way at least, fulfilled the minimum requirements prescribed by the rules of the associations in regard to the preliminary education of students, the length of the college course, and the character of the curriculum.

About 25 years ago the Illinois State Board of Health, through the splendid efforts of Dr. J. H. Rauch, its secretary, made a report on the number and character of the medical schools of the country. This board adopted a minimum of requirements of medical schools as a necessary step toward the recognition of their diplomas by the State Board of Health of Illinois. This minimum requirement of the State Board of Health was gradually increased from time to time, with the result that many of the medical schools were obliged to raise the standard of medical education to enable their graduates to obtain licenses to practise in Illinois. Other States followed Illinois in requirements for better methods of medical education, with the result that the standard of education in the country was very much improved.

MEDICAL SCHOOLS OF THE COUNTRY.

In the earlier days of our country, the need of physicians was met by the organization of medical schools which were, as a rule, proprietary in character. These schools attempted the education of physicians on the then existing conditions of medicine by teaching in a didactic way the principles and theories of medicine and surgery. The branches usually taught at that time consisted of anatomy, physiology, chemistry, materia medica, obstetrics, the practice of medicine and of surgery. But little opportunity was offered in the great majority of the schools for extensive, practical teaching in anatomy or chemistry, and but a moderate amount of clinical work in the so-called practical chairs. The course of medicine in the college

consisted of two annual sessions of four or five months. The course was not graded. The student attended all the lectures and clinics taught during his first year, and the second year was a repetition of the first. This class of schools was rapidly increased in the course of time. The chief reasons therefor were the fact that it was recognized that a connection with a medical school was profitable, directly and indirectly. The prestige which the teacher enjoyed among the graduates and the laity brought him a remunerative consultation and private practice. In most of the States it was easy to incorporate and obtain a charter for a medical college. It cost comparatively little to conduct and maintain the institution. Lecture-rooms were obtained at trifling cost. The dissecting-room was not worthy of the name of a laboratory, and the chief expense in maintaining it was the cost of dissecting material, which was usually deficient in quantity and poor in quality. Medical schools were organized all over the country, without reference to the needs of the people. Medical education was prostituted. To obtain a sufficient number of students many institutions showed a most degraded disregard of the moral and mental qualifications of the matriculates. The income of the school was wholly derived from the tuition of students, and no applicant was turned away who had the cash with which to pay his way. To add to the facility of obtaining a medical college course, there were organized in some cities evening schools, the hours of college attendance occurring from 7 to 9 or 10 o'clock at night. These sundown institutions enabled the clerk, the street-car conductor, the janitor, and others employed during the day to obtain a medical degree.

In spite of the general tendency to increase the facility by which a medical degree could be obtained, there was a force at work to improve the methods of medical education. A few older medical colleges and an occasional new one set the standard high in relation to the existing status of medicine. There were earnest, forceful medical men in some of the schools who fought for a higher standard for matriculation and graduation.

The medical college associations exerted a splendid moral influence for good, and the State boards in all the more advanced States have, by mandatory legislation, compelled the colleges to raise the requirements in reference to the preliminary education, the length of the annual session, the time of medical college study, the character of the curriculum, etc. As a result, the status of medical college education has been very much improved in the last 20, and chiefly in the last 10 years. But, improved as it is, there are evils which menace us, the chief of which still are, too many medical schools, too many students, and inadequate facilities for the proper teaching of medicine.

The improvement in medical college requirements has increased the cost of the maintenance of the medical college to a degree that it is no longer a profitable financial venture. There can be no dividends. Indeed, the proprietors of the private institution must often make up a deficiency in the annual budget. In spite of this fact, medical colleges have continued to increase steadily.

In 1877 there were 65 medical schools in the United States. In 1882 this number had increased to 89, and 1901-02 to 156. The enrolment of students and the number of graduates have also increased, in spite of the fact that the requirements for matriculation and graduation have been increased. In 1882 there were¹ 14,934 matriculates, and this number was increased in 1901 to 26,417, and in 1902 to 27,501, an increase of about 100% in 20 years.

The number of graduates in 1882 was 4,115; in 1901, 5,444; in 1902, 5,002, an increase of about 25% in 20 years. If, in 1850, there were too many medical schools and too many students, what can we say of the condition today?

It has been estimated that there is an average of one physician to 600 of the population of the United States at the present time. The natural increase in the population of the country, and the deaths in the ranks of the profession, make room each year for about 3,000 physicians, based on the proportion of

¹ President's Address, delivered at the fifty-fourth annual session of the American Medical Association, at New Orleans, May 5-8, 1903, and published synchronously with the *Journal American Medical Association* by courtesy of the Editor.

² Transactions A. M. A., Vol. xvi, 1865.

¹ The *Journal of the American Medical Association*, Vol. xxxix, No. 10, p. 574.

one physician to 600 of the population. With 5,000 or more graduates each year, a surplus of 2,000 physicians is thrown on the profession, overcrowding it, and steadily reducing the opportunities of those already in the profession to acquire a livelihood. The evil of an overcrowded profession is a sufficient cause of complaint, but the cause thereof is the important point for us to consider and, if possible, remove. To correct the evil, the ease and facility with which a medical degree may be secured in this country must be diminished. As before stated, there are now 156 medical schools in this country. Of these, 30 are sectarian, and 136 are so-called regular schools. Fifty-eight are medical departments of universities, of which 24 are State institutions. The relation of the medical school to the university in most instances is a nominal one only. In but few of them is the control of the faculty or the finances of the medical department vested in the university proper. In a very few of them the sciences fundamental to medicine are taught in the university. In the majority of these schools these departments are duplicated in the medical department, and are taught by members of the medical faculty. In most instances, too, the teachers of the fundamental branches are physicians who devote but a part of their time to teaching. They teach without salary or for a nominal one only. Their remuneration is obtained by private practice, to which they must devote their best energies, to the detriment of their value as teachers. The clinical department of these schools is, in most instances, wholly inadequate. The majority of such schools depend on the general hospitals situated near them for the privilege of the use of clinical material. Necessarily, these clinical advantages have great limitations, inasmuch as they can not be fully controlled for the purpose of proper bedside teaching, or for scientific investigation. Some of the medical schools which are connected with State universities are situated in small cities where it is impossible to command an adequate amount or variety of clinical material. The connection with a university which many of the schools enjoy is, therefore, almost valueless in a pedagogic sense. The majority do not differ materially from the private or proprietary schools in their value as teaching institutions. Ninety-eight of the medical schools in the country are private corporations, organized, maintained and, as a rule, owned by the faculty. If, in earlier years, these institutions were sources of direct financial profit to the owners, they have ceased to be so now—at least most of them. The evolution of medicine has made it necessary to extend the laboratory method of teaching. As these schools attempt to teach the whole curriculum, the erection, equipment and maintenance of the necessary laboratories have so increased the cost of conducting the schools that they are usually no longer self-supporting. The temptation is in such schools to conduct them on a plane which shall just comply with the minimum requirements of the various State bodies which regulate medical practice in the several States. They are maintained ostensibly to teach medicine, but in reality for the prestige which a professorship affords the teacher in his private and consultation practice. Proprietary schools depend on general hospitals and dispensaries for clinical material. What was said of the status of clinical teaching of the medical departments of the universities is true also of the proprietary college. These schools can not hope to improve their present standards. The majority attempt to maintain laboratories and other expensive means of teaching which a modern medical education demands. But in how many are the laboratories worthy of the name? What kind and variety of instruments and apparatus do they afford? Are their teachers of the sciences of the fundamentals of medicine capable? They can not hope for better conditions, because the time when a student's tuition will pay the school for his instruction, if he is properly taught, will never return. Medical education of the future must be based on the status of medical science. That basis is recognized now, but is attempted in the great majority of our medical institutions in a very superficial way.

SCIENTIFIC MEDICINE.

The great and important discoveries of Pasteur and the practical methods devised by Koch in bacteriology marked a new era in medicine. Before the facts made clear by these dis-

coveries, the hypotheses and theories of other days have disappeared. Our knowledge of man and the lower animals and of the diseases and evils which afflict them has been revolutionized within the last 20 years. The advance in medical knowledge has been greater in that period than in all preceding time. Medicine now embraces many more subjects, chiefly fundamental ones, than were known 20 years ago. Formerly a very superficial knowledge of a few isolated facts in general chemistry and human physiology and a memorized knowledge of human anatomy and of *materia medica* enabled the student to learn the practice of the art of medicine and surgery. Now, the problems which confront the clinician and investigator in medicine and surgery compel him to have a good and working knowledge of general, physical, and physiologic chemistry, of general biology, bacteriology, pathology, physiology, embryology, pharmacology, histology, and anatomy. The physician who has not a practical knowledge of these fundamental subjects can not clearly understand the methods of others engaged in scientific investigation, nor can he rationally utilize the discoveries of others in his work. Medicine today is applied science. If we utilize the knowledge of today in an attempt to cure and prevent disease, it must also be an experimental science. No one can practically apply or rationally experiment with what he does not know. The fundamental studies of medicine must, therefore, be acquired by all who desire successfully to apply them as sciences. The successful experimental application of these sciences has given us within 10 years a knowledge of the method by which the invading bacteria affect the host, and has likewise developed a principle of wide application as a preventive and cure of certain diseases by the use of antitoxic sera. It has confirmed the principle of preventive inoculation, accidentally discovered by Jenner, and has enabled us to apply the principle in other diseases than smallpox. It has enabled us to know the methods of transmission of certain infectious diseases and to know how to stamp out scourges like yellow fever, the plague, and malaria.

Through the evolution of Listerism, it has enabled the surgeon to invade every region of the animal body, and to save scores of lives formerly doomed to death. The freedom with which the surgeon may now operate has not only saved lives, but indirectly, the knowledge of disease processes so studied during life has taught us many new facts in symptomatology, and has cleared away many fallacies concerning pathologic processes. It has given us many new methods of clinical study, and furnished data from the blood, the spinal fluid, the exudates, the sputa, the sweat, the feces, and urine, which enable us to recognize disease much more readily than before.

Much as has been accomplished by experimental medicine in a comparatively brief period of time, there are vast fields to which the method has not been applied. With most of us, our present methods of clinical observation enable us to do little more than name the disease. In the vast majority of the infectious diseases we are helpless to apply a specific cure. Drugs, with the exception of quinin in malaria, and mercury in syphilis, are valueless as cures. The prevention and cure of most of the infectious diseases is a problem which scientific medicine must solve. What is true of the infectious diseases is also true of the affliction of mankind due to chemical influences within the body. We know but little of diabetes, of the primary blood diseases, or of the various degenerative processes of age and disease. We hopefully look to chemistry to reveal to us the cause of these and other conditions. Experimental medicine must be the means of removing the ignorance which still embraces so many of the maladies which afflict mankind. Not every student, nor every physician, can become an experimenter in applied medicine. Nevertheless, every physician must be so educated that he may intelligently apply the knowledge furnished him by experimental medicine in the cure of such diseases as can be cured. He will no longer juggle with the life of his patient by an attempt to cure with drugs or otherwise, where no help is possible.

METHODS OF MEDICAL EDUCATION.

The phenomenal evolution of medicine has multiplied the subjects of medical study. The character of these sciences requires that they shall be taught by the laboratory method.

The laboratory method, too, has been adopted as the chief method of instruction in anatomy, pharmacology and chemistry, formerly almost wholly taught in medical schools by didactic lectures. The laboratory method, while necessary to the proper and practical instruction of the student, involves an expense which is appalling when compared with the methods of teaching formerly practised in all schools, and still adhered to in many medical schools. The method is expensive, inasmuch as it involves more extensive buildings, much expensive apparatus and an increase of the teaching force. The instruction must be individual or to small groups of laboratory workers, and this involves also an extension of the time of instruction. A physician engaged in private practice cannot possess and retain the general and technical knowledge necessary to enable him to teach one of the fundamental sciences properly nor can he devote an adequate amount of time to it. The teachers of these fundamentals must be investigators in the province of their respective sciences. They must give their whole time to the instruction of students and to original investigation. The thoroughness and accuracy of the training of the special senses, and in experimenting, which a student will receive from such teachers in properly equipped laboratories, will make him keen in intellect and sound in judgment. His desire for knowledge will be stimulated by the atmosphere of his surroundings, and will awaken in him a consciousness that through him and his work the knowledge of the world will be increased and humanity benefited thereby. But teachers of this character must be paid salaries quite as large as the remuneration of professors in the departments of arts, literature and science. The salaries of such professors and of the corps of assistants which the laboratory method implies make the cost of the university or college far beyond the income which could be derived from the tuition of students. I believe it has been estimated that the laboratory method of instruction, now followed by all first-class institutions of learning, costs annually from \$400 to \$500 per student. But great as the cost seems, it must be conceded that the present status of medicine demands the thorough instruction of students in these fundamental studies. It matters not whether his future may be that of a teacher or a practitioner of medicine. In either event he must apply his knowledge of the fundamental sciences to his work, and the result will depend on the thoroughness of his education.

APPLIED MEDICINE AND SURGERY.

To enable the student to utilize the knowledge of a thorough training in anatomy, physiology, chemistry, pharmacology, physiologic and physical chemistry, embryology, neurology and pathology, he should be afforded facilities of equal rank in clinical medicine and surgery. To supply the student with proper clinical facilities involves several important features. Special hospitals, which would be absolutely under the control of the medical school, would be necessary. The hospital should be constructed with a definite idea of teaching students and of making researches into the nature, causes and treatment of disease, as well as to care for a definite number of patients. Hospitals for general medicine, surgery and obstetrics would be essential. Such hospitals, with laboratories and equipped with instruments, apparatus and library, would cost for their building and maintenance a very large sum of money. With such hospitals it would be necessary to choose the professors of medicine, of surgery, and of obstetrics, with competent assistants, of the same type as the teacher of the fundamental sciences. They should give their whole time to the work of teaching and to original research in the hospital. They should be men who have proved their scientific fitness for the important positions, by the contributions they have made to medical knowledge. They should rank with and receive the pay given to professors of important departments in arts, philosophy, and science. When so paid, they would be free to expend all their energy to teaching and to experimental medicine—a career which would enable one to be of the greatest possible service to mankind. No life's work could be fuller or of greater self-satisfaction, and surely none would be more honorable. From these teachers and investigators the student would obtain instruction of the same systematic methods of accurate observation and investigation which were employed

in the fundamental branches.) He would receive thorough conscientious drill in the fundamental methods of examination of patients, and his knowledge of the fundamental sciences would be constantly applied in this work. The trained clinical teachers would direct the student in thorough careful observation in the wards and at the operating table, would collect data to be submitted to experimental tests, and would conscientiously carry out the experiments in the laboratories of the hospital.

The brilliant discoveries which have made our knowledge of the cause and means of transmission of many of the infectious diseases have been chiefly due to the introduction of the experimental method of investigation. Teachers and investigators of the type mentioned will have the opportunity to make equally important discoveries in the broad field of the unknown in medicine. They will train students in the methods of research work and constantly increase the number of investigators in the domain of medicine. And there is need for such men. We may give the great practitioners who have taught clinical medicine their due meed of credit for their excellent, painstaking, unselfish efforts as teachers. They have added to the sum total of our clinical data, have utilized the knowledge of the pathologist and the physiologist in diagnosis, and have tested and judged the worth of therapeutic aids in the treatment of disease. But as teachers they have not made students investigators or experimenters. Not one of the recent great discoveries in medicine has been made by such a man. He has used as clinical material hundreds of cases of pneumonia, rheumatic fever, tuberculosis and chronic diseases by the score; his experience has taught him to recognize these diseases, even when the clinical manifestations are obscure, but he is no more successful than when he began to practise in saving the life of the patient with pneumonia, in preventing endocarditis in rheumatism, in curing tuberculosis, or in checking the advance of a chronic hepatitis. It is time, therefore, that the clinical teacher should have the knowledge necessary to carry on experimental investigation, with hospital facilities for the work, that the profession may become purged of the shame of helplessness in curing so many of the common diseases of mankind.

The patients who will be received in these hospitals will be fortunate. They will receive the most painstaking examination and study, and the experiments made on animals in the laboratory will benefit the patients directly, inasmuch as more rational therapeutic measures will be applied in cases so investigated. In addition to the clinical teachers, who will devote all their time to teaching and research work in the special hospitals, there will be quite as much need for the clinical teacher, who is in private practice, in the general hospitals. Under his direction the student may himself investigate a hospital or ambulatory case, and undertake the care of the patient. His rich and varied experience in hospital and private practice will enable him to round out the student's college education. He will impart to the student a better idea of medicine as a whole. He will coordinate and arrange the isolated facts of clinical and laboratory investigation, and give them their true and relative value. He will teach the student the art of medicine; he will teach him that human sympathy and encouragement of the sick and dying are a part of his duty as a physician.

It would be most practical to make the clinical work of the third year a clinical drill and experimental course, given in the special hospitals, and assign the students of the fourth year to the general hospitals and to the clinical teachers who are in private practice. All the general hospitals and dispensaries controlled by the medical schools could be utilized in the fourth year for this purpose, and afford the student an abundance of clinical material and the benefit of the experience of many clinical teachers. Many of the assistants in the special hospitals of the third year course would doubtless engage ultimately in private practice, and would, because of their scientific attainments, make excellent clinical teachers in the fourth year. A medical school conducted on the high plane advocated must necessarily be under the control of a university. Such a medical school would cost an enormous amount of money, and this can be commanded only by the trustees of a university of the highest order. That the money for the purpose of establish-

ing and maintaining university medical schools with research hospitals and university clinical courses will be forthcoming can not be doubted. The world is awake to the great discoveries recently made in medicine. The wealthy men of this country have had their interest aroused as never before in reference to the possibilities and benefits which medical investigation will give to mankind. They now recognize that they and all posterity will be benefited by every new fact discovered in medicine, and that physicians thoroughly and scientifically trained are necessary to conserve the health of the people.

Three years ago Professor W. W. Keen, in his address as president, deplored the fact that medical schools received relatively little aid in the form of endowments as compared with universities and colleges of philosophy, art and theology. Since that time several millions of dollars have been given for medical education and scientific research. The signs of the times point to a brighter future of medicine in America.

EDUCATION PRELIMINARY TO MEDICAL STUDY.

The subject of the educational requirements for matriculation in medical schools has been discussed at many meetings of this Association in its earlier years, and later by the college associations, by the American Academy of Medicine, and by the various State boards of health.

The requirements were at first lamentably low, and the efforts of the Committee on Education of the American Medical Association and of the college associations had but little effect, because they possessed no legal power to control the schools.

The influence of the various boards of health of several States, notably Illinois, was more marked, inasmuch as these State boards possessed a mandatory power. The colleges were forced to adopt the minimum educational requirements of the State boards of health if their diplomas were to be recognized by the respective State boards.

These moral and legal influences to improve the preliminary requirements were almost nullified by the practice of a majority of the medical schools in admitting students whose educational status was examined into and judged by a committee of the college faculty.

This practice is still followed by a majority of the medical schools and results in the admission of many students who are unable to fulfil the prescribed requirements. As a subterfuge, students are often matriculated conditioned in one or even several subjects. Then the student and the faculty committee forget all about the subject and the student completes his course, goes into practice, and dies with the conditions still undischarged.

The present requirements of the college associations and of the various State medical examining boards and State boards of health amount on the average to a high school education. The curricula and length of course of the high schools of the different States, and even in the same State, differ very substantially. However, if the medical schools now in existence would honestly require as a minimum education the diploma of a high school, without regard to the rank, it would be a marked advance over the present requirements as practised by most schools.

We must admit, too, that there are medical schools of such a low educational grade that they have no right to demand of their matriculates as much even as a common school education. This fact that low-grade medical colleges exist is one of the most satisfactory explanations of the difficulty encountered in elevating the standard of preliminary requirements.

To get at the root of the matter the medical college must be brought up to the proper educational standard, and then, and then only, can be made a proper preliminary educational requirement.

UNIVERSITY MEDICAL COLLEGE.

The present status of medical science requires and demands a university medical college course. By university medical college is meant a medical school which is directly connected with and a part of a university; the university fixing the requirements and controlling the admission of students to the medical department. The method of teaching both the funda-

mental and the clinical branches is on the principles outlined above. To prepare properly for such a course the student should have as a minimum preparation at least two years of study in a good college or university. The requirements to enter a good college or university would insure a sufficient knowledge of the ordinary school branches and also Latin or Greek. During the two years' course in college his time would be well spent in the study of English, French, German, mathematics, history, philosophy, physics, chemistry, general and organic, and qualitative analysis, comparative anatomy and general biology. The amount of time to be devoted to each of these subjects would be the same as that of students of general science, as arranged in all college curricula, with the exception of a much more thorough course in chemistry, biology, physics, and comparative anatomy.

So prepared the medical matriculate would be able to grasp all the intricacies of the subjects of the fundamental branches of medicine. With the addition of the full medical college course as outlined above his education would be equal in culture to that of the graduate in arts and philosophy, at the same time it would be practical and especially fit him for his work as a scientific investigator or practitioner, or for both.

With the medical profession so educated a physician would be, in truth, a member of a learned profession. From an educational point of view he would rank as an equal with the scholar in philosophy, law, and theology. As a man he would be recognized as the greatest benefactor of mankind.

With the establishment of university medical schools the first two years of work in the medical school will consist of courses in pure science. Then, doubtless, all universities will adopt the plan which two or three universities have already put in practice. That is, that the student who completes the first two years of the science course of a university, or at a college of good standing, may enter the sophomore year of the university and take the first two years' work in medicine as the sophomore and senior years of the bachelor's course, when he would receive the degree of S.B. The student who completes the three years of the arts or philosophy course at a university, during which he should take a large amount of work in physics, chemistry and biology, could then enter the medical college, and after two years receive the degree of A.B. or Ph.B. After two years spent in the clinical school he would receive the degree of M.D.

This telescoping of the literary and medical courses affords the advantage of an economy of time, while it does not in any way lessen the value of the result to the student. In the one case the student secures the degrees of S.B. and M.D. after about six years of study, and in the other the degrees of A.B., or Ph.B., and the degree of M.D. at the end of seven years' study.

THE OUTLOOK OF MEDICAL EDUCATION IN THE UNITED STATES.

Medical education must advance to its proper level if it complies with the present status of the medical sciences and the demands which continued evolution in medicine promises.

What does this imply? It means that the private—the proprietary medical school which is conducted for commercial reasons must go. Acknowledge, as we must, the great value which the best of these schools have been to the profession and to the country, all such schools have lived past the time when they can be of value. The continuation of these institutions henceforth will be harmful. They can not command the money to build, equip and maintain the laboratories and hospitals which a proper and adequate medical education demands. In the past their graduates have furnished the many great and influential medical and surgical clinicians of this country. In former days a graduate poorly prepared has been able, by indefatigable labor and postgraduate work, to place himself in the front rank as a clinical physician and surgeon.

Today medical science demands primary instruction to fit a man as an investigator and scientific physician. If not properly educated he can not grasp the great problems which medicine presents today as he did the more simple clinical facts which comprised the art of medicine and surgery a few years ago. In the future medicine must be taught in the large universities of the country and in the State universities which are

situated in or near large cities, where an abundance of clinical material may be commanded.

The State university and the college which desires to teach medicine, and is so situated that it can not command clinical material, should confine itself to teaching the sciences fundamental to medicine. These should be taught as pure sciences, and should be included in the course for the degree of S.B. A college or State university ambitious to teach the medical sciences can do so without great cost. To attempt to teach applied medicine without proper and adequate hospitals, and with an insufficient number of patients would be irrational, nor can they command the necessary funds with which to do it. From such colleges and State universities the students could go to the larger institutions which are able to furnish the proper facilities for teaching applied medicine and surgery.

The general hospitals of many of the cities, now used by proprietary schools, could be utilized as clinical schools for both undergraduate and postgraduate teaching, conducted by the clinical teachers in the existing proprietary schools. Indeed, these hospitals could be utilized as university extension clinical courses. Necessarily they would have to be under the control and direction of a university medical school.

How many schools may be necessary to educate the number of doctors of medicine required annually in the United States? The question one can not answer, but it is safe to say that 2,500 graduates annually will fully supply the demand. This would imply about 10,000 to 12,000 matriculates. A minimum number of 25 and a maximum number of 35 medical schools should offer sufficient facilities to educate 10,000 students. The various State universities and the colleges which offer adequate science courses would educate a great number of students in the fundamental branches, or in the first two years of the medical course.

MEDICAL RECIPROCITY BETWEEN THE STATES OF THE UNION.

The low requirements of some medical colleges, and the want of uniformity in the requirements for a license to practise in the different States, has resulted in a condition which entails much hardship on a physician who desires to remove from one and to engage in practice in another State. The rules of most State boards of medical examination and of health are so stringent that a physician or surgeon of years of experience and of acknowledged skill and education, and the specialist who may be renowned in his field of work, are obliged, like the recent graduate, to take an examination in all of the branches of medicine and surgery in order to secure a license to practise in the State of his adoption.

To correct this evil it has been suggested by a member of the American Medical Association, and concurred in by others, that a national board of medical examiners be organized; that the board hold examinations at different seasons of the year in the various large cities, and that the diploma so obtained shall be recognized as a license to practise in any one or all of the States and Territories. The measure suggested seems to be practical and feasible.

In addition to this plan, it remains to be said that the degree granted by the future university medical school will be undoubtedly recognized as an evidence of fitness to practise in any State in the Union. When we shall have a less number of schools and annual graduates the various States may safely and rationally become more liberal and discriminating in the conduct of their office.

THE INFLUENCE OF THE AMERICAN MEDICAL ASSOCIATION.

The American Medical Association should maintain its interest in the elevation of the standard of medical education, one of the chief reasons of its organization. Its influence in former years was principally moral. This was of considerable value, for the reason chiefly of the high ideals of the founders and first members of the Association, who advocated and fought for a higher standard of medical education. In the future its influence should be many fold that of the past, for with the reorganization of the profession, the better methods of conducting its affairs, the increased and probably very large membership, and its great medical journal, should wield a great influence for good.

As the direct agent by which the American Medical Association may exert its influence in the elevation and control of medical education, the Committee on Medical Colleges and

Medical Education should be made permanent and should be given adequate power and sufficient annual appropriation to make its work effective.

This Association should, therefore, stand for, and should use its whole power to improve medical education in this country. It is said that we never exceed our ideals in practice, and that if we lower our ideals our conduct sinks to a lower level.

The American Medical Association should take as its ideal and standard of medical education the university medical college, with all the name implies in regard to the fundamental medical sciences and to the clinical branches. It should use its influence to drive out of existence those proprietary medical schools which are conducted solely as money making institutions. These measures can not be accomplished at once; but medical science demands it, the profession demand it, the people demand it, and look to the American Medical Association as the chief influence which shall accomplish this end.

SOCIAL CONDITIONS IN AMERICA IN THEIR RELATION TO MEDICAL PROGRESS AND DISEASE.¹

BY

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Another spacious year with its varied channels of energy and activity in medicine has closed. Whilst a faithful chronicle of the facts, data and achievements showing the progress of internal medicine for that brief period would have proved an appropriate topic, I have availed myself of the choice privilege granted by this Association of selecting my theme, and purpose to consider the subject of the relation of American social conditions to the progress of medicine and disease and the import of modern economic and professional tendencies in forecasting the immediate future.

The state of American society, founded on democratic ideals, is one in which the true function of the physician has ever been both intellectually and morally beneficent. It has ever been the fate of the medical profession, however, to have its past outgrown and stifled by the enthraling energy and life of its present and to forget to fix its gaze on what is grand and significant in inherited associations and opportunities. Conversely, the fundamental principle of human development, to wit, that the present is quickly passing under the control of the future, which transcends an enlightened self-interest in the present, is yet to be fully realized and appreciated. In the life of our civilization the physician has constantly found himself in the presence of golden opportunities to render a service to the community, to add his private thought to the public opinion. His high calling and the stage of social development from which he has proceeded have ever invited to the development of an expanding and humane spirit. He has been, however, in many cases too closely chained to his special work. Per contra, the individual member of commanding worth and formidable individuality, like the Spartan and the Greek, has fortunately lent his own spirit to the genius of the great organism—the medical profession—and its higher destiny. That genius is no sluggard, and the motive of action is not the pursuit of gain or of personal aggrandizement, but an incessant advancement of our art and science and an application of the faculties to the higher interests of civilization. What is needed in medicine from the standpoint of sociology at the present day in America is the true "scientific spirit clothed with human interest," to give force and direction to the means available, not only with a view to the application of science to the healing art, but also to enable our profession to find its true place in the body politic and its intrinsic importance as a factor in modern civilization.

While there are certain things and events common to all in our psychic and social development, enlightened society will grant that the larger events in American history, assuming that "the first duty of society is the preservation of life and the comfort of its units," have not been so much dominated by

¹Address in Medicine, delivered at the fifty-fourth annual meeting of the American Medical Association at New Orleans, May 5, 6, 7, and 8, 1903, and published synchronously with the *Journal American Medical Association* by courtesy of the Editor.

legislative authority and social customs as by the march of science, more particularly medical and hygienic. In a country so vast as ours, however, there could be no uniform law covering the details of results in matters medical. These have been in the past and will in the future vary somewhat with the climate, physical conditions, degree of culture and opportunities presented by the widely separated regions. As a consequence, in displaying proportions and the practical results of scattered sections, the final adjustment of their claims only becomes perceptible and appreciable in their broader and higher generalization. The whole range of American historic data and events indicates an imperishable foundation of scientific achievement and furthermore establishes firmly a relationship between medicine and the scientific principles underlying social conditions and phenomena that is both positive and vital. As touching the American medical history of the long past, we can see the major advances and their influence on social laws and the progress of civilization only by grouping data and established facts and applying the process of generalization to these composite phenomena. In this connection it is to be regretted that our possession of unclassified facts is increasing with uncomfortable rapidity. A comparative and historic study of the medical literature of America, taking any of the older countries as a standard of comparison in respect to this method of generalization, can scarcely prove even measurably satisfactory. Much of the history of native medicine is crude and it were impossible to give it either crystallized or concrete form. Epoch-making discoveries and important, far-reaching scientific effort is justly the boast of the American profession. Systematic effort at a rigid classification of facts by the modern statistical method, however, has not been made, and only a partial scientific use of the ever-advancing events for the different historical periods has been attempted.

The concrete, comparative and historic method of study which alone furnishes a proper basis for generalization and serves to point out the relations of medicine to other human activities, would ensure a wholly fresh treatment of the earlier medical annals of America. The physician in his economic or professional dealing has not followed his self-interest in comparison with his measure of enlightenment to an equal extent with men in other lines of human activity, but the fruits of his unselfish labors are, when taken collectively, presented in the form of a heterogeneous mass of details. It should be recollected that it is only the larger events, the accurately grouped facts after the method of generalization to which I have referred, that go to make up the bulk of medical history and medical law. The practical results of the method of simple generalization would show clearly the final utility of medical and sanitary knowledge in the social universe and manifest its relation to everyday life. Obviously in a young republic like ours something must be allowed to propinquity—to nearness to a confusing and disordered mass of facts and phenomena.

It has been well said: "A landscape is beautiful because distance has reduced its chaos of details into order."

Those endeavoring to make a personal study of the medical and sanitary requirements of our insular possessions, more especially under new and changed conditions, can not hope to gain more than a fragmentary knowledge. Much important and accurate information touching the social, climatic and medical conditions and necessities, however, is available through the Division of Insular Affairs in the War Department at Washington. It is clearly incumbent on the organized profession of the United States to undertake studies on a larger scale than that of individual effort. Moreover, the interrelations between tropical medicine and the sciences before alluded to, *i. e.*, social and sanitary, is a question for the immediate future; thus step by step may we hope to erect a stairway that will lead to a new temple of knowledge.

The foundation for social order, education and a fair measure of self-government under military rule having been laid both in Porto Rico and the Philippines, there is presented to the profession of the United States an opportunity amounting to an obligation to carry into those new possessions the light of modern sanitary and medical science. The peoples of those islands are as clearly entitled to the benefits offered to our science and art as they are to those pertaining to their funda-

mental civil and personal rights, as guaranteed by the Constitution of the United States.

From the America that Cortez invaded until the present the most treasured resource of our nation to the physician has, in a peculiar sense, been human life, and in respect to this economic principle we are at present writing merely following in spirit our thoughtful forebears. The medical profession never has valued life in terms employed in denomination nor by its productive power, but rather measured it from a divine and humanitarian standpoint. Certain it is that with advancing civilization there has come a higher and higher appreciation of the value of agencies intended to promote longevity and minimize disease and suffering. And this tendency to preserve human existence, apart from sentimental considerations, is born of a principle long adhered to by the medical profession and continuously unfolding itself in the individual and in organized medical bodies. It is clear, without seeming extravagance of statement, that greater justice is done by the medical profession of America to the condition of society just pointed out than in foreign lands, since it is more thoughtful for the youth and hope of our profession. It is to the flower of that youth, with its new and hidden virtues, that we must look for disclosures in the province assigned to the higher and more complex professional bodies of the future. Modern democratic institutions, including medical schools, are in the ascending scale of civilization, infusing into our profession men who are armed with potent resources from the pedagogic world.

The present-day educational facilities and developments show an ever-increasing beneficent tendency, and the standard of qualification has passed, or is passing, beyond the stage in which there is a mere desire to acquire an elemental knowledge of disease and its treatment in this country; a new character and a new vital and moral force is happily presuming to show itself in public action for the benefit of mankind. This genius stands ready to kindle its fires and materially aid in offering the means of human welfare and the revelation of new truths.

An appreciation of this fact by professional bodies is necessary in respect of the future; for medical societies organized to obtain the highest potency must compete successfully with other societies or they will vanish from view in the stress of social and scientific evolution.

But though the obscure rival of the Goddess of Minerva, who had broken the loom of Arachne in her jealousy, executed wonderful tasks by her unaided strength, in the process of progress toward higher efficiency the individual ceases to be a factor of first importance. The process of development, whether considered in its economic, political or purely professional relations, demands the subordination of the interests of the individual to the larger interest of the organic whole. The dominant and controlling feature underlying an infinite variety and complexity of details of that upward movement of professional and social evolution is compatible with a remarkable simplicity of governing principle. Our plain duty is accordingly to endeavor to understand the nature of that governing principle which is distinctive and characteristic in that it does not regard the interest of existing members as supreme, but is seeking to establish conditions which are favorable to the interests of a larger future.

As regards the question of the relation of medical work and progress to our social system, the time is probably ripe for a revision of certain elemental and fundamental principles and customs, although it is obvious that neither social agencies nor the general public manifest a proper comprehension of its necessity. Whilst science is telling us about the pathologic intricacies of disease processes, their bacteriologic causation and cure with unparalleled rapidity, important social and economic questions that affect especially the comfort and health of our teeming town-bred populations are subordinated. Again in a land of popular civil government the medical profession should be organized in a manner that would render it equal to enlarged duties which naturally should devolve on it. I refer to such matters as the control and regulation of asylums for the insane, municipal health boards and the municipal hospitals for the sick poor, for contagious diseases and the like.

Certain tendencies of modern American life, considered with reference to the welfare both of the medical profession and

general public, offer a most promising field for investigation and progress. The temptations of the practical, over-strenuous life of the present and past generations have left their impress on our profession. Something, however, must be ascribed to our nervous climate, reinforced by certain elements of the American spirit-aggressiveness and an unconcealed idealism. Neither should the power of the initiative of the American, his shrewdness and his energy be overlooked. It may be doubted, however, whether there have been accomplished achievements and results commensurate with the impetuosity that characterizes all paths of professional activity. The universal spirit of haste has taken possession of our professional life; it permeates the air of the age, and the principal cause of this state of affairs is to be found in our ardent everyday ways of living, and its cure must result from a readjustment of the home life and habits of the professional and other classes. It means a return from our present day restlessness and rush to a quieter period, to a "Mansfield Park," with its charm of quiet village life; a return to a normal life, with natural intellectual tastes, and to calm, patient, original observation that fosters vital force and successful endeavor.

If authors and investigators were to bring forward only definitive and well-weighed pronouncements on all points at issue, it would carry us from the surface to the heart of things, and our labors would be more strongly marked by originality and power.

The spirit of undue haste which characterizes our national life is nowhere better exemplified than in American medical literature, despite its many virtues, its broad liberal spirit and freshness. Never in American history, whether deliberately or unconsciously, has so much current literature been placed at the disposal of physicians. Too generally medical thought and opinion, which is not of necessity medical truth, finds literary expression. The obvious weakness of it all is an enforced tendency to waste one's time in reading matter which is unapproved by common opinion. Extending this thought, it may be questioned whether to carry views and ideas beyond the domain of existing knowledge does not hinder rather than facilitate progress.

There is a list of honor among American writers, and it embraces authors whose literary product shows not only a sharp scrutiny of facts, but also the highest and most characteristic utterances in medicine. Indeed, the worth and power of American medical literature, either in its content or method, scarcely receives an unprejudiced estimate abroad.

In the field of letters we point with inordinate pride to the late Dr. Oliver Wendell Holmes, and our contemporary, Dr. S. Weir Mitchell. Fiction by medical authors lives and will live in America.

It may be questioned whether American nationalism, as evidenced by the creation of a native literature, should be the principal aim, although the consistent use of American material is to be advised and encouraged. We need to retain the conservative European spirit and keep wide ajar the door that leads to the treasures of continental literary traditions. Foreign peoples are and have been immigrating by the hundreds of thousands yearly; they have penetrated into the remotest points of this country, carrying effective training with them in many instances. Hence, admitting that the prescience of genius is the possession of many, there are fewer distinctly American medical authors than at first blush would appear.

"The Celt is in his heart and hand,
The Gaul is in his brain and nerve;
Where, cosmopolitanly planned,
He guards the Redskin's dry reserve."

Acknowledgment is due the great value and significance of the unparalleled heritage handed down by the older nations, particularly England, Germany, and France. The path of fame for a nation no less than for an individual lies in the direction of constructive effort and sensitive receptiveness of the impressions and tendencies of the age irrespective of territorial limitations, and of a keen sympathy and close touch with the movements of the times in all lands.

Our literature is not an indigenous growth, yet stern of purpose; it is not, and, let us hope, never will be, sluggish in turning to foreign sources. It has, however, developed certain

characteristic features, a distinct national flavor and a perfume "as plainly native as the arbutus."

American industry, with its attendant wealth and power, and the enlarged opportunities it offers to all classes of society for successful business enterprise, has quite generally proved attractive to and often filled with fervent hope the American physician, and with increasing means he has found his social position to improve.

In America the achievement of considerable financial success, however, is possible without taking high ground in a professional or ideal sense. The medical profession is integral in the effects of our economic evolution; it obtains stray glimpses of the avenue of glittering gold; but its central effort, if it desires to remain true to human perspective, contemplates a systematic development of its pecuniary, mental, moral, and social powers.

The tendency to gregariousness in American cities is in no specific direction more evident than in the medical profession; hence, success is and will continue to be an increasing difficult problem, a circumstance to be reckoned with, no matter what our meaning and ideals as a national profession. This portends in its last analysis the necessity of better training and equipment for everyday duties of the practitioner.

America stands in need of further reform in medical education and the immediate establishment of one authority—one licensing body; and self-created schools must place themselves in a position in which they can worthily assist in the execution of a scheme of higher national medical education. Professional ascendancy in future will demand the creation of a homogeneous and adequate standard of qualification for entrance into medical schools.

The relation of social conditions to disease is a topic that is becoming more and more insistent with the reflections that are the natural accompaniment of advancing knowledge.

A backward look reveals an embryo nation steeped in an arduous task, the subjugation of a continent, at the expense of unceasing physical toil. This necessitated an open-air existence, which resulted in a vigorous, hardy race. Then followed the integration of frontier villages, of larger and smaller towns, and life meanwhile became brighter and more piquant. For long generations the abandonment of rural life, the changed habits of living, the enforced pursuit of new and less healthful callings, too often from motives of personal comfort and even social expediency, and the universal tendency to overcrowding in town populations, resulted in a modification of the character and incidence of all leading diseases. It goes without saying that respecting the effects of our social conditions and climate on disease, the particular standpoint of our fathers was radically different from that of their children. Floyd M. Crandall has recently directed forcible attention to the fact "that never have such radical changes been witnessed in the habits of life and in human diseases as those in this country during the last half century."

Fortunately, agencies are at work looking to the socialization of the American agriculturist and the amelioration of the ills due to overcrowding in large municipalities. This is a movement which in the entirety of its scope embraces numerous potent forces whose federation promises to effect in time rural social regeneration. An organized effort has in several States been already initiated, and in the conferences held and in contemplation looking to the betterment of rural life, the cooperation of the medical profession is invited. Modern agencies, as improved highways, the introduction of the telephone, trolley lines, rural mail delivery, are socializers no less than economic facilities. In addition to these physical influences, marked improvement also comes from increased educational opportunities, farm organization and the various functions of the Church.

These socializing influences and forces tend to counteract the current of bygone days from the farm to the city; they likewise bid fair to become a factor of first importance in minimizing, if not actually counteracting in due season, the ill effects of over-dense urban populations. It may, however, be remarked that the impoverished classes, especially the great immigrant contingent, will be far less likely to return to a rural environment than the well-to-do, and yet it will shortly affect the social

and economic conditions as well as the vital statistics of the wage-earning classes. We may confidently expect a greater physical efficiency, a higher bodily standard, though municipal sanitation will be always required, and remain the principal factor in strengthening the powers of resistance to hostile environment. One point of common agreement is that as a result of the rapid advances in sanitation and improved methods of treatment, there has been a notable decrease in prevalence and fatality of most infective diseases, particularly those more or less fostered by overcrowding (*e. g.*, tuberculosis, diphtheria, diarrheal diseases, etc.). Three well-defined classes, however, have according to the census for the decade ending May 30, 1900, distinctly increased; they are cancer, affections of the kidneys, and the degenerations, fatty and fibroid. Thus during an increase in the population of 50% in the United States myocardial degenerations have increased 150%, and certain types of chronic nephritis have also risen in frequency to nearly 200%. The determination of the causes of this rapidly increasing frequency of these morbid states is clearly the task of the medical profession.

Respecting the degenerations—myocarditis, arteriosclerotic changes and kidney diseases—Crandall says: "The power of alcohol in the form of malt liquors to produce degenerate changes is so well known to pathologists that the conclusion is irresistible that the radical increase in these diseases comes largely from changed drinking habits."

The notable increase in these morbid conditions, however, is not due to a single cause, and substantial progress can not result from too much emphasis on any one agency whose undoubted potency remains undemonstrated.

It is probable that a more universal application of refined methods of diagnosis accounts in a measure at least for the apparent disparity in the number of cases of nephritis and myocardial degeneration in recent times as compared with the showing of older statistics.

The census between 1890 and 1900 indicates an increasing prevalence of two additional diseases, in respect to both of which progress in our knowledge has been slow and never encouraging. I refer to diabetes mellitus and lobar pneumonia. The census previously referred to indicates that chronic diabetes mellitus has nearly doubled in point of frequency in a single decade.

Whilst we shall continue to look to the bacteriologic laboratory for the discovery of the definitive cause of this metabolic ailment, and to the pathologist for a mind's-eye picture of the morbid state of the tissues, the data obtainable from an investigation of the manner and habits of life, which exert more or less etiologic influence, are of intrinsic medical importance and would serve as accessory factors in diagnosis as well as straws for the application of measures for treatment.

Although impossible to recognize a boundary line between the "variables of health" and disease in chronic diabetes mellitus, it can not be doubted that abnormalities of the glycolytic functions of the liver and pancreas, associated with inappreciable structural changes (more especially in the cells forming the islands of Langerhans) which interfere with proteid metabolism and the metabolic disturbances, are dependent in large measure on the overuse of the mind, intemperance and irregular habits of body; in a word, on improper modes of living.

Physiology has contributed much to the intricate processes involved in the nutritional diseases. Morbid physiology (general pathology) is most intimately bound up with the modes and predilections of American life, particularly of the so-called privileged classes.

Diseases and conditions that are successfully treated by a correction of the mode of life are apt to be regarded as functional in nature, when in reality definite although undiscoverable structural lesions already exist, the foundation of an insidious and progressive disease already laid.

Now it is conceivable that a broader application of data as yielded by vital statistics would render more clearly recognizable the terrible significance of an enlightened public, living in idle acquiescence to positively injurious prevailing customs. A federation of forces, however, in connection with the investigation of special diseases even, is necessary to make this branch of inquiry productive of really important information; for

example, the cooperation of committees on vital statistics with the creation of centers under the auspices of a national organization, such as the American Medical Association, would prove effective. I would instance lobar pneumonia, which, as before stated, is increasing in prevalence, as a disease in which the light of future investigation after this method of research would prove preliminary to important discoveries and decisions. Indeed, the local diversity in social conditions and climate in different sections which are far separated by geographic distances in this country renders such a procedure an absolute necessity. The statistical data gathered by individuals, notably those of E. F. Wells, are of real value, and one point approximately settled is that the deathrate by decades during 80 years is practically unaltered—"certainly not decreasing." The census for the decade between 1890 and 1900 shows an increased prevalence of this disease from 186 to 191 per 100,000.

A marked numerical increase in the number of cases of pneumonia has taken place since the advent of epidemic influenza,¹ but this does not account for the slowly rising incidence of the disease during previous non-epidemic seasons. Other reasons have been given for the augmenting prevalence of pneumonia: increased facilities for travel and the tendency for people to congregate (Wells), the highly infectious character of the disease and the neglect of prophylactic measures in crowded centers (Walsh). Among accessory causes of the increased prevalence of pneumonia may be mentioned a change in the prevailing meteorologic conditions. As shown elsewhere the wanton destruction of the native forests has been attended with an exaggeration in the range of variability of such meteorologic conditions as temperature and humidity. It has been long known and universally recognized that this disease bears a vital relation to the seasons, and that the greatest morbidity coincides with the most pronounced climatic changes. It is probable that the increased incidence of the disease will be shown to be dependent in part on augmenting prevalence of visceral degenerations, particularly of the cardiovascular system and the kidneys. Be it remembered that in a large measure these are the direct or indirect result of an era characterized by undue devotion to business, social excesses and club life, with its attendant unseemly hours and unconcealed conviviality. It must be confessed that the extent to which lobar pneumonia is dependent on these degenerations acting as predisposing factors is imperfectly known, but it cannot be doubted that a conservative attitude toward the question accords to them a prominent position among the agencies unfavorably affecting the prognosis.

I have made a study of all necropsied cases of lobar pneumonia at the Philadelphia Hospital for a period of six years, from January 1, 1896, to March 1, 1903.² Out of a total of 275 cases 250, or about 90.9%, showed cardiovascular lesions, principally chronic endocarditis and general atheroma of the vessels. A small number of the cases, 14, or 5%, showed acute plastic pericarditis, and 11, or 4%, chronic pericarditis. Renal lesions were recognized in 90.5% of the totality of cases. Chronic interstitial nephritis was noted in 145, or 52.7%; chronic parenchymatous nephritis in 50, or 18%, and acute nephritis in 38, or 13.8%. Among the remaining 25 cases was one of renal calculus, another of renal tuberculosis, and in many of the remainder subacute nephritis was noted.

These figures afford strong presumptive evidence that renal and cardiovascular degeneration rank as potent predisposing conditions, and clear and convincing proof that they bear a close and vital relation to the high mortality rate of lobar pneumonia. It should be stated that the patients admitted into the Philadelphia Hospital belong to the pauper element of society, and the subjects are principally adults.

The reports of the health departments of leading cities, in particular that of New York, furnish valuable data from which important tentative influences may be drawn, but sure ground can result only from research work of a broader character than has yet been undertaken in this country. From the record of vital statistics of Philadelphia and New York I have compiled two tables (*vide infra* Tables Nos. 1 and 2), which show that pneumonia is more or less limited to centers, and these correspond in the main to the most densely populated areas, with their allied conditions of squalor and poverty.

Pneumonia, like other acute infections that prevail epidemically, shows a wave-like character, on comparing different years for the same locality. Exclusive of epidemic outbreaks there is an evident tendency to a preponderating incidence in

TABLE 1.

Wards.	Area in acres.	Population U. S. census of 1900.	Population per acre.	Percentage of deaths from pneumonia.			
				1899	1900	1901	1902
First.....	154	9,516	62	11.2	11.8	10.9	12.1
Second.....	81	1,483	18	2.9	9.1	11.5	7.1
Third.....	95	1,797	19	10.3	9.6	12.9	10.5
Fourth.....	83	19,554	222	20.4	22.8	18.0	20.1
Fifth.....	168	8,298	49	12.1	15.3	15.5	12.6
Sixth.....	86	20,004	266	18.8	18.0	15.8	20.4
Seventh.....	198	89,237	451	16.9	17.5	16.0	17.1
Eighth.....	183	29,059	159	15.4	16.9	15.0	19.0
Ninth.....	322	59,650	185	13.1	15.3	13.4	12.9
Tenth.....	110	71,879	638	18.1	15.8	15.5	16.9
Eleventh.....	196	99,144	448	18.2	18.4	17.4	18.0
Twelfth.....	5,504	476,602	86	12.8	15.2	12.7	14.4
Thirteenth.....	107	64,117	550	21.6	20.7	18.3	21.3
Fourteenth.....	96	34,035	332	18.2	23.7	22.4	20.1
Fifteenth.....	198	24,066	122	14.1	12.4	14.0	18.6
Sixteenth.....	349	52,808	123	12.1	13.2	11.1	12.3
Seventeenth.....	331	130,796	395	13.8	17.3	13.7	17.2
Eighteenth.....	450	61,825	163	11.2	13.2	10.8	12.2
Nineteenth.....	1,481	257,448	174	12.0	16.7	14.4	11.4
Twentieth.....	444	89,798	202	13.7	13.0	12.3	11.9
Twenty-first.....	411	60,211	147	12.9	16.4	12.9	13.6
Twenty-second.....	1,529	189,261	124	13.7	14.5	12.0	12.8
Average percentage.....				13.9	16.0	13.8	14.4

overcrowded districts and among the impoverished classes. Thus the average mortality rate for four years in New York (vide Table 1), taking the eight wards which are most densely populated, from the tabular list is 18%.

TABLE 2.

Ward.	Area in acres.	Population for 1900.	Population per acre.	Percentage of deaths from pneumonia.		
				1899.	1900	1901.
First.....	448.0	37,919	85.0	8.92	12.93	10.16
Second.....	282.8	35,206	128.0	14.10	17.75	14.52
Third.....	122.2	21,693	202.0	14.46	17.93	17.80
Fourth.....	146.6	22,562	154.0	11.37	16.69	18.09
Fifth.....	215.4	16,868	78.0	10.46	11.81	11.96
Sixth.....	215.4	8,042	37.0	9.86	19.57	13.12
Seventh.....	281.0	28,137	100.0	13.10	13.92	13.05
Eighth.....	278.4	15,757	55.0	10.21	17.5	9.65
Ninth.....	256.0	6,953	27.0	6.21	11.90	8.64
Tenth.....	229.8	19,967	86.0	8.47	10.84	12.29
Eleventh.....	134.4	11,843	88.0	13.89	10.46	8.00
Twelfth.....	113.5	13,850	122.0	7.79	10.75	7.42
Thirteenth.....	165.8	17,427	105.0	6.61	15.69	7.75
Fourteenth.....	151.7	19,405	121.0	7.51	10.81	8.04
Fifteenth.....	771.4	50,379	65.0	12.59	12.73	10.14
Sixteenth.....	179.8	15,788	88.0	7.82	8.74	11.29
Seventeenth.....	160.6	17,908	111.0	9.80	10.09	12.09
Eighteenth.....	416.0	29,643	71.0	10.29	11.18	9.56
Nineteenth.....	446.7	55,246	121.0	10.63	11.65	9.46
Twentieth.....	469.8	43,276	92.0	8.33	11.15	11.79
Twenty-first.....	4,562.6	32,168	6.0	10.23	13.71	10.96
Twenty-second.....	12,738.6	64,832	4.0	8.97	12.39	10.76
Twenty-third.....	2,051.2	26,109	12.0	10.39	8.86	9.50
Twenty-fourth.....	2,656.0	53,023	20.0	7.37	8.70	10.93
Twenty-fifth.....	2,610.6	51,723	20.0	12.53	12.97	11.56
Twenty-sixth.....	896.0	45,615	51.0	10.63	12.96	10.45
Twenty-seventh.....	2,308.2	28,004	12.0	*	*	*
Twenty-eighth.....	655.4	43,931	67.0	8.10	7.82	10.33
Twenty-ninth.....	89.6	60,096	67.0	13.49	11.11	9.71
Thirtieth.....	392.2	28,874	87.0	9.32	12.79	10.86
Thirty-first.....	456.3	33,139	73.0	10.07	11.61	10.90
Thirty-second.....	517.8	39,889	77.0	9.76	9.47	9.11
Thirty-third.....	2,844.2	65,372	23.0	10.27	12.56	11.64
Thirty-fourth.....	3,568.0	43,706	12.0	10.63	12.46	9.01
Thirty-fifth.....	21,287.0	8,614	0.4	7.25	9.36	10.37
Thirty-sixth.....	3,891.8	46,811	12.0	10.28	13.43	11.93
Thirty-seventh.....	332.8	22,445	67.0	12.89	11.03	13.12
Thirty-eighth.....	255.4	34,104	128.0	9.21	9.29	9.47
Thirty-ninth.....	3,077.8	40,377	13.0	10.59	11.75	11.87
Fortieth.....	5,177.0	19,438	4.0	6.68	9.42	10.09
Forty-first.....	400.0	11,328	28.0	.....	7.69	4.57

*Population and deaths occurring in almshouse (Twenty-seventh Ward) do not appear in this table. Deaths in almshouse, 1,637. Forty-one (41) percent of deaths from pneumonia occurred after the age of 40 years.

The Fourth, Sixth, Seventh, Tenth, Eleventh, Thirteenth, Fourteenth, and Seventeenth wards of New York City were embraced in this estimation. In contrast with the figures just given, eight wards, representing the most sparsely settled por-

tions of the city of New York (e. g., First, Fifth, Eighth, Ninth, Fifteenth, Sixteenth, Eighteenth, and Nineteenth) gave for the same period of four years an average mortality of 14.3%.³ It was observed in the compilation of these mortality statistics that an elimination of the epidemic periods would make the differences in percentage dependent on the population somewhat greater.

In arranging the statistics for Philadelphia I have included only those wards in which the inhabitants were equally distributed throughout the entire ward. Per contra, wards having large area and a low population per acre, but this population, located in certain sections of the ward only, have not been included. Thus the following wards became available for the purpose of contrasting those giving the highest with others showing the lowest mortality: First, Second, Third, Fourth, Fifth, Sixth, Seventh, Ninth, Tenth, Eleventh, Twelfth, Thirteenth, Fourteenth, Fifteenth, Sixteenth, Seventeenth, Eighteenth, Nineteenth, Twentieth, Twenty-eighth, Twenty-ninth, Thirtieth, Thirty-first, Thirty-second, and Thirty-seventh.⁴ The Eighth ward was not included on account of being inhabited principally by a better-to-do class and on account of containing the Pennsylvania Hospital, the former condition lessening the liability of pneumonia, while the latter institution named would tend to increase the mortality from this disease since many of its patients come from the Third, Fourth, Fifth, and Sixth wards.

The portion of the city west of the Schuylkill river was excluded from this computation for reasons similar to those just mentioned.

Out of 25 wards included in our figures I have estimated a percentage of deaths from those showing the most dense population per acre, allowing for the location of hospitals, homes, etc. (e. g., Second, Third, Fourth, Seventh, Thirteenth, Seventeenth, and Nineteenth wards), and I find the percentage of deaths from pneumonia to be 12.8%. Those wards showing less dense population, the First, Ninth, Tenth, Sixteenth, Twenty-eighth, and Thirty-second, gave an average of 9.5%.

The Second, Third, and Fourth wards were occupied largely by foreigners (Italians, Russians) and showed the highest percentage of deaths from pneumonia, while the Seventh ward, which contains a large colored population, also shows a very high deathrate.⁵

As shown by MacDougall's statistics, unfavorable occupational conditions probably have less effect in causing pneumonia than pulmonary tuberculosis. In my own investigations it was observed that divisions of Philadelphia having an industrial population modestly though comfortably housed furnished a deathrate but little in excess of that of the sections inhabited by the well-to-do. The whole subject of occupational diseases, eminently important to the medical world, is closely united with the social and economic conditions of the wage-earning classes, but its consideration here would lead me too far a-field.

REFERENCES.

- ¹ Phila. Hospital Reports, Vol. xiv, p. 57, 1896, by the writer.
- ² For permission to examine and employ the records of this hospital the writer is indebted to Dr. J. V. Shoemaker, president of the Board of Charities and Corrections.
- ³ The writer desires to acknowledge, with thanks, the kind aid of Dr. William H. Guilfoxy, registrar Department of Health, New York, in furnishing data for the above table.
- ⁴ The following wards have not been included in the estimation of the lowest percentages for the following reasons: The Twelfth ward, while it shows a low population per acre (86), has a number of hospitals and homes which contribute largely toward its high deathrate from pneumonia. The Second and Third wards show a population of 18 and 19 per acre; there are but few children under 5 years and few aged persons living in these wards and this lessens the mortality from pneumonia. The Twenty-first and Twenty-second wards because they are occupied mostly by the well-to-do classes. The Fifteenth, while it has been included in my calculation, contains a large colored, Italian, and French population.
- ⁵ My acknowledgments are here due to Dr. L. Napoleon Boston for assistance rendered in connection with the statistics gathered in Philadelphia.

Jefferson College Library.—Four years ago Jefferson Medical College undertook the establishment of a reference library for its students, and through the efforts of its Women's Auxiliary Board some 3,500 books have been collected. The library is managed and supported by the Women's Board, and is constantly increasing in value and effectiveness by the purchase of new books and gifts from friends interested in the college. The last monthly report shows how much it is appreciated by the students, as there were 1,276 calls for books, the largest number in one day being 86. The average daily loan is 53 and is steadily increasing.

CANCER AND IMMUNITY.¹

BY

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On such occasions as this we take great pleasure in recalling the past, and dwell with great delight on the achievements along the lines that have most engaged our attention. We, as surgeons, especially those whose professional activity began in the preantiseptic period, review the successive changes from that period of expectancy to the present period of aseptic accuracy with the greatest satisfaction. No one can fully appreciate the present status of surgery who is not personally familiar with the period when wound complications were the rule, and when faith was pinned on the belief in "laudable pus."

However great the change has been in surgical mortality, in the great improvement in wound repair and in the comparative freedom from wound complications at present, when we consider the number of diseases treated surgically we must confess that many problems remain unsolved. We are not prepared to say, even now, as Boyer did in his great work, "Traité des Maladies Chirurgicales" (1814-1822), that he believed that surgery had reached perfection. The great advances of the past have taught us the imperfections of the present, and have pointed out to us the lines of research for the future.

At the outset, we are not unconscious of the fact that the profession itself is not yet agreed on many well-founded propositions. Many still cling with too much tenacity to old and deeply-rooted doctrines. Progress has been so rapid. The surgeon has, perhaps, been in advance of the physician along scientific and practical lines. The physician has observed that the surgeon has gradually invaded his field, thus creating some antagonism, but it has become less apparent and more cooperation has been the rule since bedside observation and a clearer pathology have demonstrated the actual conditions.

In this connection, we are convinced that there is still too much difference of opinion between the physician and the surgeon regarding the so-called borderland cases. In that class of affections which primarily are so-called medical, and later may become surgical, in which the early stages are obscure, where no positive diagnosis can be made, where there is no improvement from the usual internal treatment, these constitute a class where an exploratory incision would not only make a diagnosis clear, but would frequently lead to a cure.

Still, too much time is wasted in the medicinal treatment of such affections as goiter, tuberculous lymph nodes, pulmonary abscesses and gangrene, empyema, abscesses, and tumors of the liver, obstruction of the biliary passages, diseases of the pancreas and tuberculous peritonitis. Chronic Bright's disease and ascites due to hepatic affections, always believed to be purely medical, have recently received the attention of surgeons and the success has been sufficient to give much encouragement. The foregoing constitute a class of borderland cases in which it is often impossible to state where medical management ends and where surgical treatment begins.

Surgical advancement in the future will not consist so much in the radical changes in operative technic as in improvement in diagnosis and diagnostic aids. Many of our diagnostic formulas are even now undergoing complete changes, and the future will lead us to a precision in the recognition of disease that we little dream of now. The early recognition of malignant disease is a problem of future development, especially malignancy affecting the internal organs. With our present aids it is impossible to recognize internal cancers sufficiently early to do a radical operation. Our only course at the present is an exploratory incision as soon as reasonable grounds for malignancy exist.

The field that seems full of promise and gives us hopes for great expectations in the future is that of immunity and immunization. It now seems that many tissue changes will be solved along these lines.

¹Oration in Surgery, delivered at the fifty-fourth annual meeting of the American Medical Association, held at New Orleans, May 5 to 8, 1904, and published synchronously with *Journal American Medical Association* by courtesy of the Editor.

From our present viewpoint the question of immunity seems to tower above and overshadow all others. It involves the greatest problems for the future investigator to solve. Out of these researches will be evolved methods for the exact treatment of that great list of surgical affections which, at present, we can fortunately, to a great measure, avoid by exact asepsis and can control, to a great extent, by antiseptic measures when once developed. But we still stand helpless in the presence of severe forms of septicemia, pyemia, tetanus, and other toxic invasions. Infections sometimes occur after the most carefully executed operative procedures. Accidental infections will always comprise a large proportion of our surgical material, a group of cases that furnishes a fatality all too great.

Our present helplessness in the presence of extreme toxemia, we must confess, lies in our imperfect knowledge of the exact conditions under which the toxins operate. We may say, in a general way, that toxic bodies attack and destroy cellular elements. When, however, we study this question of infection in a more serious manner, we find that a flood of light has been thrown on this problem by Ehrlich and his followers.

The two greatest problems of the future, cancer and immunity, shall engage our attention today. Malignant disease seems to be on the increase. We stand so helpless in its presence when fully developed that we exert our feeble energies and grasp eagerly for any fact that seems to offer new light for its better understanding. It will be our effort at this time to, as briefly as possible, review the more important facts known regarding the etiology of cancer, and then, after making clear to ourselves the revelations thus far made in the recent studies of immunity, determine, if possible, what relations, if any, exist between the two.

These considerations were prompted by personal observations made in a number of cases of undoubted malignancy that indicated the probable infectiousness of cancer. It is well known to us all that the infectiousness of most infectious diseases was first determined clinically and that the clinical observations were later determined and confirmed microscopically and experimentally. The cases to be here related came under the author's personal care, and it is hoped that they may serve as contributory evidence to the observations already recorded by others that *malignant disease, under certain conditions, is infectious*.

CASE I.—Mrs. H., age 40, of spare build, very small amount of adipose tissue, presented in the outer and upper quadrant of the left breast a hard, nodular, painful, movable, walnut-sized growth, of one year's duration. In the axilla could be felt a hazelnut-sized nodule. She had frequent lancinating, radiating pains in the breast. There were no evidences of acute or sub-acute inflammatory signs, no local redness or elevation of temperature. The clinical diagnosis of cancer of the breast was made and a radical operation was advised. Various family matters prevented her from submitting to an immediate operation, so that several months passed, after which it was observed that the neoplasm had diminished in size and it finally disappeared.

It may be urged that this may not have been a cancer or that no one should make a diagnosis unless there be a confirmation by the microscope. Is the microscope always certain? We have all observed cases that ran a clinical course of malignancy after the microscopic findings indicated benignancy, and *vice versa*. The pathologist always inquires after the clinical features. He is disinclined to give an opinion unless he can know something of the history and symptomatology. The above case, in every detail, resembled many others that were demonstrated microscopically to be malignant, consequently it would appear that we were justified in the clinical diagnosis of cancer.

CASE II.—Mrs. J., age 35, presented herself with an inoperable, extensively ulcerating carcinoma, involving the outer half of the right breast. The breast was unusually large. The outer portion of the ulcerating surface had been in constant contact with the upper and inner side of the arm. Portions from both breast and arm were removed for microscopic examination and proved to be alveolar carcinoma. No operation. She died in three months.

CASE III.—Mrs. D., age 35. She came under observation with a typical epithelioma of the cervix uteri. The vagina was large and relaxed, so that the neoplasm rested in contact with the lower portion of the posterior vaginal wall. Hysterectomy was recommended but was refused. She presented herself

again in two months, in which time there had developed an epithelioma at the point of contact between the cervical growth and the posterior vaginal wall. An operation was done, but the patient died from recurrence eight months later.

CASE IV.—Mrs. G., age 45. Came under observation with a typical cauliflower growth involving the cervix uteri. Small particles were removed, which proved, microscopically, to be carcinoma. The uterus was fixed, the growth appearing to be too extensive for operative interference. No operation was advised. After several months the neoplasm became smaller and gradually disappeared, the uterus becoming movable. At the present time, eight years later, she appears well.

Here we have four cases of undoubted cancer, each one of which presented some of the features of an infection, as in lupus or syphilis. Cancer is extremely slow in its development, its premalignant stage often lasting many years. This fact possibly may account for the negative outcome of inoculative experiments hitherto conducted. This long developmental stage is not unlike lupus, leprosy and other forms of undoubted infection. In two of our cases we observed secondary growths which appeared at points where the primary neoplasm was brought, more or less continuously, in contact with previously healthy surfaces, a very common occurrence in nearly all forms of infection. In two of our cases the neoplasm disappeared spontaneously, the disappearance depending, no doubt, on some form of katabolism not yet understood. The elucidation of this form of cytomorphosis will give the key to the control, inhibition and elimination of the atypical cell proliferation which constitutes malignancy.

The term cancer, so commonly employed, refers to growths made up chiefly of epithelial cells. There is really no good reason why the term cancer should be limited to epithelial growths. Cancer signifies "crab." It was originally used to signify malignancy and meant connective tissue growths as well as those of epithelial origin. For our purpose at this time we will limit the term cancer to epithelial neoplasms and we will confine these considerations to its etiologic factors.

The mystery of its origin seems as deep almost as in the days when cellular pathology was unknown. No problem in pathology has received more thought and speculation, no subject has had bestowed on it more earnest effort and unremitting toil. Regarding its etiologic evidence we must confess that we have only a mass of negative proof. When observers believed that they had found the specific organisms, scores of workers in the same field soon demonstrated their error. So, today, we can only say that the evidence which shows what we do not know of the cause of cancer is voluminous, and we must admit that we know little of its etiology.

We know something of its cell characteristics. We know that malignant disease is essentially a cell proliferation that has biologically many features that are opposed to the physiological tissues in which they take their origin. We find an atypical life history in the cancer cells. The nucleus divides in an asymmetrical way. We note that unusual karyokinetic figures in the nucleus are usual in newgrowths, pointing to changes in the cellular life history. Regarding carcinoma, certain bodies have been demonstrated, believed by some to be parasites, having some causal relation to the cell changes.

It is a well-established fact that the nucleus perpetuates the nature and function of the cell, and any change in the nucleus changes the cell in its function and process of division. According to W. V. Shaw, "the growth of cancer cells is then to be looked on as an effort of reproduction in damaged tissue, the incidence of the damage falling on the nuclear structures."¹

This statement is based on observations made by him in connection with experiments on free swimming larvae which developed from the stimulation of ova of certain lowly organized animals, causing a proliferation of cells. The ova had not been fertilized by spermatozoa. Adult organisms were not developed, but larvae capable of independent life. These results were obtained by stimulating the ova with strychnia and by mechanical movements of the ova. This cell-growth was compared to growth of tissue in partially damaged structures. Shaw believes that such damage alters the nature of these cell structures so that the vegetative functions of the cell run riot and the cells become parasitic toward the organism in which the growth is taking place. This view seems to find

support in those connective tissue growths that develop in tissues that have sustained a trauma and in which the sarcoma develops; or in epithelial growths that form on surfaces that have been subject to prolonged irritation, as exemplified by the chimney-sweep's and paraffin-worker's cancer forming on an old chronic dermatitis; or in cancer forming on the site of a prolonged irritation by the smoker's pipestem on the lower lip. We have seen many times that cancer develops in epithelial tissue that has been subjected to irritation for a long time, usually extending over a period of years. We have long recognized irritation to be at least one of the causative factors. Just what metabolic disturbances take place and what the underlying causes are is not yet clear. That cancer is infectious has been proved by many clinical observations. This has been shown by Eberth, who collected 22 cases where cancer was transmitted from lip to lip, tongue and palate. Behla reported eight instances of death from malignant growths in physicians and surgeons who were inoculated from tumors and four instances of apparent human infection from cancerous animals, dog and hen. He also alludes to a cancer epidemic among the white mice in the Pathological Institute at Freiburg as evidence of the contagiousness of cancer (Hektoen). Roswell Park believes that, for New York State at least, cancer is increasing at an alarming rate.

Attempts have been made to show that cancer is endemic, peculiar to certain localities. Behla cites cases of Behrens, who found in a village 10 deaths out of 38 to be due to cancer. Pfeiffer, Powers, and Friesinger maintain that in certain houses (cancer houses) and marshy districts in the vicinity of ditches and streams containing sluggish water, especially if the stagnant and polluted water were used for watering garden vegetables and for drinking purposes, cancer is relatively frequent (Hektoen). This would point rather to a microphyte than to a microzoon as the etiologic factor.

Since infection of living tissue is believed in every instance to be due to bacterial invasion, naturally bacteriologists directed their attention toward the discovery of a specific germ. Very soon we had a long list to enumerate. Plimmer, of London, examined in six years 1,298 carcinomas and in 1,130 he believed that he found parasitic bodies. Sjöbring laid much stress on cell inclusions. Russell described his fuchsin bodies, which were spherical or oval. L. Pfeiffer, of Weimar, published several monographs on the protozoa as a cause of cancer. Eisen brought out his *Canceri amœbae*. Korotneff believed that he had found an organism which he termed *Rhopaloccephalus carcinomatosus*. Bosr found and described an organism that he called *Myxosporidia coccidia*. Gaylord, of Buffalo, described at great length bodies that he believed bore an etiologic relation to cancer. Sanfelice, of the University of Cagliari, emphasized the etiologic importance of bodies that he named *Saccharomyces neoformans*. A very large number of other publications on this subject made their appearance, none of which differed in any essential point from those bodies just mentioned.

While the presence of the aforesaid bodies described by the different observers can be demonstrated and are present in a large proportion of the cases of cancer, all the requirements necessary to prove them to be the organisms solely responsible for cancer have not been fulfilled. The requirements necessary are: (1) the organism must be isolated; (2) a cancer must be produced when the organism is introduced into another body; (3) the organism must be recovered from the cancer produced. It has been shown that while the first requirement has only apparently been fulfilled the second has been, in a number of cases, seemingly produced. More careful investigations have proved that the experimental growths were not cancer. The third requirement has not been fulfilled.

All of the work mentioned above was carefully reviewed in all its details by the cancer committee, who in their second annual report to the surgical department of the Harvard Medical School showed conclusively that the bodies described by the various investigators under different names were not cancer nor the cause of cancer. I can do no better than to quote in full the results of their labors. They bear the marks of painstaking and conscientious work. The conclusions of the Harvard cancer committee were written by Edward H. Nichols and were as follow:

¹The Lancet, September 20, 1902.

It has been claimed by the adherents of the theory of the parasitic origin of cancer that

1. A proliferation of epithelial cells analogous to the lesions seen in cancerous tumors can be produced by certain wellknown protozoa (nodules caused by the coccidium oviforme).

2. Certain skin lesions characterized by epithelial cell proliferation are due to the action of a so-called protozoon (molluscum contagiosum).

3. Blastomycetes are constantly present in human cancers and are the cause of the lesion.

4. By experimental inoculation of animals with blastomycetes true epithelial or cancerous nodules can be produced.

5. Finally, the wellknown endocellular bodies seen in the protoplasm of cancer cells have a definite morphology, are parasites and the cause of cancer.

It has been the object of the investigators, the results of whose work appear in the preceding pages, to study each of these questions. As a result of the lines of work pursued by them under the direction of the Cancer Commission during the past year it is concluded that:

1. The lesion produced by the coccidium oviforme is essentially a process of chronic inflammation and is not analogous to the lesion seen in cancer.

2. The lesion of molluscum contagiosum is characterized by certain changes in the epidermis, is not due to the action of a protozoon and is not analogous to cancer.

3. The so-called "blastomycetes" (saccharomycetes) of Sanfelice and Plimmer are torulas.

4. The lesions produced by these "blastomycetes" (torulas) are, essentially, nodules of peculiar granulation tissue, are not cancerous, nor in any sense true tumors.

5. Blastomycetes are not constantly present in human cancers.

6. The peculiar bodies seen in the protoplasm of a cancer cell are not parasites nor the cause of the lesion, but probably are, in part at least, atypical stages of the process of secretion by glandular epithelium.

It is clear that in the present status of the etiology of cancer, bacteriologically considered, the case has not been proved. But it does not follow that it will not be shown that cancer is due to a specific and well-defined organism. It may be an organism so minute as not to have been brought within the range of the microscope. It is possible that no stains have yet been found that possess the requisite affinity for its complex molecular constitution. The necessary artificial medium for its cultivation remains for some future investigator to solve. Be it what it may, since the clinical features give strong evidence of the infectiousness of cancer, the search must and will be continued along the same lines.

In this search for a specific contagium, cellular metabolism must not be forgotten. Its consideration and study is perhaps more important than the isolation of a specific germ. It can not be denied that the more exact our knowledge of cytomorphosis becomes the clearer will be our understanding of cell proliferation. It has long been understood that there must be certain stimuli that cause cell growth and certain inhibitors that limit cell development and exercise control in accordance with the requirements of the tissues. Certain other influences bring about a disturbance of the normal equilibrium between the stimuli and the inhibitors. It is evident that the exact nature of the stimuli, the inhibitors, and the disturbers must be ascertained. This involves a study of the cell constituents and the fluids that surround it. As we see, it is a question of chemistry.

In this connection it is important to take note of a very novel hypothesis bearing on the formation of newgrowths propounded by Homer Wakefield.

He believes that a neoplastic formation is not an exaggeration of anabolism, increased or excessive proliferation, but that it is a product of katabolic stasis; that is, normal cell division is unimpaired, the anabolic process continuing to the point of maturity of the cell. It attains the meridian in its life and reaches the postmeridian state when it should undergo normal katabolism, a complete dissolution and disappearance of the cell. Instead, something has supervened to check katabolic changes, the cell becomes superannuated and its existence is

prolonged until finally it undergoes various degenerative changes. Normal cell production continues, but normal cell dissolution is retarded or abolished, hence the cells accumulate, producing the appearance of what is regarded as cell proliferation.

This condition Wakefield has termed katabolic stasis or subkatabolism. He states that the intercellular substance is richly alkaline, and that the tissue cells are more or less soluble in it. The cells, during the period of their growth, generate sarcolactic acid, and during this period they are richest in protoplasm. After the meridian the cells offer decreased resistance to the solvent powers of the alkaline medium and lose their protoplasm, the nucleus alone remaining.

He infers that before the meridian is reached the acidity produced by normal cellular activity protects the cells by its neutralizing effects on the intercellular alkalies and that this preserves the investment of protoplasm. Now, if from any cause the normal alkalinescence of the intercellular substance is reduced, or if in a given area the acidity increases, katabolic stasis affects all the cells in that area. Suboxidation consequently takes place. It is therefore believed that cancer formation is an acid process.

Briefly, tumor formation, according to this hypothesis, rests on a stasis of katabolism, subkatabolism and suboxidation, in the presence of normal anabolism. The cell inclusions, observed by many investigators and regarded by them as protozoa, cancer parasites and as blastomycetes, Wakefield regards as products of disturbed nuclear division. This new hypothesis at present rests only on theoretic grounds, but the arguments are so thoughtful and so suggestive that they deserve careful attention. Their chief importance at this time consists in the bearing out and support of the methods of research along chemical lines.

We are all familiar with Virchow and the birth of cellular pathology, with Ehrenburg and the growth of bacteriology, and now we have arrived at and are in the humoral or chemical era. The trend of all research at the present time is beyond cells and beyond bacteria. It is to determine the chemical operations in and around the cells. This line of research began in the leukocytes because they were the most available. In their study it was possible to establish basic principles. From the leukocytes to the erythrocytes was only a step and then the epithelial and connective tissue cells received attention. This field of research is a new one. It is occupied by a vast army of patient and earnest toilers. The fruits of their labors will be beyond our greatest expectations. It is our present purpose to see if the cancer problem can be solved along these lines.

What has malignant disease to do with immunity? The entire subject of immunity has to do with infection. It has to do with its nature, mode of action and control. Has cancer any characteristics that pertain to infection? Bacteriologically we have found none. Clinically, we have a mass of evidence that would seem to place cancer among the infectious diseases.

In order to have a clear understanding of the modern conception of immunity it is necessary to review as briefly as possible and in barest outlines without comment the most important features of our present knowledge of the subject. Much material that may seem essential to a complete elucidation of this great and important subject had to be eliminated on account of the limited scope of this dissertation.

More than a century ago we find that John Hunter was familiar with some antiseptic properties of the blood. He found that a small amount of putrefying material could be added to a given quantity of fresh blood without producing putrefaction. Consequently, he advanced his doctrine of "the living principle of the blood." This, as an observation, was almost forgotten, and its import was not fully realized until Nuttall, in 1888, began his systematic work in Flüggé's laboratory, studying the antibacterial properties of the body fluids especially the blood-serum.

The greatest impetus to the study of immunity was given by Metschnikoff in calling attention to the participation of the leukocytes and other cells in the process of infection, establishing his wellknown theory of phagocytosis. His views are so well understood that we need only to call attention to them at this time.

Following Nuttall, Pfeiffer discovered, in 1894, "the extracellular disintegration and solution of cholera spirilla in the peritoneal cavity of immunized guineapigs."

The greatest attention and interest was aroused by Behring's great discovery of antitoxic immunity. Bacteriologists at once endeavored to elucidate by elaborate researches the exact way in which immunity was established. Chief among these was Ehrlich. It was soon shown, however, that immunity in most bacterial infections did not depend, in the main, on the antitoxic principle.

Pfeiffer's phenomenon afforded a starting point from which Metschnikoff, Bordet, Ehrlich, and Morgenroth began their labors and brought forth a series of discoveries that have been epoch making.

A series of antibodies were differentiated and classified as antitoxins, antienzymes, cytotoxins, agglutinins, precipitins, and coagulins. Antibodies were in turn produced by these, with the exception of the antitoxins.

It was determined that to every cellular group of an animal species there appears to correspond a specific cytotoxin. These various toxins have been termed leukotoxin, neurotoxin, spermotoxin, nephrotoxin, thyrotoxin, etc.

These antibodies have been divided into two groups, first, the antitoxins which are single bodies; second, the cytolytins, whose antagonistic effects require the cooperation of two bodies.

Of these two bodies, the one which actually destroys the foreign cells is normally present in the cells or fluid of the organism, but it seems incapable of action without the intermediation of a body which is distinguished from it by a greater resistance to heat. The two elements composing cytolytins exist quite independently of each other so that one may be present without the other or be artificially removed without affecting the other.

To demonstrate the mode of action and constitution of the specific antibodies, Ehrlich has propounded the theory of receptors or side-chains. The atomic grouping of the toxin molecule, which affects the union with antitoxin as well as with a particular cell, he has designated as haptophore groups.

In view of the fact that certain molecule groups of the living protoplasm favor the taking up of certain poisons, he has termed them receptors. According to his theory of antitoxic formation, after the introduction of toxins, the receptors are produced in excess and finally are thrown off into the blood as useless ballast. The free circulating receptors are the antitoxins, termed amboceptors, intermediary bodies. The action of antitoxins is explained thus. They take charge of the haptophore groups of the toxin molecules and prevent them from approaching the receptors of the tissues.¹ There are as many receptors as there are toxins, while almost every day new ones are discovered.

Behring gives the most exact and brief definition of Ehrlich's antitoxin theory: "The same substance, which, when incorporated in the cells of the living body, is the prerequisite and condition for an intoxication, becomes the means of cure when it exists in the circulating blood." Every antiserum protects only against substances through which it becomes immunized. Every antiamboceptor protects only against its particular amboceptor.

Ehrlich and Morgenroth found, in experiments with goat's blood, 13 different new lysins which represent so many receptors. "The receptors are in the cells, not for the purpose of linking poisons to the cells, but to seize certain foodstuffs, particularly proteids, and the toxins, bacterial and other foreign cellular substances, if capable of inducing the immunizing reaction, chance to have the requisite combining affinities for the receptors."

The living body possesses bactericidal and cytolytic substances which may protect it by destruction of invaders or may injure it by destruction of its own cells, according to the mates with which they are paired.

In considering the physiological mechanism of the cells we find that they are designed primarily for the assimilation of food, and secondarily to meet pathologic conditions, the pro-

duction of antitoxins, cytolytins and other similar bodies. The receptors are in the cells for the purpose of taking up food-stuffs, chiefly proteids. The toxins and bacterial cellular substances have combining affinities for the food receptors, if they are capable of inducing an immunizing reaction.

In producing immunization against bacteria, it is the intermediary body (amboceptor) which is generated. It has been found that these antibodies have a specific relation to the substances which caused their formation, as has been shown by the injection of a specific serum into an animal at certain intervals, of toxins, against which an antitoxin is desired.

The specific nature of these antibodies is further shown in their application to serum diagnosis, as shown by the Widal agglutination test for typhoid fever and the serum test in the diagnosis of *Bacillus dysenteriae* Shiga, an organism shown to be the cause of acute dysenteries by Flexner, Vedder, and Duval.

When Roux and Yersin discovered diphtheria antitoxin, and Ehrlich the origin and mode of action of antitoxin, a lasting foundation for the study of immunity was laid. It was positively shown that "soluble toxins enter, as assimilable substances, into combination with constituents of the body cells for which they have an affinity," and are enabled to produce immunity or to exert toxic effects.

The expectations that we should soon be enabled to solve all questions regarding the action of toxins after the discovery of soluble bacterial toxins, have only partly been realized, especially regarding the action of the pyogenic micrococci, which concerns us most as surgeons.

However fruitless hitherto the practical results regarding toxins of many pathogenic and especially pyogenic organisms, the principle has been established, and it is only a question of method and time when all body toxins and their antitoxins shall be definitely known.

Pfeiffer directed his attention to the bacteria and found substances, toxins, in cholera spirilla, which became free only after the bacteria were dead and which were termed intracellular poisons. This was a most important step in advance, but we must acknowledge that we know as yet very little about the action and nature of intracellular bacterial poisons.

It is interesting to note from the result of Flexner's experiments with venom that their action on red blood-corpuscles, leukocytes and nerve cells is like that of duplex cytotoxins, which depend on the combination of intermediary bodies contained in the venom on one hand, with corresponding complements in the cells or fluids acted on. This is shown by the addition of venoms to fresh blood, which brings about the quick destruction of the red blood-corpuscles. If the fresh blood has been washed with an isotonic salt solution, so as to remove all the complement, we find that the corpuscles are not dissolved, but agglutinated. It seems that the venom serves chiefly to bring "into necessary relations with constituents of the body cells poisons we already harbor or may generate, but which are harmless without the intervention of intermediary bodies."

Flexner and Noguchi have shown that the leukotoxic, the neurotoxic and other cytotoxic properties of venom depend on combinations of venom, intermediary bodies with complements contained in the cells poisoned by venom, or in the fluids bathing these cells, indicating that the snake venom contains only a part of the complete poison.

Flexner and Noguchi also demonstrated that hemorrhages in various tissues of the body resulting from poisoning from certain venoms is due to the presence in venom of a cytotoxin which has the power to dissolve endothelial cells, which they termed endotheliolysin (hemorrhagin). It causes extravasation of blood through its direct solvent action on capillary endothelium.

The hemolysins have been most extensively studied because of their great pathologic significance, and it has been found that many bacteria have hemolytic power. The secondary anemias, so constant in streptococcus infections, in pneumonia, typhoid fever, and other diseases, afford a most striking example.

Normal blood-serum contains antihemolysins which protect red blood cells from bacterial hemolytic agents. Asso-

¹ Ehrlich: Schlussfolgerungen, p. 176.

ciated with hemolysins are bacterial hemagglutinins, possessing the power to clump red corpuscles.¹

Heuter and Klebs believed that thrombi were due to the coalescing of red blood-corpuscles. Welch calls attention to hyaline thrombi formed by agglutinated red corpuscles. White corpuscles are agglutinated by certain bacteria and also by pus cells.

What is urgently needed is a separation of these poisons and a determination of their source, constitution, mode of action and degree of specificity.

It will not be out of place here to allude to the studies made of the ductless glands, because of their supposed bearing on immunity. Sajous urges that the adrenal extractives have a decided affinity for oxygen, offering a key to tissue respiration and to the functions of all other organs now classed as the ductless glands. It has been found that the red corpuscles are not the only carriers of oxygen, but that the blood plasma contains and distributes this gas. Schmiedeburg, Jacquet, Claud Bernard, and others, demonstrated the existence of an oxidation ferment in the plasma, and these bodies are now entertained as an oxygen-laden secretion. This secretion is believed to permeate nearly all the body elements. The blood also contains a fibrinogen body which combines in certain quantities with fixed portions of the plasma's oxygen. The changes in the temperature of the blood were traced to variations in the amount of the fibrinogen in the plasma. The adrenals have been shown to be connected with the anterior pituitary body by various sympathetic ganglia. The anterior pituitary body is regarded as the governing center of the adrenal system. Over-activity of this body increases the adrenal secretion, consequently oxidation, therefore vital resistance. Depression of the activity of the pituitary body causes decreased supply of oxygen, consequently depressed vital processes.

The thyroid secretion, thyreoidin, has been shown to sustain the efficiency of the pituitary body. Excessive thyreoidin production stimulates the pituitary body and produces exophthalmic goiter. Deficient thyreoidin production leads to myxedema. The adrenals, the pituitary body and the thyroid gland constitute the adrenal system. According to this line of research it is believed that toxins act directly on the adrenal system, and, by decreasing or increasing its secretion, decrease or increase the oxidation process. Certain toxalbumins and many drugs stimulate the adrenal secretory powers to a certain limit, and when exhibited in excessive doses, depress or arrest the functions of this system.

The posterior pituitary body has been shown by Berkley, Andriezen, and others, to be the chief functional center of the nervous system. It is the center for such emotions as shock, excitement, etc. It governs all organic functions through the nervous system. The secretions of the pancreas and spleen, according to Schiff, and later by Herzen, unite and change trypsinogen into trypsin, a solvent for the albuminous bodies in the pancreatic juice. This ferment performs an important part in immunizing processes, in that it destroys toxalbumins.

Viewing these labors in the light of Ehrlich's researches, the oxidizing substance represents the amboceptor; the spleno-pancreatic internal secretion, trypsin, represents his complement. To produce a proteolytic action of trypsin, fibrinogen and the oxidizing substances are required. These views are somewhat at variance with those commonly accepted, but are of sufficient importance to deserve consideration in this connection.

From the foregoing it would seem that the doctrine of phagocytosis plays an unimportant role. But we find that the French or phagocytic school, at head of which is Metschnikoff, recognizes the full significance of acquired immunity and the cytolytic principles represented by the cooperative action of intermediary bodies and complements. The German, or humoral school, led by Ehrlich, recognizes the leukocytes to the fullest extent.

The chief difference between the French and the German schools consists in the belief by the advocates of phagocytosis, that the complements reside in the leukocytes, whereas the

adherents of the humoral school believe that they exist in the blood-plasma.

While in what has here preceded we have been concerned in the consideration of chemical problems, we must not overlook the fact that behind all is a governing force which resides in the central nervous system.

The practical outcome of these studies has been found in the production of antitoxic sera, some of which have been proved to have a definite and exact effect under certain conditions. We find these sera divided into two principal groups: (1) Those that have an antibacterial action; and (2) those that have a purely antitoxic action. Of all the sera, the diphtheric is best known. According to Welch the mortality of diphtheria has been reduced from 40% to 15% by its use.

Antitetanus serum has been disappointing. Reports coming to us from different sources are conflicting, the mortality ranging from 0% to 70% from practically the same methods, which consist in administering the serum by the subcutaneous, intracerebral and the spinal methods. Antityphoid serum has failed to fulfil expectations even more than antitetanus serum. The antistreptococcus serum of Marmorek, while it seems to have exerted a specific effect in purely streptococcal infections, appears to exert no influence in the presence of mixed infections. The antipneumococcal serum has not yet emerged from the experimental stage. Nothing can be said of its effects. The antiplague sera of Haffkine and Yersin demonstrated that, as a preventive, it reduced the number of cases to one-twentieth and the mortality in a given number of cases was reduced from 33% to 13% (Calmette). The antitubercle serum has been shown to have a specific effect on tuberculous tissue, but remains powerless in the presence of mixed infections. The antivenom serum has been demonstrated to have a positive usefulness in certain snake bites. Calmette's antivenin has been proved to be of undoubted use in leprosy.¹

Many other sera have been described, but their usefulness thus far has been shown to be of an uncertain nature. Consequently, we will leave them out of consideration at this time.

When we pass in review all that is positively known in relation to the question of immunity, we can not deny that some of the principles underlying this great question have, in a measure at least, been revealed. The evidence is conclusive that "the same substance which, when incorporated in the cells of the living body, is the prerequisite and condition for an intoxication, becomes the means of cure when it exists in the circulating fluid."²

Ehrlich, in his investigations of diphtheria toxins, demonstrated "that soluble toxins enter as assimilable substances into direct combination with constituents of the body cells for which they have an affinity, and only thereby are enabled to bring about immunity or to exert toxic effects." Further, in connection with Metschnikoff, Bordet, Morgenroth, and Ehrlich, it is shown that "the organism possesses a power to produce substances specifically antagonistic to all sorts of foreign cells, cellular products and derivatives. The substances capable of inducing this immunizing reaction appear to be mainly of an assimilable, albuminous nature, or at least intimately associated with such material."

The principle of toxins and antitoxins has become as firmly established as any other in medicine or surgery. We have noted that antitoxins from pure cultures have a certain affinity for and possess immunizing power in specific infections, but fail in the presence of mixed infections. We see at once that failure to immunize does not violate the principle, but that the method of application has been at fault. We know that diphtheria toxin has a specific effect for the products of the Klebs-Loeffler bacillus, and that it controls and cures in the presence of these, but fails when there is an admixture of other forms of infection. This is shown by the 15% mortality which still exists. We have noted that antistreptococcus, tuberculous and plague sera have a specific and a decided effect in pure infection, but that they fail in the presence of other specific germs. We observe with satisfaction the certainty of the action of a

¹ F. A. Packard and Robt. M. Wilson, American Journal of the Medical Sciences, December, 1900.

² Behring's Definition of Ehrlich's Theory Concerning Antitoxin. Welch.

¹ Heuter-Klebs, p. 731.

given antitoxin in its union with the toxin from which it was produced. It at once becomes apparent that, in the presence of several toxins or a mixed infection, it will require several antitoxic substances, a combination of antitoxic sera, or a serum containing different kinds of amboceptors, so combined as to meet and unite with the several toxins in a given case. Coley endeavored to meet such indications by combining *Streptococcus* and *Bacillus prodigiosus* sera in treating inoperable sarcoma.

These observations presage a revolution in therapeutics, which perforce means a refinement in diagnosis beside which what we do now will scarcely bear comparison.

The inferences to be drawn from the foregoing indicate that the future work will be biochemic. It appears that the solution of cell metamorphosis, as it is observed in pathologic conditions, will be in the field of chemistry. Ehrlich's theory of the side-chains has given us a working hypothesis almost as practical as the atomic theory when applied to chemistry. It is not an idle dream to believe that the revelations of the future will not only consist in a complete exposition of cells and body fluids, or a perfect understanding of the governing brain centers, but may extend to the life principle itself, although life itself may and will ever belong to the unknowable.

Our chief interest, however, will always center in the cell and its governing influence. Just what influences are responsible for normal cell division may never be known. But it is within the bounds of human possibility to know what influences may be responsible for atypical and excessive cell growth. Excessive cell growth, both in the leukocytes and connective tissue cells in acute infections, we can assume to be due to toxins that are in excess of the amboceptors. The existence of cytolytins and anticytolytins is now undisputed. The one destroys, the other protects the cells. We have noted that the chief function of a receptor molecule is to combine with nutrient molecules a metabolic, a chemical process. The birth and growth of the cell is restricted within certain limitations and is regulated by chemical law. Now the problem depends on our ability to ascertain the exact influence that carries cell division beyond its normal bounds and causes excessive cell growth as we observe it in malignant newgrowths. That the process is one of localized excessive nutrition is apparent. The localities of predilection are frequently at points where the cellular elements are exposed to frequent insults, where the tissues are damaged, establishing a *locus minoris resistentiae*, as, for example, in the mouth, gastrointestinal tract and the female reproductive organs. A point of least resistance, damaged tissue, if you please, always offers a soil for bacterial invasion. Cancer very often develops in tissues that have long been irritated, no doubt liberating a complement that unites with a specific infection when introduced under proper conditions. Such is not always the case, however. In fact, we know that in the majority of tissues that sustain irritations and almost constant traumatism for many years never become malignant. The simple traumatism does not develop cancer. A specific toxin must be introduced, probably also an intermediary body to complete the side-chain, which increases karyokinetic energy. We have noted in our studies of immunity that the life or death of the cell depends on its intracellular and extracellular composition, so we may say that the whole process, whether it relates to normal or excessive cell-growth, is chemical.

An objection may be urged at this point, which consists of the fact that the propositions of immunization thus far considered affect groups of cells extending over a wide range, *i. e.*, the vascular, the muscular, and the glandular or cerebrospinal systems. It has been shown that cancer is always at the onset, and often throughout its entire course, absolutely a local disease. It would not seem rational to attempt immunization of the entire system against a strictly local disturbance. We will naturally turn our hope toward a method that will enable us to affect local immunization.

That local immunization is possible has been demonstrated by P. Römer in the following convincing abrin-immunization experiment: As is well known, abrin, which is the toxalbumin of the jequirity bean, will produce a severe conjunctivitis in animals and men. Ehrlich had demonstrated that rabbit's con-

junctivas became immune after the instillation of abrin. Römer instilled into the right eye of the rabbit weak abrin solutions, the dosage being rapidly increased until immunization was produced. In three weeks the rabbit was killed. It was then shown that if the right conjunctiva, which had undergone severe inflammation, were rubbed and macerated with a certain amount of abrin and injected into a healthy animal it had no effect. But if the conjunctiva of the left eye, which had received no instillation, were rubbed and macerated with abrin and injected into an animal death always followed. Römer concluded from this observation that in conjunctival immunizations a part of the autotoxin existed in the conjunctiva itself. A local antitoxin was produced.

It would seem that these results establish definitely the principle of local immunization in indifferent tissues. These observations have an important bearing on the adaptation of the cells in local affections. That local affections of various forms or general affections with local manifestations can be best managed by the local introduction of exceedingly small doses of the specific remedy was shown by Professor Bouchard before a recent meeting of the Egyptian Congress. He found that articular rheumatism disappeared after the injection *in situ* of small doses of salicylic acid, in some cases only half a grain. We must conclude that local cell metabolism can be influenced by local rather than by general diffusion. The inhibition of excessive cell growth must be accomplished in the same way.

It would seem, then, that the cancer question must be solved along the lines of chemistry. Since we know that contagious or infectious energy does not depend on the bacterium itself but on its products, which are purely chemical, it would seem that it matters little whether the specific parasite is found or not. Since the cancer germ has thus far successfully eluded the most vigilant search it becomes more and more evident that in the field of chemistry will be found the solution for our problem.

It will be difficult to rid ourselves of time-honored views. Purely theoretical speculation, like the hypothesis of cell proliferation from inclusions of embryonic matrices, according to Cohnheim, must give way to the demands of modern science that insist on actual observations and practical demonstrations.

Now, then, will it be unreasonable to hope that when protoplasmic changes are thoroughly understood, and when the body sera have given up their secrets and the influences that govern cell growth, that we may also find the antibodies which will inhibit cell multiplication beyond natural bounds?

The studies in the field of immunity have as yet only assumed the proportions of the initiatory stage. A vast unexplored wilderness lies before us. The pioneers have begun their work well. They have outfitted themselves in a manner that will in the near future enable them to throw unexpected light in the pathway of their conquest of discovery. They are only on the verge of this vast domain. What lies beyond the borders we can no more foretell than could Boyer know that in 24 years after his death we should have anesthesia and that in 50 years the world would have antiseptic surgery. And yet, in the light of our present knowledge, the hope, amounting to a conviction, arises in us that even in our lifetime, if we are spared a few years more, we will have an exact biodynamic and biochemic science that will make diagnosis accurate and precise, and one that will enable us to treat and control all infections with an exactness not now possible. While the surgeon is now constantly encroaching on the field of the internist, the time is not far distant when the physician may not only reclaim his own, but with it that large group of neoplasms known as malignant growths that from time immemorial has been the exclusive property of the surgeon.

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1. An Examination Into the Claims of the Red-light Treatment of Smallpox. JAY F. SCHAMBERG.
2. Three Essential Points in the Operation for Cicatricial Ectropium. F. C. HOTZ.
3. The Objections to Prescribing Medicines of Unknown Composition. AUGUSTUS A. ESHNER.
4. A New Method of Shortening the Round Ligaments Intraperitoneally for Retroversion. HENRY T. BYFORD.
5. The Meaning and Significance of Leukocytosis. ROBERT N. WILLSON.
6. Is the Tuberculous Chest Flat? WOODS HUTCHINSON.
7. Blood-pressure Determinations in General Practice, Introducing a Practical Instrument for Routine Use. HENRY WIREMAN COOK.
8. Further Observations on Increased Blood Counts Due to High Altitude. JOHN WEINZIRL and C. EDW. MAGNUSSEN.
9. A Case of Brain Abscess Due to Latent Typhoid Infection; Operation; Death from Cardiac Complication. G. W. MCCASKEY and M. F. PORTER.
10. Shock Produced by General Anesthesia, with Relation to Disturbances of the Blood and Gastrointestinal Tract. FENTON B. TURCK.
11. Antitoxin and the Pharmacopoeia: Plea for the Adoption of a Test Which, in the Author's Experience, Presents the Least Difficulties. WILLIAM R. HUBBERT.
12. Some Experiences with the X-ray as a Therapeutic Agent: Report of the Cure of a Case of Alveolar Melanotic Sarcoma. EDWIN WALKER.
13. Morphine and Cocaine Intoxication. GEORGE P. DALE.
14. A Note on the Value of Auscultatory Resonance and Auscultatory Percussion as Aids in Diagnosis. CARL C. WARDEN.

1.—Red-light Treatment of Smallpox.—J. F. Schamberg does not believe that exposure to diffuse winter daylight could cause any irritation of the skin. The predilection of the eruption for the face and extremities is due to the greater vascularity. Congestion of a part prior to eruption augments the lesions, but irritation after its appearance does not influence it unfavorably. If Finsen's theory were correct the negro should suffer less severely than the white. Scarring is less determined by any special treatment than by the vaccinal condition of the patient and the severity of the disease. The vast majority of once vaccinated patients suffer mild attacks and are not scarred. Even in the unvaccinated a mild attack may leave no scars. In determining the value of a remedy conclusions should be drawn only from nonvaccinated patients. The favorable reports of the treatment in Denmark, Sweden and Norway are due to those countries, after Germany, being the best vaccinated in Europe. [H.M.]

2.—Cicatricial Ectropium.—F. C. Hotz describes an operation which prevents unsightliness and subsequent eversion. The skin flaps used should be thin and adaptable. If the eyebrows are absent and there is sufficient cicatricial skin above the everted lid a curved incision is made upward, beginning and ending 5 mm. above the canthi. The flap outlined is dissected up to the lid border, the lid turned into normal position, and the edge of the flap fastened to the upper border of the tarsus. Its contraction cannot then turn the lid over, as to do this the point of purchase must be without the lid. The lid is then drawn down by two ligatures passed through the free border and fixed on the cheek by plaster strips. The wound above is covered by a Thiersch graft. If the presence of eye-

brows prevent the above operation an incision is made along the lid border, the lid drawn down and a graft sutured to this border and the upper edge of the tarsus. A similar operation may be done on the lower lid, beginning 1 mm. below the canthi, the edge of the flap being anchored to the tarsoorbital fascia. Before anchoring, the overstretched lid margin is shortened by removing a four-cornered piece (except the conjunctiva) near the outer canthus and bringing the horizontal edges together by sutures. The lid is held up by ligatures plastered to the forehead. At the end of the first week the ligatures and sutures may be removed. [H.M.]

3.—Prescribing Unknown Compositions.—A. A. Eshner points out that if the identity of a medicine is not known through its composition the prescriber has no assurance that he will always receive the same article, the cost to the patient is higher, the physician surrenders originality, and independence in his therapeutics and the practice is unnecessary, as the same results can be achieved by medicines of known composition. If physicians will cease demanding illegitimate preparations manufacturers will stop producing them. [H.M.]

4.—A New Method of Shortening the Round Ligament Intraperitoneally.—H. T. Byford folds the ligaments anteriorly, according to Dudley, but stitches the loop to the abdominal parietes about opposite, or behind and a trifle above the internal inguinal ring. The ligament is drawn as far out of the inguinal ring as possible without doing violence to the tissues. A catgut suture is passed through it a quarter of an inch from the uterine end and a half inch from the ring. This includes only half the caliber of ligament in its grasp. The inner edges of the loop are touched with a chemic irritant and sewed together. The end of the loop is also touched with the irritant before being sutured to the abdominal wall. When there is a tendency to prolapse he sutures the whole side of the fold to the peritoneum beside the bladder, or even sutures the portions of the round ligament external to the folds to the parietal peritoneum in front. When there is decided prolapse he stitches the infundibulopelvic ligament forward, the fundus uteri itself, and even takes folds in the sacrouterine ligaments. In cystocele he separates the urachus with a strip of peritoneum, and after twisting and drawing it up sews it into the abdominal wound. [H.M.]

5.—Significance of Leukocytosis.—R. N. Willson reaches the following conclusions from his investigations: The term must include every increase in the absolute number of leukocytes, as well as every increase in the percentage count of the various leukocytic forms. Leukocytosis is a clinical sign of importance but never of such weight as to influence against equally convincing physical signs. A high percentage of the polymorphonuclear forms in the absence of an absolute leukocytosis indicates the presence either of pus or of some grave inflammatory process, with low vitality. Special factors may interfere with the usual reaction of the polymorphonuclear cells. One instance has been noted in which the total leukocytes were increased with marked reduction in these forms. Single counts are often misleading. A series seldom fail to aid in diagnosis. A gradual but steady rise in total count usually indicates an augmenting inflammatory influence. When it reaches large proportions it indicates an active leukocytic process (serous, purulent effusion, localized pus, pneumonic exudate, etc.), provided the clinical picture also bears out the suggestion. [H.M.]

6.—Is the Tuberculous Chest Flat?—W. Hutchinson presents further data substantiating his previous observations that the typical tuberculous chest is round instead of flat, and has an average index of about 80 (taking the transverse diameter as 100), nearly 10° above the normal. This type of chest precedes the disease and is the abnormal persistence of the fetal and child type. The chests of growing boys and girls should be systematically measured at stated intervals, and active steps taken to remedy this defect when found, including all those sports and exercises which involve wide-swinging play of the arm, chest, and shoulder muscles. [H.M.]

7.—Blood-pressure.—H. W. Cook describes an instrument which applies the Riva Rocci principle in a compact form serviceable to the general practitioner. The three essential parts, manometer, arm piece, and bulb with valve attachments are

connected by rubber tubing. These form a closed air system throughout which pressure is everywhere transmitted equally. The manometer is entirely of glass. A vertical tube projects into a glass reservoir containing mercury. An outlet tube allows free communication with the rest of the system. The scale is etched on the glass, and the tube is divided by a glass joint to permit packing. An extensible rubber bag completely encircles the arm and transmits pressure equally to every point of the artery. The rubber bulb by which pressure is raised and the reservoir bulb are similar to that used in the Paquelin cautery. A reading should not take longer than a half minute. This instrument is intended for maximum pressure readings. Minimum readings may be determined approximately by noting the point of maximum oscillation of the mercury column after the tube leading to the bulb is clamped off. Blood-pressure reports should all be given in the same terms. A maximum reading requires the least time and the simplest technic, is the more accurate, and of the greater clinical value. Pulse-rate often affords a good index of pulse force, but a blood-pressure reading is the force. [H.M.]

8.—Increased Blood Counts Due to High Altitude.—J. Weinzirl and C. E. Magnusson record observations made on men and rabbits, supporting the view that high altitudes have no permanent effect on the number of red cells, a fall in temperature producing the same effect as high altitude. They believe that the temporary increase is largely due to change in the temperature factor, and not to diminished barometric pressure. [H.M.]

10.—Shock from General Anesthesia.—F. B. Turck concludes from his researches that the circulatory disturbances from ether and chloroform result from the effect on the vasomotor centers. Their prolonged action on the splanchnic circulation results in congestion, with fall in temperature. Toxic products may be formed. Elaboration of these causes symptoms of auto-intoxication. Disturbances of elimination cause indirect toxic effects. The blood-serum is less resistant to normal and bacterial toxins and there is diminished resistance to saprophytic and pathogenic microorganisms. This may be due to diminished antiferment. Reflex irritations of the elementary tract may result from excretion of the anesthetic into stomach and intestines, or atony may increase the formation of toxins in the stomach, and the accumulation of gases interfere with the circulation. There is increased toxicity of the stomach contents in the presence of chloroform and ether. [H.M.]

11.—Antitoxin and the Pharmacopeia.—W. R. Hubbert bases his system of standardization on the Ehrlich unit of measurement except that he substitutes for the imported Ehrlich standard serum a standard toxin prepared by himself, and originally standardized to conform in L + to one Ehrlich unit. Toxins preserved with trikresol in a dark cool place in glass-stoppered bottles will keep as long as serums. A standard toxin like this could be kept in the laboratory of the committee for testing biologic products recently appointed by Congress and could be furnished each laboratory in the country, or could be procured by any pharmacist, and from it with a few guineapigs and sample apparatus for measuring doses an estimate could be made of the antitoxic value of a given bulb of serum which would come within 5% of being correct. There is so great variation in the value of different serums on the market that some uniform test should be adopted. This test is urged on account of its simplicity. [H.M.]

14.—Auscultatory Resonance and Auscultatory Percussion.—C. C. Warden assumes that diagnosticians are familiar with the latter. The former has been evolved from it. By substituting a vibrating tuning-fork for the percussing finger a musical tone is transmitted through the stethoscope, varying in intensity, quality and character with the size and density of the subjacent organ. Pressure of stethoscope and fork should be uniform. The stethoscope should be placed over the viscus and the fork brought toward it. Each lobe of the lung, the separation between heart and liver, and sometimes the septum of the heart can be made out by this method. No matter how obese the patient the method is applicable. It should be used to check over results obtained by ordinary procedure. The writer lists a number of obscure conditions in which it has proved valuable. [H.M.]

Boston Medical and Surgical Journal.

April 30, 1903. [Vol. CXLVIII, No. 18.]

1. Albumosuria. CHAUNCEY REA BURR.
2. A Case of Juvenile Aortic Stenosis, with Subsequent Insufficiency: Sudden Death; Autopsy. ALBERT N. BLODGETT.
3. Mountain Sanatoriums for Tuberculosis. WALTER LINDLEY.

1.—Albumosuria.—C. R. Burr notes that peptones and albumoses are both found in the chyme, neither in the blood, a reversible zymolysis having occurred. The conditions are favorable for this in the intestinal mucosa. When there is a break in the mucosa absorption into the blood and reappearance in the urine occurs. The condition is often marked by albuminuria. Albumosuria may also often be due to excessive production and destruction of leukocytes. It is found where there is leukocytosis, and peptonuria where there is pus. It is highly probable that a large part of the albumoses in febrile blood are derived from leukocytes. For their detection the writer prefers Ogden's methods, which he describes. He lists the diseases in which this manifestation occurs. He tends to the belief that fever is due to albumose poisoning. Albumoses contain neurotoxic and hemolytic principles as in serpent venoms. The higher centers of the brain and cord appear specifically affected. Albumose poisoning is in general coextensive with that of the septic states, and the treatment is that of the latter. The neurotoxic element is best combated by oxygen and strychnin. He recommends magnesium dioxid ("brogen") and rectal injections of normal salt solution. [H.M.]

3.—Mountain Sanatoriums for Tuberculosis.—W. Lindley sums up the desirable points as an altitude of about 5,000 feet, the greatest amount of sunshine and of days permitting outdoor exercise, purity of atmosphere and water supply, pine forests for their balsamic effect, and beauty of scenery. He notes the fulfilment of these desiderata in Idyllwild, and asks the cooperation of the profession in making the sanatorium a success. [H.M.]

Medical Record.

May 2, 1903. [Vol. 63, No. 18.]

1. Cranial Form in Man, Together with Some Remarks on the Attitude of the Profession Toward Anthropology. ARTHUR THOMSON.
2. Reciprocity in Pathology. S. B. LAACHE.
3. The Antituberculous Campaign in Latin America. EMILÉ R. CONI.
4. The Expansion of a Specialty. HOWARD A. KELLY.

1.—Cranial Formation in Man.—Arthur Thomson gives a somewhat lengthy, interesting, and exhaustive study of the human cranial forms, together with some remarks on the attitude of the profession toward anthropology. His aim is to prove that the shape of man's head in his higher developments is not the result of those physical and intellectual environments which have led on the one hand to the reduction in size of his jaws and on the other to the increased volume of his brain. These attributes are perpetuated by the influence of heredity and modified by sexual selection, but they are inconstant. He traces the gradual ascent in the form of man's cranium from one type to another, thus disposing of considering the dolichocephalic and the brachycephalic types as due to independent origin. In regard to the cephalic index, he agrees with Professor Boas, who considers that while that index "is a convenient practical expression of the form of the head, it does not express any important anatomic relation." The writer's observations confirm those of Boas in that the relation between capacity and head diameters is of fundamental importance that among these the relation between the transverse diameter and the capacity is most significant. [A.B.C.]

3.—Antituberculous Campaign in Latin America.—E. R. Coni notes that today antituberculous leagues exist in Brazil, the Argentine Republic, Chile, Uruguay, Paraguay, Bolivia, Ecuador, and Cuba, and others are planned or in process of formation in Peru, Colombia, Venezuela, Mexico, San Salvador, and Costa Rica. The Argentine Republic occupies the first rank in South America, and Cuba in Central America in relation to work accomplished through the creation of dispensaries, sanatoriums, vacation colonies, seaside hospitals, and promotion of popular education. The work is done through public cooperation, not private initiative as elsewhere. He discusses some of the details, especially the measures inaugurated in the Argentine Republic. [H.M.]

New York Medical Journal.

April 25, 1903. [VOL. LXXVII, No. 17.]

1. The American Italy. CHARLES E. NAMMACK.
2. The Kidney of Pregnancy. JOHN O. POLAK.
3. Report of a Case of Infection by *Bacillus Coli Communis*. A. JACOBY.
4. The Surgical Treatment of Empyema. FRANK MCMORROW.
5. Fatal Meningitis with Myosis and Salivary Suppression as the Only Symptoms; Autopsy: A Study in Diagnosis by Exclusion. H. ALTSHUL.
6. Sarcoma of the Femur Following Traumatism: Amputation at the Hip-Joint by Wyeth's Method. GEORGE S. BROWN.
7. The Surgical Treatment of Ascites of Hepatic Cirrhosis, with Report of a Case. L. W. PEARSON.
8. Operation in a Case of Extradural Hemorrhage the Result of Whoopingcough. GEORGE S. BROWN.

1.—**The American Italy.**—Southern California is designated by Charles E. Nammack as "The American Italy." He says that this section has fully as varied a climate as Italy; it also has extremes of condition, which, however, unlike the Italian extremes, are favorable to health and longevity. It has six distinct classes of climate, all having a therapeutic value and application, as follow: 1. A purely insular climate at Catalina, Coronado, and the other channel islands. 2. The peninsular climate. 3. The coast climate. 4. The foothill and valley climate, 200 to 2,500 feet elevation. 5. The mountain climate, 2,000 to 9,000 feet elevation. 6. The desert climate, from 360 feet below sea-level to 2,500 feet elevation. The feeble and invalid may hope for benefit in southern California. Neurasthenics will find the recuperation which comes from restful climatic surroundings. Sufferers from malarial poisoning and its sequels will find almost certain relief on the seacoast. The free action of the skin which comes of a milder climate, the freedom from sudden changes of weather, and the risk of chill, and the choice of a wide range of diet make a very favorable combination for prolonging life in kidney troubles. The tuberculous who go there before the disease is far advanced, who have the means to secure reasonable comforts and the sense to follow the advice of a competent local physician, have a fair hope of checking the disease and even of apparent recovery. Asthmatics can generally secure immunity from the attacks. [C.A.O.]

2.—**The Kidney of Pregnancy.**—The changes in the kidney during pregnancy, the recognition of these changes, and their clinical importance as viewed from the standpoint of the obstetrician is the subject discussed by J. O. Polak. He believes that these changes are due to the fact that the kidneys are called upon to rid themselves of an excess of waste material the result of fetal as well as maternal metabolism. He says that while albumin indicates a renal insufficiency, its appearance, unless in quantity, is of little clinical significance, except it is associated with diminished excretion, deficient urea elimination, or fatty, granular, or waxy casts. The presence of these abnormal constituents determines the necessity of interrupting pregnancy. The kidneys are involved in about two-thirds of the cases of eclampsia, and albumin in considerable quantity has been demonstrated in the urine of 84% of women during the convulsion. A diminution in the excretion of urea is, however, the most important preeclamptic signal, and positively indicates kidney inadequacy; a fall to 1.5% is always dangerous. [C.A.O.]

3.—**A case of *Bacillus coli* infection** is reported by A. Jacoby. The case is of particular interest on account of the fact that it resembled typhoid fever so closely. So much so was this noticeable that it was only the negative reports of Widal's reaction and the presence of *Bacillus coli communis* in large numbers in the urine that enabled a positive diagnosis to be made. [C.A.O.]

4.—**Surgical Treatment of Empyema.**—Frank McMorro reports a case of empyema in a girl of 7, in which a piece of the seventh rib about two inches long in the axillary line on the left side was resected and a Wilson empyema tube inserted. An uninterrupted recovery followed. [C.A.O.]

5.—**A case of fatal meningitis with myosis and salivary suppression as the only symptom** is reported in full by H. Altshul, his patient being a man of 53. Full autopsy findings are added. From a consideration of all the features in

the case the author concludes: 1. That extensive meningitis can exist without giving rise to its characteristic and usual symptoms. 2. That sepsis does not always cause changes in pulse and temperature, and that their being normal does not warrant our excluding this condition. 3. That a spasmodic and complete occlusion of the ureter, which is not due to impaction of renal calculi, may last for some time and thus prevent the detection of extensive pyonephrosis. 4. That myosis and salivary suppression may be the first symptoms of meningitis or myelitis. [C.A.O.]

6.—**Sarcoma of the Femur.**—A case of sarcoma of the femur following traumatism in a woman of 18 is reported by G. S. Brown. Wyeth's method of hemostasis was employed and was entirely successful. Uninterrupted recovery followed. [C.A.O.]

7.—**Surgical Treatment of Ascites.**—L. W. Pearson reports a case of hypertrophic hepatic cirrhosis in a man of 30 in which Thalma's operation was performed. The patient died at the end of the second day. The author has reviewed the literature of the subject thoroughly and gives a number of important references. [C.A.O.]

8.—**An operation in a case of extradural hemorrhage, the result of whoopingcough,** is reported by G. S. Brown in a boy of 7. In course of time severe headache, somnolence, semidelirium, slow pulse, and fever came on after severe paroxysms of coughing. Later, convulsions ensued. A diagnosis of clot in the right cortical motor area was made, but on opening the skull no clot was found. The dura was then opened. Two days later convulsions returned and the wound was opened up. A button of bone higher up was removed and the dura again opened, but with the same negative result; but on cutting away a small corner of bone from the last trephine wound a small clot was found the size of a white bean. This was removed, and in two weeks the boy was well. [C.A.O.]

Medical News.

May 2, 1903. [Vol. 82, No. 18.]

1. Indications for Extirpation of the Gallbladder. MAURICE H. RICHARDSON.
2. Some Practical Points in Anatomy of the Gallbladder Region. GEORGE EMERSON BREWER.
3. The Diagnosis of Gallstones. J. B. MURPHY.
4. The Mortality in Appendicitis: Its Cause and Limitation. A. J. OCHSNER.
5. Prompt Operation in the Beginning of the Attack Will Save Nearly All Cases of Appendicitis. A. C. BERNAYS.

1.—See *American Medicine*, Vol. IV, No. 21, p. 804.

2.—**Practical Points in the Anatomy of Gallbladder Surgery.**—G. E. Brewer, of New York, gives a number of points more interesting than practical with reference to the anatomy of the gallbladder and the region in which it is situated. He states that the important points in the anatomy of the region for the surgeon are: 1. A knowledge of the position of the nerve-trunks of the abdominal wall. 2. A knowledge of the normal position, size, shape, and relations of the gallbladder and ducts, their blood supply, and the normal position of certain constant lymph-nodes. 3. The most frequent variation from the normal in these structures, both congenital and acquired. 4. Variations in the arrangements in the blood supply of the liver and gallbladder. 5. The relations of the duodenal orifice of the common bile duct. 6. Anatomy of the entire hepatic peritoneal basin. The writer then proceeds to give in some detail various findings which he has discovered either anomalous in character or normal, which differ from the teachings in the ordinary works on anatomy. For instance, he states that from 100 measurements of the gallbladder 9 may be classed as simply measuring 6 cm. or less; while 12 were large, measuring 12 cm. The lengths of the remaining 79 were between these two measurements, the average length being 10 cm. Considerable attention is given to the arterial supply of the gallbladder and the neighboring structures. So many points with reference to the subject matter are considered that the article does not lend itself well to abstracting. [A.B.C.]

3.—Diagnosis of Gallstones.—J. B. Murphy states that with experience in 334 cases of gallbladder and liver disease he classes pain as: 1. The acute, inflammatory or infective type, which occurs in virulent infections and is accompanied by muscular contraction of the organ or tissue in which it is situated. 2. The aching, cumulative or tension type, which is not guarded by abdominal tension. The most characteristic reaction in this type of pain is that elicited by pressure between the right costal arch. 3. The referred ache or pain which accompanies either of the preceding types. Colic is used in connection with gallstones as entirely different in significance from the term pain. Colic is due to a foreign body in transit through the ducts. It is absent in two conditions: (1) When the foreign body is too large to be grasped by the canal, as in the case of stones over $1\frac{1}{2}$ inches in diameter, and (2) when they are too small to produce spasm of the duct in their passage. The nausea and emesis of biliary obstruction are reflex symptoms. Of the patients operated upon by the author jaundice was absent in 86%. Jaundice due to gallstones is always preceded by colic. Jaundice due to malignant disease or catarrh of the ducts accompanied by infection is never preceded by colic. According to von Recklinghausen, gallstones exist in 12.2% of individuals. This was ascertained after many necropsies and in the dissecting-room. A number of cases are reported by the author. [A.B.C.]

4.—The Mortality in Appendicitis.—A. J. Ochsner states that the mortality resulting from the extension of infection from the appendix to the peritoneum may be prevented by early removal of the appendix. Extension of the infection is produced by a peristaltic action of the small intestine. This can be prevented by limiting peristalsis. In case neither food nor cathartics are given from the beginning of an attack of acute appendicitis, and gastric lavage is employed, the mortality is reduced to an extremely low percentage. Patients who have received food and cathartics during the early part of the attack and are consequently suffering from beginning diffused peritonitis, will still exhibit a mortality rate of less than 4%. Measures to limit peristalsis are instituted. In this way dangerous acute appendicitis may be changed into relatively harmless chronic appendicitis. In his personal experience no case of acute appendicitis has terminated fatally in which absolutely no food of any account and no cathartics were given by the mouth from the beginning of the attack. Were peristalsis inhibited in every case of acute appendicitis by the methods described, appendectomy during any portion of the attack could be done with much greater safety. He makes the following suggestions for the treatment of appendicitis with a view of reducing mortality: In chronic cases operation should be done in the interval; in acute cases operation should be done so soon as diagnosis is made, provided the acute infectious material is still confined to the appendix. In case of acute appendicitis, regardless of the treatment contemplated, food and cathartics by the mouth should be interdicted. Employ gastric lavage for the nausea, vomiting, or gaseous distention. If no operation is performed, neither nourishment nor cathartics should be given by the mouth for at least four days after the pain has ceased. Water by the mouth should be interdicted early. The slightest amount of food given by the mouth may set up peristalsis and increase the danger. The most convenient form of rectal feeding consists in 1 oz. of concentrated, liquid, predigested food, dissolved in 3 oz. of warm normal salt solution. [A.B.C.]

5.—Early Operation in Appendicitis.—A. C. Bernays states that the mortality of operation during an acute attack of appendicitis will be from 4% to 20%. His own mortality in the last 100 cases was 3; in 566 patients operated upon during the last 15 years is 9.5%. Operations done during the first 48 hours are easier, more complete than later operation, and the results are more satisfactory. He concludes that the question of appendicitis can be scientifically solved when we have advanced far enough to compare the similar stages and the similar pathologic conditions with each other and cease trying to solve the many-sided problem as an undivided whole. He advises early operation. [A.B.C.]

Philadelphia Medical Journal.

May 2, 1903. [Vol. XI, No. 18.]

1. A Case of Perforated Ulcer in Typhoid Fever. JAMES C. WILSON and GEORGE G. ROSS.
2. Report of a Case of Painless Amputation of the Leg After the Intra-neural Injection of Cocain. JOHN H. GIBBON.
3. Practical Points on Pessaries, Many Old, Some New. ERNEST GALLANT.
4. The Radical Cure of Inguinal Hernia in Infants and Young Children. CHARLES GREENE CUMSTON.
5. The Paradoxical Reaction of the Pupil in Accommodation, with a Report of Three Cases. WILLIAM G. SPILLER.
6. A Study of Brain-weights of Men Notable in the Professions, Arts and Sciences. EDWARD ANTHONY SPTZKA.
7. A Case of Endothelioma Occurring Within the Nasal Fossa. WM. HITSCHLER and GEO. B. WOOD.

1.—Perforated Ulcer in Typhoid Fever.—James C. Wilson and George G. Ross detail the case of a machinist of 29, in whom a perforation about $\frac{1}{8}$ inch in diameter occurred on the twentieth day of the disease. From 18 to 20 hours prior to the probable time of perforation the patient became extremely nervous and restless and perspired very freely. The initial pain of the perforation was referred to the penis and persisted there for 12 hours without being referred to the abdomen. Collapse was not present. The temperature remained high, 104° F., and there was no syncope, vomiting, nor sweating or pain in the abdomen. The delay in making the diagnosis was unavoidable. There was difficulty in obtaining the family's consent to operate resulting in a loss of five hours of valuable time. Death occurred three hours subsequent to operation from general purulent peritonitis. [F.C.H.]

2.—Painless Amputation of the Leg.—John H. Gibbon reports a case of painless amputation of the leg after the intra-neural injection of cocain. The patient was a man of 50, suffering from far advanced tuberculous disease of the ankle-joint and bones of the tarsus. Because of the man's age, his general condition, and the extent of the disease, it was deemed wise to consider only amputation. Fifteen minutes before beginning the operation the patient was given morphin $\frac{1}{4}$ gr. and atropin $\frac{1}{16}$ gr. hypodermically. The sciatic and anterior crural nerves were then exposed by infiltration anesthesia (Schleich's fluid), and injected with a 1% cocain solution. There was a total absence of pain during the operation. The technic followed is that described by Matas. The cocain solution must be pure and fresh and the technic perfect in order that it may give good results. [F.C.H.]

3.—Pessaries.—A. E. Gallant details the usual indications and counterindications for the employment of the pessary. For virgins, after manual dilation under anesthesia, in nulliparous and married women, he prefers the Hodge or Albert-Smith pessary for all purposes. A certain percentage of post-partum displacements may be obviated by the use of the sterile gauze tampons for one or two weeks after the uterus has involuted down to the pelvic brim, thus compelling that organ to resume its natural position, and often, after this treatment and the wearing of a pessary for two or three months, the patient is practically cured of her old displacement. [F.C.H.]

4.—The Radical Cure of Inguinal Hernia in Infants and Young Children.—C. G. Cumston concludes as follows: Experience has demonstrated the innocuity of radical operation for hernia in infants; the operation is indicated in all cases of strangulation, in cases in which the contents of the sac cannot be retained by a truss, and in every case in which irritation of the skin is produced by the mechanical appliance, and in children of the poor who cannot receive the necessary attention at their homes. [F.C.H.]

5.—The Paradoxical Reaction of the Pupil in Accommodation.—W. G. Spiller details three cases of the paradoxical reaction of the pupil in accommodation. This phenomenon is not the same as the better known paradoxical reaction to light, in which the pupil becomes larger when the eye is exposed to light. [F.C.H.]

7.—Endothelioma Occurring Within the Nasal Fossa.—Wm. Hitschler and George B. Wood detail the case of a man of 44, in which a microscopic examination of a piece of tissue spontaneously ejected from the nose showed that the growth was a typical endothelioma. The patient refused operation. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

EDITORIAL COMMENT

The Virulence of Tubercle Bacilli Cultivated from Different Tuberculous Foci in Man.—What are the causes of the differences between the behavior of tuberculosis of the lymph-glands, of the skin, and of the bones, and that of tuberculosis of the lungs? Clinically, the first three are slow in course; and there is little tendency for them to become generalized. Three theories suggest themselves in explanation: (1) A difference in the virulence of the bacilli; (2) a difference in their number; and (3) a difference in the resistance of the tissues. In the early bacteriologic era succeeding the discovery of the tubercle bacillus, in what Hüppe calls the orthodox period of bacteriology, the influence of the soil was disregarded, and the course of tuberculosis was made entirely dependent upon the virulence and the number of the bacteria. At the present day, however, there is no longer any doubt as to the important part played by tissue-resistance; and the question arises whether, in addition to this, the factor of varying virulence has a role in causing the clinical differences between tuberculosis of the lungs and the other forms of tuberculosis mentioned. E. Krompecher and K. Zimmermann¹ have made this question the object of study. Hitherto all investigators, with the exception of Vagedes, in studying the relative virulence of stocks of tubercle bacilli, have inoculated animals with the material containing the bacilli, and have tested the virulence with cultures obtained from the experimental animals. It is well known, however, and is again shown by Krompecher and Zimmermann, that by this passage the virulence of the bacilli is modified; and when rabbits are used it is distinctly enhanced. The only way in which to obtain an accurate idea of the native virulence is to cultivate the bacilli from the human body directly upon artificial media; and then, using identical quantities, to test the virulence on experimental animals. Krompecher and Zimmermann have cultivated the bacilli on glycerinated potatoes. The potatoes were first prepared in the ordinary way, and then softened in 5% glycerin, and placed in the customary test-tubes containing 5% glycerin water below the constriction. From two to three oesefuls of material were spread upon the potato, two such cultures being made in every case. Within from five to seven weeks the cultures were of sufficient development to permit of their being used for inoculation. A total of 30 cases of surgical tuberculosis were studied in this way; and the bacillus was obtained by culture 26 times; 15 times from tuberculous lymph-glands; 9 times from tuberculous arthritis or osteitis, and twice from tuberculous tendovaginitis. In three cases there was mixed infection and the bacillus was rapidly overgrown by the other organism. In one case no culture was obtained, though animal experiments proved the case to be tuberculous. The failure was probably due to the fact that too little material had been used to inoculate the potato. The authors are convinced that the culture method is as good as that of animal inoculation for demonstrating tubercle bacilli, if not better. When the bacilli are few they will still be shown on the potato, while they may be destroyed in the animal body by the antagonistic juices. Colonies are visible to the naked eye as early as the twenty-third day. Occasionally the cultures are colored; this is probably dependent on different degrees of alkalinity or acidity in the medium. To come now to the point at issue, viz., the relative virulence of bacilli cultivated from different forms of tuberculosis—Krompecher and Zimmermann, utilizing the results of Vagedes, who worked with

bacilli cultivated from pulmonary tuberculosis—have come to the conclusion that there is no difference in the virulence of these bacilli. The bacilli from cases of surgical tuberculosis proved to be as virulent for rabbits as did the bacilli cultivated from the lungs by Vagedes. The authors point out the fact that experimental animals (in their cases rabbits) do not all react alike to injections of identical doses, a fact that must be taken into account in making experiments. Inasmuch as there is no noteworthy difference in the virulence of tubercle bacilli from the lesions of surgical and of pulmonary tuberculosis the conclusion is that the differences in behavior must depend upon differences in tissue-resistance or susceptibility.

REVIEW OF LITERATURE

"False Cardiacs."—Under this title E. Barié¹ includes those patients who complain of cardiac symptoms without having any demonstrable pathologic condition of the heart. The author describes several cases, illustrating various types. The symptom complained of most frequently is palpitation, although in a great many cases various kinds of precordial pain and distress are experienced. The patients are usually adults or adolescents, and are either dyspeptics, smokers, neuropaths, or victims of incipient tuberculosis. In dyspeptics the symptoms come on after eating, and may reach the severity of an intense orthopnea, with cold extremities, cyanosis, physical signs of dilated right heart, and even a temporary tricuspid insufficiency. These cardiac phenomena are brought about through a spasmodic contraction of the capillaries in the lungs, causing a sudden rise in the blood-pressure in the pulmonary arteries. The capillary spasm is produced reflexly through the sympathetic system by irritation of the gastric mucous membrane. Palpitation of the heart may be one of the first symptoms of pulmonary tuberculosis. The cardiac symptoms may be due to a dyspeptic condition frequent in incipient pulmonary tuberculosis, or to cardiac complications, or to reflex action. In adolescents palpitation may occur as a result of chlorosis, exophthalmic goiter, or the so-called pseudohypertrophy of growth. In the latter condition there exists a disproportion between a normally developed heart and an incompletely developed thorax. Barié also includes under the head of false cardiacs pseudoangina pectoris, and the palpitations occurring at puberty, the menopause, in affections of the uterus and adnexa, in gout, diabetes, and other diathesis. [B.K.]

Sitzbaths, Their Physiologic Action and Indications.—The short, cold sitzbath (50–60° F. for 3–5 minutes) is indicated in the weakness of the male sexual organs, in scanty menstruation and amenorrhea, in leukorrhea the result of anemia, in atony of the uterus, chronic constipation and intestinal distention, gastric dilation and motor insufficiency, paresis of the muscles of the bladder and rectum, and in congestion of the various organs of the body. They are contraindicated in acute inflammations of the abdominal, pelvic, and sexual organs. Cold sitzbaths of longer duration (50–66° F. for 5–30 minutes) may be used in instances of hemorrhage and inflammation of abdominal and pelvic organs, in chronic diarrhea and dysentery. They are contraindicated when there is colicky pain of the abdomen, vesical catarrh, and tenesmus. The temperate sitzbath (beginning with 88° F. and gradually lowering to 65° F. for from 5–20 minutes) is indicated in inflammation of the pelvic organs, urethra, rectum, hemorrhoids, vesical catarrh, nervous dyspepsia, sexual and other neurasthenia, sleeplessness. The warm sitzbath (90–102° F. for 30 minutes and more) are useful for colicky attacks and cramps of the pelvic and sexual organs, frequent pollutions, inflammatory exudates. A combination of hot sitzbath followed by cold may be ordered in amenorrhea and weakness of sexual organs. B. Tschlenoff² discusses their physiologic action at some length, but states that our knowledge of this is purely hypothetical. He gives some excellent advice regarding the details of procedure in each variety of bath. [E.L.]

The Knock-out Blow on the Point of the Jaw.—J. C.

¹ *Centralb. f. Bacteriol., Parasitenk. u. Infektionskrank.*, Originale, Bd. xxxiii, No. 8.

¹ *La Semaine Médicale*, February 11, 1903.

² *Korrespondenz Blatt für Schweitzer Ärzte*, November 1, 1902.

Duncanson¹ states that this point of jaw is situated on either side of the symphysis menti, and corresponds nearly with the mental fossa. If a line is drawn on the skull from this point to the center of the odontoid process as the axis, which is the chief center for rotation of the head, it will be seen what a powerful lever there is to turn the head in any direction. The attachments and feebleness of the muscles for rotation prevent much resistance being offered. The blow must be dealt hard and sharp, but weight is not necessary. It is delivered more or less at right angles to the anterior posterior plane of the body and slightly upward; hence the head is jerked around suddenly to the full degree of rotation, and is likewise thrown backward. Such a blow, while it may not be so very powerful, is sufficient to knock down a very strong man, and is the one especially sought to be inflicted by the pugilist upon his antagonist. It is almost never fatal. An after-examination of the victim shows the heart's action to be excited only in a minor degree, respiration good, pulse normal, and there is practically no shock or concussion. [A.B.C.]

Desquamative Obliterating Pneumonia.—In this form of pneumonia desquamation of the alveolar epithelium is the principal feature, fibrin and leukocytes taking small part in the exudate. F. Galdi² reports such a case, with autopsy findings, in which the alveoli of both lungs were found to be filled with swollen and fatty degenerated epithelial cells. The alveolar walls were thickened and contained distended capillaries. The thickening was due to connective tissue, which sent trabeculae into the lumen of the alveoli. There was considerable round cell infiltration. The inflammatory process evidently started in the small bronchi and bronchioles, and extended to the lung parenchyma, progressing from the upper lobes to the lower in the form of a lobular infiltrate. Desquamative pneumonia in general cannot be considered as a separate disease, since more or less extensive desquamation occurs in various pneumonic processes. The obliterating, lobular, desquamative pneumonia, of which this case is an example, is distinguished from other pneumonias by its diffuse and progressive character, the widespread epithelial desquamation, the connective tissue increase in the alveoli, and the absence of fibrin. [B.K.]

Cardiac Hypertrophy in Diseases of the Kidney.—The relationship existing between cardiac hypertrophy and diseases of the kidney has never been satisfactorily explained, and it is only within the last few years that undeniable evidence has been produced, proving that it is usually the left ventricle which is hypertrophied, even though both ventricles are enlarged. H. Senator³ reviews the various theories by means of which this hypertrophy has been explained at different times, and after showing the weak points of Traube's mechanical theory and the theory of increased blood viscosity of Ewald he forms a new one, which is based on work done by Strauss in his clinic during the last few years. In chronic parenchymatous and in acute nephritis the molecular concentration of the blood, the nonalbuminous nitrogen, and the toxicity of the urine remain normal; in chronic interstitial nephritis they are increased. The albuminous nitrogen is decreased in the former, normal in the latter. The increase in the molecular elements of the blood leads to an irritation of the heart and the bloodvessels and injures the bloodvessel walls. In parenchymatous nephritis, on account of the slighter degree of this injury, the permeability of the vessel walls is at first increased and edema results. Cardiac hypertrophy rarely occurs during this period, and is slight until the vessel walls are sufficiently thickened, and the lumen of the vessels contracted to prevent exudation. Blood stasis results, and the heart hypertrophies quicker. In the atrophic kidney, the abnormal elements being present in larger quantities, contractions and narrowing of the bloodvessels occur earlier, and the enlargement of the heart is greater and takes place quicker. [E.L.]

Congenital Goiter.—J. T. Hewetson⁴ refers to a case of congenital goiter reported by Ballantyne and two cases reported

by Sir James Y. Simpson in 1855 and Professor A. R. Simpson in 1886. In each instance the mother had been taking potassium chlorate during pregnancy. The author states that congenital goiter generally assumes one of three types: (1) Adenomatous, being perfectly encapsulated tumors, occurring in the substance of the thyroid gland, containing one or more cysts and frequently masses of cartilage; (2) parenchymatous goiter, which is similar in all respects to the same variety seen in adults; (3) vascular goiter, which is probably the most common variety, in which the acini of the tumor remain fetal in character, showing an entire absence of colloid material. Large bloodvessels and widely dilated blood sinuses are present in considerable numbers. Cysts do not appear. Heredity appears to play some part in the causation of congenital goiter. Demme, of Switzerland, reported 642 cases of goiter, 53 of which were congenital, and of these 53, 14 had parents, both of whom suffered from goiter; 23 in which the mother alone had goiter and 16 in which neither immediate parent suffered from this affection. The male child is more prone to congenital goiter than the female. Many are born prematurely, and of those that survive birth the great majority die from mechanical pressure of the developing goiter. The severe forms call for operation and are dealt with as is goiter in the adult. The case reported by the author was the seventh child, born at the seventh month of gestation, and when the mother was 32. All the previous fetuses had been born dead, or at least no child had survived more than a few hours. The mother had never taken anti-syphilitic treatment until during this gestation, when she was given potassium chlorate and potassium iodid daily for a considerable time. When the child was delivered it was noticed that it had a large goiter. Both lobes were involved and were about symmetric. When removed from the dead fetus and examined microscopically it was found to conform to the vascular type described above. [A.B.C.]

Acute Purulent Strumitis.—Inflammations of the normal thyroid gland occur very rarely; on the other hand, the strumous gland is likely to develop inflammatory complications. These remain as yet obscure in etiology, and the clinical picture itself is far from being definitely established. Hence the necessity of new clinical reports. A. A. Abrajano¹ has observed acute suppurative strumitis in a woman of 54. A week before she had drunk cold water after a hot vapor bath, and the next day was seized with difficult breathing. A painful swelling appeared over the throat and increased rapidly in size. Fever and sweats, dysphagia, increasing dyspnea, cyanosis, finally stenotic noisy breathing followed. Suffocative seizures threatened her life. While preparing for an operation she suddenly gasped for air, became unconscious, and stopped breathing. Some 30 seconds passed before an incision could be made. A plunge of the scalpel brought abundant pus, and artificial respiration soon restored the patient. Breathing became free and easy. Intestinal gurgling was the last symptom of CO₂ poisoning. The abscess was found to have been located in the thyroid gland, about 1 cm. below its surface. A complete recovery took place in 20 days. [L.J.]

Heart Disease in Children.—J. Cassel² gives an analysis of 107 cases of heart disease in children; 26 of these were congenital. Cyanosis is the most characteristic symptom of this class; it occurred in 65% of the 26 cases. Clubbed fingers are also characteristic, and were found in 9 patients. Murmurs in congenital heart disease are always systolic; they were found in only 80%; 11 patients showed enlargement of the heart. Under-development with anemia was seen in 5 cases. In the patients with acquired heart disease articular rheumatism was the cause in 62%. Out of 75 cases of rheumatism observed by the author, 51 were complicated with endocarditis. Out of 38 patients with chorea 15 had rheumatism, and of these 9 also had endocarditis. The author has never been able to demonstrate gonorrhoea as a cause of heart disease in childhood, although he has observed 82 cases of precocious venereal disease. Scarlatina caused valvular lesions in 4 cases, and diphtheria in 1 case. In 18 patients no cause could be determined. Mitral insufficiency was diagnosed in 58 cases, mitral stenosis in 12, and

¹ British Medical Journal, April 4, 1903.

² Deut. Archiv für klin. Med., Bd. lxxv, p. 239.

³ Deutsche medicinische Wochenschrift, January 1, 1903.

⁴ British Medical Journal, March 21, 1903.

¹ Chirurgia, February, 1903.

² Zeitschrift f. klin. Med., Bd. xlviii, p. 389.

both in 3 cases. Aortic insufficiency occurred 3 times, and stenosis once. Serous pleurisy complicated the heart disease in 7 cases, and cerebral hemiplegia in 3. Three cures are claimed, all symptoms and physical signs having disappeared. [B.K.]

Diagnostic Importance of Leukocytes in Typhoid Fever and Surgical Suppurations.—Diminution in the number of leukocytes is one of the earliest and constant signs in uncomplicated typhoid fever, occurring in 92% of Kühn's¹ cases. Ten cases studied from the very onset of the disease presented leukopenia about the fourth day. The other symptoms and signs—Widal, diazo, roseola, splenic tumor, etc.—usually came later. The number of leukocytes usually varied between 2,000 and 5,000. Leukocytosis is occasionally noted when there are complicating conditions. The only diseases which at times present the same blood-picture are malignant septicemia and miliary tuberculosis, but in both of them is leukopenia as rare as it is common in typhoid fever. He publishes his leukocyte observations in 33 cases of various diagnoses, and finds that the number of leukocytes is important not only in diagnosing appendiceal suppurations, but also for other surgical diseases, inflammations, and suppurations. Absence of hyperleukocytosis usually indicates nonsupuration, but even a diminution in the white corpuscles may occur in grave septic conditions or general infections. In chronic suppurations leukocytosis is less marked, and in fully developed, and particularly in encapsulated abscesses, it may again be absent. He cites a number of interesting cases to illustrate his conclusions. [E.L.]

Six Cases of Goiter.—E. M. Payne² believes that goiter is much more common in England than is generally supposed. He reports six cases. The first was in a woman of 38, who at 3 years of age had an abscess in the region of the thyroid, which healed leaving a small tumor the size of a pea. At 8 years this had grown to the size of an egg and at 12 the other side of the neck became involved. Some treatment for the condition was instituted when she was 14. This failing to give relief all treatment was abandoned. The tumor-mass has become exceedingly large, pendulous, and extends down to a level with the nipples. The patient is bright and cheerful and shows no mental weakness. Thyroid extract was tried without avail. The other cases are without particular interest except that all showed marked improvement on the administration of thyroid extract; three of the cases showed a strumous family history, and a like number gave a family history of goiter, two of the latter were of the three showing a strumous family history, two showed marked cardiac complications and one was considered an instance of acute myxedema, which the author considers rare. In no instance were there any marked mental symptoms. [A.B.C.]

Blood Changes in Syphilitics Undergoing Treatment.—W. Ossendowski³ gives the following conclusions: (1) Hemoglobin is diminished during the secondary and still more diminished during the tertiary stage; (2) under the influence of treatment the percentage of hemoglobin increases. The most marked increase follows intramuscular injections of insoluble mercurial salts, the least marked is brought about by internal administration of mercury. Potassium iodid causes a higher rise than mercurial inunctions; (3) red corpuscles show a decrease in number during the secondary period and rise to normal toward the tertiary. Treatment with mercury always causes a numerical increase of red cells up to normal. Hypodermic injections have the most marked effect, next come inunctions and intramuscular injections, while internal administration again ranks last; (5) the number of white corpuscles is about normal until the gummatous period is reached, when it is increased. Under mercurial treatment this number falls to normal or even below that, the lowest level being due to hypodermic injections; (6) the ratio of white to red cells remains near normal throughout, irrespective of treatment; (7) bodily weight rises under all usual forms of treatment. [L.J.]

Suppuration of the Lacrimal Duct in the Newborn.

¹ Münchener medicinische Wochenschrift, December 9 and 16, 1902.
² British Medical Journal, March 21, 1903.
³ Dissertation, Dorpat.

—According to E. Heimann¹ this condition is easily diagnosed by making pressure over the duct, when pus will exude from the opening. It is probably due to a stasis of the tears, the result of an atresia of the duct at some point; the stasis produces the dacryocystitis. The treatment consists of massage of the duct, followed if necessary by dilations with a probe. [E.L.]

Lead-poisoning and Epilepsy.—W. C. Gill's² case is that of a man 34 years of age admitted into the Ohio Hospital for Epileptics on account of dementia following a number of epileptic seizures. The patient had worked as a painter and had had painters' colic and lead palsy, the latter being still present when he was admitted into the hospital. As there was a vague history of former epileptic attacks and a family history of epilepsy the case could not be considered genuine saturnine epilepsy. Lead palsy is a very rare cause of epilepsy. Out of 2,175 cases of epilepsy admitted into the Ohio Hospital lead-poisoning was given as the cause of the disease in only two, and in one of these it was but a remote cause. Gill agrees with Gowers in the belief that lead-poisoning plays only a small part in the production of epilepsy, but that plumbism in an adult renders epileptic attacks more severe. [D.R.]

Severe Pneumococcal Infection.—A case of pneumococcal infection which caused an acute glossitis, arthritis, double pneumonia, and double empyema is reported by N. Raw.³ The patient was a woman of 41, who was seized with an acute glossitis. Three days later pneumonia of the left base developed, followed in eight days by pneumonia of the right base and suppurative arthritis of the left temporomandibular articulation. Bilateral empyema later developed. The woman was then in such condition that extreme measures were demanded, and both sides of the chest were opened and drainage tubes inserted. Improvement rapidly took place. The pneumococcus was found in the pus in each instance. During the course of the pneumonia 2 drams of paraldehyd were given each night with excellent effect. Raw thinks there is no better hypnotic for pneumonia patients, the great advantage of the drug being perfect safety. [A.G.E.]

"Wheat Coffee."—Weissmann⁴ reports eight cases of poisoning in one family, which was traced to "wheat coffee." It was found that the artificial coffee contained in addition to wheat-flour, flour made of *Agrostemma Githago*, which contains the poisonous alkaloid *Agrostemmin*. One of the patients died. [E.L.]

Chronic Acromegaly.—C. H. Cattle⁵ reports the case of an unmarried woman of 30, who was first seen in 1902. Her health had become impaired four years previously. The patient's family history was negative. She had gradually become worse, and her most prominent symptoms were violent paroxysmal attacks of headache, sometimes accompanied by vomiting, pains in the joints, and gradually increasing debility. Menstruation had become scant and finally ceased. She formerly wore a No. 4 shoe, but at the time of observation required a No. 6. When she came under observation her head was massive in appearance, elongated, the nose was broadened, the lips thick, the hands enlarged, the fingers broad and flattened. The feet were likewise enlarged to the size of those of a man of more than average height and strength. The skin was muddy and pigmented and the thyroid gland was uniformly enlarged. The pulse was 120. The eyeballs were prominent, but von Graefe's sign was absent. The author states that although enlargement of the thyroid is somewhat common in acromegaly its association in this case with a quick pulse, prominent eyeballs, and pigmentation, seems to suggest a relationship between this and Graves' disease. He has had the patient under observation for seven months, during which time there has been comparatively little change, but such as occurred has been merely to augment the classic signs of acromegaly. [A.B.C.]

Artificial Feeding of Infants.—F. Szontagh⁶ reports the studies of metabolism, each extending over four days, in a nursing given equal parts of whey and milk. All the organic ele-

¹ Deutsche medicinische Wochenschrift, January 29, 1903.

² Cleveland Medical Journal, March, 1903.

³ The Practitioner, April, 1903.

⁴ Deutsche medicinische Wochenschrift, January 1, 1903.

⁵ British Medical Journal, April 11, 1903.

⁶ Jahrbuch für Kinderheilkunde, 1902, Vol. lvi, p. 341.

ments were well assimilated (from 95% to 96%); fat, albumin and sugar were equally well taken up; lime, on the other hand, was not well absorbed, only from 11% to 15%. The child thrived for four months, then, on account of beginning cranio tabes and convulsions, the child was put on cow's milk. The nutritional improvement continued, the convulsions ceased, and the rachitis did not develop any further. Szontagh sees an accidental coincidence in the simultaneous occurrence of the cranio tabes and eclampsia. [E.L.]

The Relations of the Acid-proof Saprophytes to the Tubercle Bacilli.—F. Klemperer¹ has investigated the question whether animals may be immunized against the tubercle bacillus by inoculations with the acid-proof saprophytes. His experiments were made with guineapigs, by injecting cultures of grass, milk, and butter bacilli, in gradually increasing doses, and after varying periods of time inoculating them with tubercle bacilli. The results of his experiments show that inoculations of these acid-proof organisms have a weakening and limiting effect on the tuberculous infection. The conclusion may be drawn that the acid-proof saprophytes are closely related to the tubercle bacilli. Their differences in virulence and methods of growth are not fundamental, but are merely due to adaptation to various environments. At any rate, they are not greater than the differences between the tubercle bacilli of mammals and those of birds and cold-blooded animals. It is probable that all these organisms are phylogenetically related, and form a continuous line of evolution from the acid-proof saprophytes, through the tubercle bacilli of cold-blooded animals and birds, up to the human and bovine bacilli. The course of evolution has been marked by an increasing selectivity of culture media and temperature of growth, by a decreasing rapidity of growth, and by an increasing virulence. The tubercle bacillus may thus be regarded as an acid-proof saprophyte that has become parasitic. [B.K.]

Cheyne-Stokes Breathing in Acute Disease.—The occurrence of Cheyne-Stokes breathing during an attack of erysipelas is reported by H. C. Mabley.² As the patient was 68 years of age, and had pus, albumin, and a trace of sugar in the urine, the possibility of autotoxemia having been a factor should be considered. The author collects from the literature cases of Cheyne-Stokes breathing in scarlet fever and in typhoid. [D.R.]

Chronic Joint Disease in Children as Described by Still.—F. P. Weber³ reports the case. The patient, a boy, had a definite attack of articular rheumatism in April, 1902, preceded by an attack of endocarditis, accompanied by a lesion of the mitral valve in November, 1901. In the attack of articular rheumatism the knee-joints and elbow-joints, the articulations of the hands and thigh were all swollen and stiff, as was likewise the case with the spinal vertebra articulations of the cervical region. The spleen and liver were enlarged and extended below the ribs, the lymphatic glands in the neck, axillas, and groins were moderately enlarged; the cardiac apex beat was 1 inch outside the nipple line and there was a systolic murmur heard at the base. The patient was kept under observation until March, 1903, at which time the report was made, when it appears that all of his joints had become normal with the exception of a crackling in the knees. His head could be moved freely and the rigidity of the upper spinal column had entirely disappeared; the lymphatic glands could nowhere be palpated; the spleen was still slightly enlarged: in the heart there had been no material change. This case appears to show that rheumatoid articular affection in children as characterized by Still is sometimes practically recovered from so far as the joints and glands of the body are concerned. The damage to the heart is of course irreparable. The author considers that probably the most important part of the treatment consisted in keeping the child away from the insanitary and unhygienic conditions of his home since the original attack of endocarditis. [A.B.C.]

Bacteriology of the Blood in Typhoid Fever.—E. H. Ruediger⁴ gives the results of bacteriologic examination of

the blood in 30 cases of clinical typhoid fever. In 20 cases bacilli were found, and of these two were of the paratyphoid variety and one was doubtful, the remaining 17 being true typhoid bacilli. In each case the organisms were found while the temperature curve of the patient was still rising. Two flasks of bouillon, containing 100 cc. each, were inoculated with 10 to 15 drops of blood, the blood being obtained by puncture. Ruediger concludes that blood cultures are the best means of making a positive diagnosis of typhoid, provided that method is applied early while the temperature is still rising. [A.G.E.]

A Case of Leukemia in a Child.—This case, occurring in a boy of 6½ years, is reported by T. N. Nikolsky.¹ A month before his admission to the hospital the boy suffered from follicular tonsillitis and malaria. In spite of quinin and arsenic he grew steadily worse. Great pallor of skin and mucous membranes, and enlarged cervical, axillary and inguinal glands were noted. Thyroid gland normal. Liver and spleen considerably enlarged. General hyperesthesia noticeable. Blood of chocolate color, containing 1,500,000 red and 80,000 white cells to the cubic millimeter. Hemoglobin was 42%. Severe bleeding from the nose, bloody vomiting, a hemorrhagic petechial rash, and fever experienced, ending in death. [L.J.]

Suprarenal Diabetes.—F. Blum² has found that the adrenal gland contains a substance which, when entering the circulatory stream, is capable of producing glycosuria. When adrenal glands are fed to dogs by mouth, even in large quantities, nothing but gastric disturbances are noted, but if injected subcutaneously or intravenously in doses not too small the invariable result, even if the diet is free of carbohydrates, is sugar in the urine. His experiments include 22 dogs and 3 rabbits, and inasmuch as the diabetic state was noted in all of these Blum feels justified in stating that the adrenal substance will produce the disease in all mammalia; he also feels justified in speaking of an adrenal gland diabetes. [E.L.]

The Influence of Antiseptics on the Quantity of Bacteria in the Intestines.—J. Strasburger³ has found by clinical observation and animal experimentation that it is useless to attempt intestinal antiseptics by the administration of drugs. A slight decrease in bacterial growth may at first occur, especially in the small intestine. But this is soon followed by an increase, owing to interference with the natural protective powers of the bowel. The bacteria of the bowel are for several reasons necessary for the wellbeing of the organism; and a rational antiseptics should have in view the holding of the number and kind of bacteria within normal bounds. Purgatives are the most effective antiseptics, as they remove the culture-media upon which the bacteria flourish. But even here there is the danger of interfering with normal functions, as is shown by an increase in the bacteria some time after their administration. The best way to accomplish a practical intestinal antiseptics is by producing a normal condition of the intestines themselves, and by administering food that is easily and rapidly digested. [B.K.]

The Practical Application of the Determination of the Freezing Point of Blood and Urine in Diseases of the Kidneys.—O. Rumpel⁴ discusses the theory and method of cryoscopy. It depends upon the constancy of the osmotic concentration of the blood in normal renal activity and an increase of this concentration in diseases of the kidney. As the concentration of the blood increases, the urinary concentration decreases, due to the fact that when the kidneys functionate normally all of the nitrogenous molecules are excreted with the urine; when their function is disturbed some of these substances are retained. The great constancy of the osmotic concentration of the blood makes the determination of the freezing point a very accurate and important physical method of examination. Two frequent errors must be guarded against in the examination: The thermometer must be completely submerged in the fluid being examined but must not touch the bottom of the vessel, and the fluid must be stirred with the platinum rod until the mercury begins to fall after its primary rise, as the highest point which the thermometer reaches is the freezing

¹ Zeitschrift für klin. Med., Bd. xlviii, p. 250.

² Cleveland Medical Journal, April, 1903.

³ British Medical Journal, March 28, 1903.

⁴ Medicine, April, 1903.

¹ Detskaja Medicina, 1903, No. 1.

² Deutsches Archiv für klinische Medizin, Vol. lxxi, p. 146.

³ Zeitschrift für klin. Med., Bd. xlviii, p. 491.

⁴ Münchener medicinische Wochenschrift, January 6, 13, 20, 1903.

above the ring, and emerges 1.5 cm. ($\frac{3}{8}$ inch) to the upper and outer side of it. Care must be taken to include the transversalis fascia in the sutures. By closing and twisting the sutures, the transversalis muscle and fascia, the internal oblique and aponeurosis of the external oblique are drawn down to cover the inguinal canal. The aponeurosis of the external oblique should now be plaited on itself by a parallel series of catgut sutures, entering and emerging at intervals of 1 cm. ($\frac{3}{8}$ inch). The skin is then sutured. The great advantages of this method are that it is easy of execution, and that the inguinal canal is closed by all the layers of tissue in the abdominal wall, with the production of a thick cicatrix. [B.K.]

Symptomatology and Diagnosis of Brain Tumors, and Chronic Hydrocephalus.—Finkelnburg¹ reports in detail a large number of cases of brain tumor from the standpoint of their symptomatology diagnosis and pathology; also a number of cases in which a wrong diagnosis of brain tumor had been made. Twenty-two of the cases were cerebellar; 27 cerebral and 4 multiple tumors. He finishes his valuable paper with a clinical report of three cases of hydrocephalus, all of which showed the following characteristics: 1. Slow onset and chronic development without distinct initial meningitis. 2. Very slow course extending over years, with considerable fluctuations. 3. Considerable pressure-symptoms at the onset of the disease, which in some cases entirely disappeared, or were followed by optic atrophy. 4. Absence of focal symptoms during the entire course of the disease. 5. Early appearance of visual disturbances and choked disc. 6. Diminution of the knee-jerks. [E.L.]

Surgical Treatment of Cancer of the Rectum.—Sir Charles B. Ball² states that only when the growth is freely movable, or at any rate but slightly invades the perirectal tissue, is it a case suitable for surgical treatment. The route of attack depends entirely upon the situation of the disease; that is, the growth may involve the anal canal only, it may be situated low down in the rectal ampulla, or it may originate high up above the peritoneal reflection, or the entire area which involves all of these points may be involved. There are four routes of attack: The perirenal, the sacral, the vaginal, and the abdominal. Some surgeons prefer to do a previous colotomy in all cases in which the bowel can be sufficiently affected. The writer prefers not to perform this previous operation in many cases. The perirenal route should be adopted only in those cases which involve the anal canal. The sacral route is suitable for those cases in which the cancerous growth is a considerable distance up in the rectum and which cannot, therefore, be successfully attacked by the perirenal route. Kraske's original method has been much modified by various operators, but the principle remains the same—the removal of the coccyx and so much of the sacrum as is necessary to expose and permit free attack of the rectum within. The removal of the coccyx and the transverse division of the sacrum as recommended by Bardenheuer is the one preferred by the author. The diseased portion of the bowel is resected and whether the operator shall form a sacral anus or do an end-to-end anastomosis depends considerably on the operator as well as upon the conditions present. Formerly the sacral anus completed the operation in most cases. The author's earlier cases were so treated. Very frequently now he resects the diseased portion, draws the proximal severed end down, and unites it to the remaining sphincter. End-to-end anastomosis after resection of the diseased portion is very unfavorable for good union on account of mechanical conditions. It is well, therefore, if this method is attempted to commence free saline purgation after the second day. In three cases in which the author attempted to do an end-to-end junction a posterior fistula formed, though a good result was finally obtained. Subsequent operations had to be done to close the fistula. He prefers now to suture only the front and sides of the bowel in the first instance, leaving the posterior portion open, and close this by subsequent plastic operation. One case so treated resulted very satisfactorily. The vaginal route is adopted in those cases in which the posterior vaginal wall is involved in malignant growth. In three cases primary results

were good but recurrence was repeated, as is frequent in these cases. The excision of cancer when confined to the rectal tunic by incision through the healthy posterior vaginal wall has been practised with success by some surgeons. The abdominal route is suited to those cases in which the malignant growth is high up. The author believes that this route has not yet assumed the position in surgery which it will eventually hold. Its advantages are ability of the operator to determine exactly the extent of the disease and the involvement of the lymphatics, easy control of the hemorrhoidal vessels, and prevention of hemorrhage, complete removal of the lymph glands, which are usually involved. Wound-soiling from the escape of intestinal contents can be reduced to a minimum. [A.B.C.]

Four Cases of Snap or Trigger-finger.—These cases are reported by H. L. Barnard.¹ One patient refused operation and one is but 11 months old, too young for operation. This patient is believed to be the youngest of recorded cases. The other two cases were operated upon, and in both there was found a nodule in the tendon that, becoming fixed between the sesamoid bones, caused the peculiar symptoms of the condition under consideration. Resection of the nodule was not thought justifiable, the method adopted being that of dividing the ligament between the two sesamoid bones and leaving the tendon sheath open for about three-fourths inch, the skin being sutured. Passive motion was begun within a week or ten days and perfect recovery followed. Barnard refutes the theory that snap-finger may be produced by contraction of the fibrous arch opposite the metacarpophalangeal joint without any change in the size of the tendon. When operating and synovial fringes are found they should be removed, but when a fibrous nodule is buried in the tendon it is better to make room for its passage up and down by removing a part of the fibrous ring. [A.G.E.]

Extraction of Bullets from the Cranial Cavity.—O. V. Angerer² treats recent bullet wounds of the skull in a purely expectant manner. He disinfects the skin, dusts the wound and surrounding parts with iodoform, and puts over all a sterile dressing. He never attempts to disinfect or probe the wound, as this can only do harm. If the bullet has not entered the skull cavity, or if there is considerable bleeding from the skin wound, this may be enlarged and examined. The only other reason for operating he sees in hemorrhage from the meningeal artery, in pressure symptoms, or some localized lesions of the motor area, characterized by convulsions or headache. He relates two such cases, the first one a case of Jacksonian epilepsy, beginning 10 months after the injury; the second patient complained of headache and pain in right eye 10 days after the accident. This showed choked disc. In both cases the bullets were located with the Röntgen rays and removed. He uses Wagner's osteoplastic method in opening the skull. [E.L.]

Adenoma of the Rectum.—C. B. Ball³ states that he cannot subscribe to the opinion held by a number of pathologists that adenocarcinoma begins essentially as such and never has a simple adenoma. Results of early surgical interference being so very much better than late interference frequently suggests at least that cases of adenocarcinoma frequently begin as pure adenoma and by a transition process instead the epithelial cells penetrate the basement membranes and the tumor thus becomes malignant, forming the adenocarcinoma. Adenoma in children is not infrequent and the close analogy between adenoma of intestinal mucosa and cutaneous warts is marked. There is a tendency in both for the surface to increase by tuberculation and fusion. Origin of an adenoma can often be traced to local irritation. The symptoms of simple adenomas of the rectum when of small size are trivial. If, however, the pedicle becomes sufficiently long to form a "polypus," the tumor becomes congested, surfaces abraded and hemorrhages is a common symptom. Rectal hemorrhage in young children should always arouse the suspicion of adenoma. Another important symptom is the copious discharge of glairy mucus. This is caused by a great increase of the secreting structure showing that the adenomatous tissue of the newgrowth remains functional. Adenomas may be of sufficient size to produce mechanical symptoms by pressure. Treatment consists in the removal of

¹ Deutsche Zeitschrift für Nervenheilkunde, 1902, Vol. xxi, p. 433.

² British Medical Journal, March 7, 1903.

¹ The Practitioner, February, 1903.

² Münchener medizinische Wochenschrift, January 6, 1903.

³ British Medical Journal, February 21, 1903.

the pedunculated forms after ligation of the pedicle. The sessile varieties are to be excised. The use of curet may be necessary in some cases. [A.B.C.]

Spinal Analgesia.—E. D. Martin¹ obtains the best results by using concentrated solutions of cocain. He believes that untoward after symptoms are due to disturbed tension of the spinal fluid, and, perhaps, to some extent by the position of the patient, gravity allowing the solution to reach the upper part of the cord when the head is low. When patients are strong enough to sit up he places them in the so-called scorchers' position. When the needle reaches the cavity of the cord not more than one or two drops of spinal fluid are allowed to escape. Five minims of a 2% solution of cocain is injected for operation about the rectum, or the same quantity of a 4% solution for operations upon the extremities. The patient is then put in a recumbent position with the head and shoulders elevated, this position being maintained for several hours after operation, or until all the effects of the cocain have worn off. Martin appends brief notes of 18 cases, practically all of which were free from after effects. Another operator has used the concentrated solution in 33 cases with very satisfactory results. [A.G.E.]

Narcoses with Schleich's Mixture No. 1.—To test the value of Schleich's narcosis mixture No. 1, consisting of ether, chloroform and ethyl chlorid, and for which Schleich claimed such excellent results, F. V. Winckel² made observations comparing such narcoses with others, in which the anesthetic used was either ether alone or ether and morphin. Using Schleich's mixture the narcosis is brought about quicker (1.2 to 3.2 minutes) than when using ether; the amount of the anesthetic needed until the beginning of the operation, as well as the total amount for the operation, is less when using Schleich's mixture; the temperature of the patient remains higher, and bronchitis does not follow as often; albuminuria does not occur any oftener. In 10% of the cases, however, the anesthetic had to be changed from Schleich's mixture to either chloroform or ether, because of dangerous symptoms arising, and in two of these cases death resulted. Winckel does not attribute these deaths to ethyl chlorid mixture, but prefers to emphasize that it did not prevent them. His terminal conclusions are that Schleich's mixture, although it narcotizes quicker, and less of it is required, has no advantage over ether, inasmuch as unpleasant and life-threatening symptoms occur even oftener in it than in ether. [E.L.]

Internal Strangulation Through a Hole in the Mesentery.—A. Anderson³ reports the case. The patient was a boy of 14, who was seized with sudden pain in the abdomen, attended by vomiting. Pain became worse. Shock was threatened. There was no distention of the abdomen, no dulness on percussion, but there was pain on deep palpation in the right iliac fossa. After 24 hours there was marked tympanites. Increased muscular rigor and threatened shock. The provisional diagnosis was perforative appendicitis. Operation showed that a loop of the bowel had passed through a narrow opening in the mesentery and this was tightly constricted. The constriction was released, opening enlarged, the bowel reduced, and the mesentery opening, which was apparently a natural one, was closed. The patient passed into shock, which resisted all treatment. He died some hours after the operation. Necropsy showed the strangulated bowel, which was some three feet in length, was part of the ileum. [A.B.C.]

An Operation for Incontinence of Feces Due to Relaxed or Paralyzed Sphincter Ani.—Mayo Robson⁴ describes an operation for the cure of the above condition. It is a modification of the operation for complete laceration of the perineum, the latter having suggested the technic in cases having no laceration, males as well as females. With the patient in the lithotomy position, a semilunar incision is made at the junction of the skin and mucous membrane around the anterior half of the anus. The upper and lower margins are then separated by being drawn apart with forceps attached at the mid-point of the incision, thus converting the semilunar slit into a lozenge-shaped cavity. This cavity is then closed by bringing

together the sides by buried catgut sutures, and the skin by silkwormingut sutures. This procedure not only diminishes the size of the anus, but restores the power of the sphincter muscle, acting in one or both of two ways: (1) By shortening the sphincter and thus enabling it to grip the anal orifice; (2) by bringing together the torn ends of the muscle. [A.G.E.]

Chemistry of Chloroform Oxygen Narcosis.—Falk¹ has studied the different contrivances used in combining chloroform and oxygen for the purpose of anesthetizing. Of the Roth-Dräger apparatus, in which oxygen passes through chloroform, he says that it is unsuitable for the purpose, as it does not consider the chemic and pharmaceutical properties of chloroform. In a narcosis lasting but 20 minutes the chloroform shows marked decomposition, and the higher the temperature of the room and the brighter the light the greater is this decomposition. This is also greater when the same chloroform is used the second time. [E.L.]

Ruptured Urinary Bladder.—Hugh Lawrie² reports the case. The patient was a woman of 29. While walking along a dark road she was knocked down by two men. Cries for help brought assistance and she was taken to a hospital. The principal symptom complained of was pain in the lower part of the abdomen and the discharge of bloody urine. This not abating she was operated on by median incision above the pubes. Bloody urine was found in the pelvis and the bladder was ruptured on the anterior wall. The hole, which admitted three fingers, was entirely extraperitoneal. The patient's condition being very grave, drainage was instituted and further operation postponed. Progress was fair for two weeks and a second operation was undertaken for the purpose of closing the wound in the bladder. This was accomplished. Progress was slow, but after seven weeks a third operation was done for the purpose of closing the abdominal wound. After the third operation there was a severe cystitis and threatened pyelitis, which yielded to very large doses of urotropin. This drug had been previously used but had been discontinued in the hope that it was not necessary, when the symptoms of cystitis soon appeared. The author states that this may have been a sequence, rather than a consequence, but the fact that the temperature fell rapidly and the symptoms of cystitis disappeared after copious administration of urotropin leads him to think it was probably a factor in abating the symptoms. His belief now is if the rent in the bladder had been closed at the first operation the result would have been a speedier convalescence. [A.B.C.]

The Subcutaneous Injection of Paraffin as a Treatment for Sunken Nose.—Stephen Paget³ briefly states what he has learned from 29 of these cases, the youngest patient being 19, the oldest 52. The subject is considered under the following heads: 1. The melting point of the paraffin. Eckstein's paraffin, melting at 136°, was used in the first 12 cases, but has been discarded, Paget saying that it ought not to be used. He has some distrust of Gersuny's, which melts at 104°, and believes that paraffin for sunken noses should melt at a point between 105° and 115°. Two paraffins, one melting at 110°, the other at 115°, have given excellent results. 2. The best syringe. Eckstein's has given the most satisfaction. 3. The method of injection. This is given in detail and must be read in full. 4. General results. These were very good in the 29 cases, no disaster of any kind following the injection. Danger from absorption, sloughing, suppuration, or embolism is slight, if it exists at all. Cases reported are very hard to trace and can generally be attributed to faulty technic. [A.G.E.]

Lung Surgery.—Rochelt⁴ reviews lung surgery from its infancy to the present day. He cites examples of wounds, tumors, echinococcus cysts, apical tuberculous infiltrations and tuberculous cavities, abscesses, gangrene, bronchiectases, foreign bodies, and actinomycosis. The Röntgen rays have not made the diagnosis of the various conditions, especially not of the cavities, much easier. He insists on the presence of adhesions to prevent pneumothorax before operation is done. Adhesions may be brought on artificially. He discusses the

¹ New Orleans Medical and Surgical Journal, April, 1903.

² Münchener medicinische Wochenschrift, January 6, 1903.

³ British Medical Journal, February 28, 1903.

⁴ The Practitioner, February, 1903.

¹ Deutsche medicinische Wochenschrift, November 27, 1902.

² British Medical Journal, February 28, 1903.

³ The Practitioner, February, 1903.

⁴ Wiener klinische Wochenschrift, December 4, 1902.

details of the method employed. Where large tuberculous cavities come in question he thinks well of Quincke's procedure, who removed large parts of the bony chest wall to produce mobilization of the chest wall and collapse of the cavity. When cavities require opening he prefers the cautery to the knife. [E.L.]

Cases Simulating Acute Appendicitis.—A. E. Barker¹ asserts that the opinion is prevalent that appendicitis is comparatively easy of diagnosis. While this may be true in the vast majority of cases, the opinion has gained ground with those of wide experience that the diagnosis is often attended with difficulty. In the brief lecture he mentions and discusses a number of pathologic conditions which in his experience and observation have been mistaken for acute appendicitis. These are: Ruptured pyosalpinx, ovarian cyst strangulated by twisted pedicle, twist and strangulation of omentum, perforated gastric ulcer, retrocecal hernia, broken-down caseating glands, ileocecal cancer with abscess, hematoma of broad ligament, reduction of hernia *en masse*, intussusception. He describes a case of perforated gastric ulcer simulating appendicitis. The patient was a servant woman, apparently in previous perfect health, and she was suddenly seized with pain in the right iliac fossa, which later spread over the entire abdomen. The abdominal walls were rigid and tender. Temperature was 100°. The pulse remained fair and there was no shock. Operation at the usual site showed the appendix normal but from the opening a glairy fluid welled up from the pelvis and from the direction of the stomach came additional fluid and gas. Exploration found stomach all perforated. Median incision was made over the stomach, the perforation closed, the abdomen was thoroughly flushed with a saline solution, the wounds saturated, and the patient made a complete recovery. [A.B.C.]

Acute Pancreatitis.—The clinical, operative, and autopsy notes of a case of acute pancreatitis are furnished by W. Hogarth and B. G. A. Moynihan.² The patient was an obese man of 75, who was under observation for three weeks before he would consent to operation. Pancreatic disease was not suspected, the early diagnosis being perforated gastric ulcer and later that of abscess of the lesser peritoneal cavity following perforation. Operation revealed pus in the lesser peritoneum and a necrotic, sloughing pancreas. The patient died in twelve hours from shock. Autopsy showed that all the body and tail of the pancreas was necrotic, that portion of the head immediately surrounded by the duodenum alone being healthy. There was extensive fat-necrosis in the omentum and the surrounding fat. [A.G.E.]

Ureteral Surgery.—In a patient whose urine escaped through a fistula in the anterior abdominal wall, and who when examined with the cystoscope was found to have but one functioning kidney, J. Israel³ made a diagnosis of single hydronephritic kidney. By closing the fistula a small amount of the urine could be forced through the ureter into the bladder, but the hydronephritic pelvis soon became so full and painful as to force removal of the plug. To make the patient comfortable Israel performed a suprapubic cystostomy, producing a vesical fistula. He next inserted rubber tubes into both fistulas, connecting them with each other by means of a silver tube. After a number of slight changes in the apparatus, the most important of which was the insertion of a ballvalve to prevent backflow of urine during micturition, the patient was discharged. He was made perfectly comfortable by the operation, his urine escaping by the normal passage. The apparatus did not prevent him from attending to any of his duties. In the second part of his paper he describes his method of uniting the ureter with the bladder by the extraperitoneal route, showing two patients who were thus cured of ureteral fistulas. Having tried other methods as well, he is convinced that his method permits the more rapid performance of the operation, and produces more satisfactory results than any other. [E.L.]

Surgical Treatment of Sciatica.—J. C. Renton⁴ reports that in the *British Medical Journal* of November 5, 1895, he reported 8 cases of sciatica treated by exposure of the nerve

below the gluteus maximus, the separation of the inflammatory adhesions around the nerve and up to the sciatic notch. In the present article he reports 10 additional cases similarly treated, all with good results, except 1 case, which was not benefited by operation. The other 9 are well after periods varying from one to two years. These patients had almost all visited the various spas without benefit, and they all illustrated the symptoms produced by adhesions around the nerve; hence the operation. No stretching of the nerve was employed, as mere separation of the adhesions was sufficient to relieve the pain. The symptoms of perineuritis as distinguished from neuritis are distinctive and should be borne in mind. In perineuritis there is no pain when at rest, but on motion, especially on walking for a few minutes the pain becomes marked. Mild cases of adhesions improve with massage movements, electricity, etc. When, however, the pain is persistent, the sooner an operation is done the better. In some of the cases six or eight weeks elapsed before improvement took place, because the nerve had been dragged upon by the adhesions. The patient should be warned of this probable result. [A.B.C.]

Primary Sarcoma of the Appendix.—P. Peterson¹ reports this case, which he believes to be the second one recorded, the first being that reported by Glazebrook in 1895. The patient was a man of 39, who had a feeling of uneasiness in the right iliac region for three months. During this time there had been four painful exacerbations lasting several days each. Operation revealed an appendix bent almost to a right angle $6\frac{1}{2}$ inches in length along the greater curvature and 4 inches in circumference at the thickest part. The cecum for a distance of $\frac{1}{4}$ inch around the attachment of the appendix was also thickened. Microscopic examination showed the increased bulk of the appendix to be due to a round-cell sarcoma, involving all the coats but the peritoneal. The wall of the cecum showed but little infiltration, the neoplasm having evidently begun in the distal portion of the appendix. The patient died from the shock of operation and a careful postmortem revealed no trace of tumor formation elsewhere. [A.G.E.]

Inflammation of the Pancreas with Hemorrhage and Necrosis.—H. Hochhaus² adds three cases of pancreatic disease to those already reported. The symptom-complex as noted in these cases does not tend to make the diagnosis of such affections any easier. The onset in all three cases was sudden, and they were characterized by violent abdominal pain, vomiting, abdominal distention, constipation, and intense prostration; the pain throughout the entire course was localized to the region of the pancreas. There were no changes in the character of the stool; but the second patient presented a characteristic condition of the urine. Sugar, acetone, and diacetic acid, as well as other urinary signs, left no doubt regarding the diagnosis in this case; none presented leukocytosis. In two of the patients a mass could be felt in the region of the pancreas. Hochhaus therefore considers the pain as the most characteristic of the various symptoms, but it needs to be differentiated from the pain of biliary colic, intestinal obstruction, and circumscribed peritonitis. The great intensity of the pain, as well as the long duration, even into the period of convalescence, will serve to do that. The causes of pancreatic disease are chiefly inflammations of the biliary passages, the duodenum, and the stomach; many other factors, however, are found contributory agents to the disease. He does not advise operation in the early stages of the disease, as the patient is too much prostrated. If the patient lives beyond the first stage, and his condition becomes chronic, an operation will very often produce a complete cure. [E.L.]

Intestinal Anastomosis: Special Forceps.—T. Carwardine³ describes the method of effective intestinal anastomosis by means of two forceps, each $6\frac{1}{2}$ inches long, with slender blades $\frac{3}{16}$ of an inch wide. These blades may be covered with rubber tubing if desired. Each forceps is made to grasp the bowel beyond the point at which it is to be severed. Then the two forceps are clamped together in parallelism and the severed ends of the gut sutured. The advantages of the instrument are the possibility of union in layers, the steady approximation of

¹ British Medical Journal, February 28, 1903.

² The Practitioner, April, 1903.

³ Deutsche medizinische Wochenschrift, January 1, 1903.

⁴ British Medical Journal, April 4, 1903.

¹ The Practitioner, April, 1903.

² Münchener medizinische Wochenschrift, January 13, 1903.

³ British Medical Journal, February 28, 1903.

the ends of the bowel for anastomosis, the use of only one hand for holding the ends, the absence of any internal diaphragm when union is complete, and the availability of the independent forceps for use as intestinal clamps. [A.B.C.]

A Case of Extensive Resection of the Ductus Choledochus and Hepaticus for Carcinoma.—H. Kehr¹ reports the clinical details of a case of carcinoma of the common bile duct; the gallbladder was distended by a clear serous fluid, and its mouth obstructed by a large stone. He removed the tumor, resecting the ductus choledochus for the purpose. Finding that the stumps of the two ducts could not be united, on account of too much retraction, he closed the common duct, and directly implanted the hepatic duct into the duodenum. The surgical details of the operation are described minutely. He discusses the literature of the subject, and gives many details regarding the differential diagnosis of obstruction of the bile ducts due to carcinoma and gallstones, which he considers very difficult. His case is the first in which such an extensive operation was performed, and inasmuch as the patient recovered he thinks that radical measures should be resorted to oftener in cases of carcinoma, if only for palliative measures and to prolong life. Without operation every case is lost, but with operation some patients may be cured, and most all are helped to some extent. [E.L.]

Adrenalin as Hemostatic in Cases of Severe Hemorrhage.—O. Lange² opened an abscess on the thumb of a man, whom he afterward found belonged to a family of bleeders. All sorts of styptics were applied without avail, and the hematoma gradually extended along the dorsum to the middle of the forearm. Pieces of gauze soaked in adrenalin solution were then packed into the wound, and the hemorrhage stopped at once. Similar results are reported in hemorrhages in two cases of perityphlitis, one serious case of epistaxis, one of hemoptysis, and one of hematemesis. In the last two cases the adrenalin was given internally in doses of 30 drops, with the best results. He suggests its use in uterine hemorrhage. The only point against it is its expense, but as only small quantities are necessary, this is not a very important point. [E.L.]

Mechanism of Strangulation of the Intestine.—It is generally believed that when the intestine is caught by an adhesion or passes through a ring, strangulation is produced by the peristaltic wave pushing the intestine in from above. This is not conceded by Wilms,³ especially as it is usually the lower part of the small intestine, often as far as the cecum, which lies within the strangulation. He says a small piece of intestine is caught by the fibrous band; peristalsis pushes some feces into this; peristalsis continues and through it, as well as the weight of the incarcerated loop, the intestine is pulled backward into the strangulated area, until either this is too full to receive more, or the gut is too large to pass the constriction. [E.L.]

Behavior of Leukocytes in Suppuration, Especially in Abscesses of the Liver.—F. Perutz² calls attention to the fact that Bornet's paper concerning leukocytosis in the diagnosis of liver abscess preceded Curschman's publication fully a year. He claims some of the honors of leukocyte investigations for this name. It is frequently a positive sign in liver abscess, and sometimes is present to a considerable degree. [E.L.]

Importance of Early Removal of Doubtful Tumors of the Breast.—J. C. Renton⁴ reports five cases which come under the category of doubtful tumors of the breast. Each case is detailed at some length. They all occurred between the ages of 30 and 43. The author states that they are reported in order to illustrate the importance of early operation in any patient over 30. When the patient complains of a small hard lump the doctor may well feel some hesitancy in operating unless she has passed her thirtieth year, after which time the sooner the tumor is removed the better it will be in the vast majority of cases. A small cyst may occur in a breast, which can be dealt with by dissecting it out for microscopic examination. If malignancy is shown removal of the breast is demanded at once. It is a serious matter to recommend delay

in operation once a hard swelling has appeared in the breast. The author states that the patients upon whom he operated early are still alive, while those operated on after the disease extended to the glands are nearly all dead. [A.B.C.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Recurrent Abortion.—The classification of recurrent abortion as given by John W. Taylor¹ is more rigid and severe than is usually seen. He includes under the title of recurrent abortion only those cases in which from the beginning or from some definite epoch the patient has aborted with every (succeeding) pregnancy, and with one exception only has restricted it to cases of initial or primary recurrent abortion; that is, to patients who from the beginning of their married life until the date of coming under observation have never been able to bear a living child at term. The so-called "habit" in cases of syphilis, especially when the patient is under treatment, tends to alter with each succeeding pregnancy; recurrent abortion then is a better term than habitual abortion. Of the rare forms of recurrent abortion a few are due to intraperitoneal adhesions, chronic kidney disease with albuminuria, and a deep laceration of the cervix. When all these rarer cases of recurrent abortion are accounted for, and when syphilis can be rigidly excluded, there still remains a definite group of cases of very nearly equal importance to that belonging to syphilis. The distinguishing features which bind these cases together are indications of a low vitality on the part of the mother or father or both parents, a strumous family history, and what he calls the remarkable result of an essentially "antistrumous" treatment when carried on for a long period of time or throughout the whole of the pregnancy. Twelve of the latter type of cases are tabulated. In syphilitic cases each succeeding abortion, if the patient's general condition remains satisfactory, tends to occur at a later period until the pregnancy goes to term. At this stage dead children are usually born, but finally living children may be expected. In the "strumous" class, unless something is done to improve the general health, each abortion tends to further weaken the patient, each succeeding abortion tends to occur at an earlier period, and finally in some untreated cases the power of conception is lost. [F.C.H.]

The Surgical Treatment of Procidentia Uteri.—The etiology of procidentia is discussed by R. Peterson,² who gives the steps in the development of this condition, including pelvic laceration or overdistention, cystocele, rectocele, and prolapse of the uterus. The principal support of the organ is said to come from the various muscles and connective tissue making up the pelvic floor. The ideal aimed at in surgical treatment of the condition is seldom attained and the retention of the uterus in nearly its normal position with prevention of the vaginal prolapse is all that can be hoped for. Operation must carry and hold the cervix backward so that the fundus of the uterus will point forward instead of backward and it must restore the anterior vaginal and bladder walls to their normal position. Removal of the uterus alone is a perfectly useless procedure, as is the simple narrowing of the upper part of the vagina or the endeavor to hold the uterus upward by a shortening of its ligaments or by attachment to the abdominal wall. Peterson sometimes amputates the cervix when it is greatly everted, elongated and enlarged. He carries upward the anterior vaginal and bladder walls by two procedures which he briefly describes. A plastic operation on the posterior vaginal wall is then performed, followed by an extensive perineorrhaphy. Only occasionally is it found necessary to remove the uterus. [A.G.E.]

Puerperal Hyperpyrexia of Malarial Origin.—Percy B. Spurgin¹ reports the case of a primipara, aged 34, craniotomy being performed upon the dead fetus. On the evening of the second day she complained of intense headache and of dull aching in both limbs following intermittent fever. She had

¹ Münchener medicinische Wochenschrift, January 20, 1903.

² Münchener medicinische Wochenschrift, January 13, 1903.

³ Deutsche medicinische Wochenschrift, January 29, 1903.

⁴ British Medical Journal, April 11, 1903.

¹ British Medical Journal, April 11, 1903.

² The Physician and Surgeon, January, 1903.

been a resident of India for some years prior to her marriage. A diagnosis was made of tertian ague, and was clearly borne out by the temperature chart. [F.C.H.]

Bilateral Dermoid Cysts of the Ovaries Showing Cerebellar Tissue.—These specimens were shown at the Milwaukee Medical Society by J. M. Bffel.¹ The specimens were removed from a maiden school teacher. They showed the ordinary dermoid structures—hair, sebaceous glands, sweat-glands, a tube lined by columnar ciliated epithelium, some bone and cartilage, no teeth. In addition to these there was considerable glial tissue, and in one cyst was an epithelial prominence, within which was found a mass of tissue looking like the brain; upon sectioning this it was found to be an irregular mass of tissue with the exact histologic structure of a normal cerebellum—the pia mater, the molecular layer, the cells of Purkinje, the granular layer, and the white substance. All of these structures are as perfect as the ordinary section of a cerebellum can be. The finding of the cerebellar tissue in this case clears up one disputed point, viz., the presence of "specific nerve tissue" in dermoids of the ovary, which has been denied. [A.G.E.]

The Diagnosis of Pregnancy.—W. S. A. Griffith² observes that if a woman has amenorrhea for a period of anything under nine months and that woman is of an age to bear a child, we are wise in assuming the woman is pregnant until we have proved she is not. In a very large number of cases one can tell by examining the breasts whether the woman is pregnant with almost absolute certainty. Of all the signs which are given there are only one or two which are infallible, and certainly the activity of the breasts is not an infallible sign, but it is of the highest value, and of such value that one can form an opinion of the highest importance when the condition is recognized. He considers the evidence of the fetal heart of secondary importance. The diagnosis of pregnancy may be made easily and with absolute certainty by feeling the fetus and its movements; and in the earlier months from the history of amenorrhea, the recognition of the marked activity of the breasts, and by finding the uterus enlarged and reaching to a definite height above the pubes, allowing 1½ inches for each completed month of pregnancy. [F.C.H.]

Primary Abdominal Pregnancy.—A. L. Galabin³ states that until the report of Witthauer's case of primary abdominal pregnancy such a condition had not been demonstrated. He reports a case which he considers presents strong presumptive evidence that primary abdominal pregnancy occurred. The patient died from hemorrhage, and a thorough examination of the pelvic viscera was made. The gestation sac was placed between the uterus and rectum, occupying the whole of the pouch of Douglas. There was a fetus 5½ cm. (2¼ in.) long, apparently at the tenth week of gestation. Both tubes and ovaries and the mesosalpinx were normal, with the exception that the right ovary contained two small cysts. Neither tube showed signs of recent dilation. A specimen was examined by a committee of the Obstetrical Society, which reported that the pregnancy was probably a primary abdominal one. It was held possible that a tubal abortion had occurred at a very early stage of gestation and that the ovum had been transferred to the bottom of the pouch of Douglas. The author states that obviously such a possibility cannot be excluded from any apparent case of primary abdominal pregnancy fetation. Other evidence of primary abdominal pregnancy was that the fetal sac consisted externally, outside of the chorion, of a membrane the outer surface of which was smooth, somewhat polished, resembling peritoneum. There was no part of such sac, however, in the ovary, and a space of nearly 2 cm. (¾ inch) of normal broad ligament intervened between the ovary and the nearest part of the placental site. [A.B.C.]

Eclampsia of Pregnancy, with Notes on the Use of Bossi's Dilator.—T. Arthur Helme² sums up the etiology of eclampsia as follows: There are certain cases in which eclamptic seizures following certain premonitory signs are the result of some unknown conditions associated with the pregnant state. Before the advent of convulsions it is more or less generally

agreed that when the premonitory signs are advancing in importance and the state of the urine is becoming progressively worse, that is, the urea diminishing and the albumin (if present) increasing in spite of careful treatment, it is well to forestall the eclamptic state and put an end to the pregnancy. Should eclampsia occur he advocates emptying the uterus, but not by too heroic measures regardless of injury to the maternal soft parts to control the convulsions by chloroform or morphin, and to use all measures to excite the emunctories. He details the case of a 23 year old primipara, in whom he dilated the cervix in 20 minutes with Bossi's dilator, after which the seven months fetus was delivered in 10 minutes more. The instrument, if care is taken, may be used with confidence and safety. [F.C.H.]

Case of Dystocia Due to Uterine Myoma: Cesarean Section.—Gilbert Kempe¹ details a case in which a woman was pregnant about four months and a tumor which was thought to be a fibromyoma was so impacted in the pelvis that it could not be dislodged. When the pregnancy reached term a cesarean section was done and a living baby extracted. A large, hard fibromyoma was found on the posterior surface of the uterus and cervix, bulging into and quite incarcerated in the pelvis. This had formed the obstruction to delivery. [F.C.H.]

A Kidney in the Umbilical Cord.—This unusual case, with a unique method of treatment, is reported by G. M. Horton.² On March 5 a primipara was delivered of a male child weighing nine pounds. A tumor the size of a hen's egg was present in the umbilical cord just outside the abdominal cavity. The cord was ligated beyond this, and the infant laid aside until the mother had been given attention. The cord over the tumor, which was supposed to be a blood-clot, was then cut with a pair of scissors, the tumor itself, which proved to be a kidney, being wounded by this procedure. When the nature of the mass was discovered the wound in the kidney was closed by two catgut sutures, and an attempt made to replace the organ in the abdominal cavity. The umbilical opening being too small, it was dilated with artery forceps until the kidney was admitted. Six catgut sutures were then placed to close the ring. No anesthetic was used, the child seeming to suffer but little pain. No urine was passed for 48 hours, but since that time the child has been doing well. [A.G.E.]

Pregnancy Complicated by Suppurating Hydatid Cyst of the Liver.—Richard Jones¹ details a case illustrative of the dangers of such a complication in parous women, more especially when suppuration and rupture of the cyst is delayed to the first few days after parturition. A diagnosis was made of suppurating hydatid cyst of the liver bursting into the chest cavity; operation was performed through the chest in the usual manner. The patient, notwithstanding the unusual circumstances of her case, stood the operation well. The cyst, however, communicated with a large bile duct, so that the flow of bile was very profuse and continuous, and the patient speedily sank from exhaustion, expiring on the fourth day after the operation. An autopsy was not obtained. [F.C.H.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPELMAN

EDITORIAL COMMENT

The Substitutes for Quinin.—*Euquinin.*—Euquinin, the carbonic ethylester of quinin, is a white powder almost insoluble in water, but easily dissolved in alcohol and ether. When first placed in the mouth it is tasteless, but in a few minutes causes a slightly bitter taste. The following advantages are alleged for this drug: that it is tasteless, does not cause tinnitus aurium, is less prone than quinin to disturb digestion, and less irritant to the kidneys. Although there seems to be sufficient evidence that these statements have a foundation of truth, it must be confessed that some of them are more or less exaggerated. Thus, while it is far less dis-

¹ Wisconsin Medical Journal, April, 1903.

² British Medical Journal, April 11, 1903.

³ British Medical Journal, March 21, 1903.

¹ British Medical Journal, April 11, 1903.

² Northwest Medicine, April, 1903.

agreeable than the alkaloid, equinin certainly has some bitter taste; again, while all authorities seem agreed that cinchonism is less common than with quinin, we have ourselves observed marked ringing in the ears after its use. Oberlach¹ and Thompson² have found it well borne by patients who cannot take quinin itself. Von Noorden³ has given as high as 2 grams (30 grains) daily without any unpleasant secondary symptoms. Mori⁴ says that the cinchonism caused by equinin will disappear in a few days, even if the use of the drug be continued. Concerning the efficacy of the drug there is no room for doubt but that it fully represents the therapeutic activities of quinin. Von Noorden⁵ and Gray⁶ have found it useful as an antipyretic, and Mori, Francesco,⁶ and a host of others confirm its value in malaria. Equinin was originally recommended as a specific in whoopingcough, and its utility in this condition is vouched for by Casse⁷ and Von Noorden. Among the other conditions in which it has been found of service may be mentioned influenza, neuralgia, rheumatic and other fevers.

Equinin may be given in capsules in doses for adults of .32 gram to 2 grams (5 to 30 grains) several times a day. Blackwood⁸ recommends the following as a tonic in anemia with neuralgia:

Equinin	1 dram	(4 grams)
Iron lactate	2 drams	(8 grams)
Solution of arsenious acid . . . . .	.90 minims	(6 cc.)
Compound tincture of lavender	4 fluidrams	(15 cc.)
Elixir of curaçoa, sufficient to make	4 fluidounces	(120 cc.)

Mix. Dose, one teaspoonful four times daily.

Saloquinin.—The salicylic ester of quinin has been on the market only two years, but has already achieved for itself an important place among practical remedies. It is quite insoluble in water and therefore tasteless. For the same reason it is absorbed very slowly. According to Oberlach⁹ saloquinin causes neither tinnitus aurium, gastric disturbances, nor irritation of the urinary tract. Fitch¹⁰ believes it superior to quinin as an antiperiodic, and of especial value in malarial hematuria. Tauszk¹¹ has obtained good results in various neuralgias, and Oberlach recommends it as an antipyretic. The dose of saloquinin should be about half again that of quinin in a corresponding case. In a case of malarial hematuria Fitch gave 2.6 grams (40 grains), followed in four hours by 1.6 grams (25 grains) more. The ordinary dose is from .65 gram (10 grains) upward.

Aristochin.—Diquinin carbonate occurs as a white, almost tasteless powder, freely soluble in dilute hydrochloric acid. It does not dissolve in plain water. Aristochin represents 96% of quinin, and according to Von Noorden¹² is equivalent qualitatively and quantitatively to quinin hydrochlorate. Stursburg¹³ has administered aristochin to children as a substitute for the natural alkaloid, mostly with pleasing results, although in one case its use in a baby of six months was followed by convulsions. He gives for a one-year-old child 0.005 gram to 0.01 gram ($\frac{1}{2}$ grain to $\frac{1}{4}$ grain).

Chinaphenin.—The combination of quinin and phenetid, known as a chinaphenin, is a tasteless powder, sparingly soluble in water but freely so in alcohol and ether. As might be expected it represents to an extent the powers of both constituents. Von Noorden¹⁴ places its antipyretic action as midway between phenacetin and quinin. The same author has found it useful in whoopingcough in doses of .19 gram or .26 gram (3

grains or 4 grains), and also in neuralgia. In malaria it seems distinctly inferior to quinin. The dose for an adult is 1 gram to 2 grams (15 grains to 30 grains).

REVIEW OF LITERATURE.

Treatment of Migraine.—According to Karplus¹ it is necessary to make a sharp diagnosis between true migraine and migrain-like attacks of headache, this latter being a symptom of various diseases. To an incorrect diagnosis must be attributed those cases of "migraine" cured by correction of an eye lesion, regulation of the diet, etc. The true migraine should be diagnosed by the localization of the pain, the tendency to periodicity and systemic disturbances (vomiting, lassitude, etc.), and by the fact that pressure on the supraorbital nerve increases the pain. The disease is nearly always hereditary and is closely allied to other nervous disturbances, especially to epilepsy, although the occurrence of epilepsy and migraine in the same individual is exceedingly rare. Its relation to epilepsy is shown in the tendency toward periodicity of attacks and in the frequent occurrence of aura. The most common form of aura is visual and consists in various forms of scotoma. In the treatment of migraine a vegetable diet will indirectly benefit the patient by improving the general condition. Alcohol should be especially avoided. It is also important to avoid so far as possible any determining cause of the attack, such as illy ventilated rooms, overstimulation of the nervous system, excitement or overwork, and exposure to too bright light. The best preventive is a course of bromids. These should be given in doses of 3 grams (45 grains) daily for a long period of time. In cases in which the bromid treatment cannot be employed continuously if there is an aura it may be used immediately before, to prevent the oncoming of an attack. The coaltar antipyretics are recommended, such as phenacetin, pyramidon, etc. The use of drugs to control the circulation in the brain is entirely experimental, because we know but little concerning the brain circulation. Adrenalin, diuretin, or cocain may be tried. Such treatment should be interrupted during the course of an attack. [H.C.W.]

Effect of Lowered Oxygen Tension in Producing the Hypercythemia of Altitude.—It cannot be said that the final explanation of the permanent hypercythemia observed at high altitudes has been reached; future investigations will no doubt modify some of its details, but for the present the theory of a true increase in the number of the erythrocytes seems the most tenable. The principal factor in the production of this change is the diminution of the barometric pressure. This is well shown by the following experiment of Regnard: A guineapig was confined for a month in a bell-jar in which a constant low pressure was maintained. To guard against any possible danger from intoxication through the animal's excretions it was transferred every day to another apparatus in which exactly the same conditions prevailed. The guineapig did not enjoy the benefit of bracing and stimulating mountain air; its appetite was rather below than above normal; it was simply subjected to a pressure approximately equivalent to the barometric pressure prevailing at the Col du St. Bernard, or at Santa Fé de Bogota, altitude 2,000 meters (6,560 feet). At the end of the month the animal's blood was found to absorb 21% (by volume) of oxygen, which very nearly represents the coefficient of absorption of the blood of llamas living near La Paz; whereas guineapigs enjoying their full liberty and placed under much better hygienic surroundings showed an absorbing power of only 14 to 17 volumes percent. Sellier, of Bordeaux, went even further, and conclusively proved that the absolute degree of pressure is without influence on the result, the important factor being the diminution in the tension of the oxygen. Three different experiments were made on birds. In the first, the birds were confined for a number of days in rarefied air; in the second, they were placed in an artificial atmosphere having an entire pressure of 76 centimeters of mercury (normal barometric pressure), but in which the oxygen tension was reduced to equal that prevailing at the Pic du Midi; in the third experiment the tension of the oxygen was normal, but the tension of the inert gas was diminished, so that the

¹ Deutsche med. Zeit., 1897, No. 15.

² Interstate Medical Journal, March, 1899.

³ Centralt. f. Innere Med., 1896, No. 48.

⁴ Merck's Arch., 1900, p. 296.

⁵ British Medical Journal, 1898, No. 1939.

⁶ Therap. Clinica, 1899, No. 7.

⁷ Therap. Monatsh., 1899, p. 190.

⁸ Med. Summary, 1899, p. 214.

⁹ Centralt. f. Innere Med., 1901.

¹⁰ Internat. Medical Mag., Vol. xi, No. 4.

¹¹ Klin. therap. Woch., 1902, No. 1.

¹² Merck's Archives, 1903, p. 102.

¹³ Therap. Monatsh., 1903, xvii, p. 96.

¹⁴ Therap. d. Gegenwart, Vol. v, No. 1.

¹ Klin.-therapeutische Wochenschrift, 1903, x, 142.

total pressure was less than 76 centimeters of mercury. It was found that in the first and second experiments hypercythemia was produced, while in the third experiment this hemic reaction failed to appear. Conversely, an increase in the oxygen tension is followed by the disappearance of a certain proportion of red blood cells which have become useless for purposes of respiration. This was to have been expected *a priori*, and further experimental proof has been furnished by Doyon and Maurel, who observed a distinct diminution in the number of erythrocytes in animals subjected to the continuous action of condensed air.—Tissier, in *Cohen's System of Physiologic Therapeutics*, Vol. x.

The Effects of Yohinbin.—Seitz¹ in reporting three cases of impotence apparently cured by yohinbin gives an interesting account of its effect on a healthy man. The drug produced after one week's course no increase in the sexual desire, but apparently a more than normally strong erection. The time to ejaculation was prolonged and the coitus was followed by a peculiar headache at the base of the brain, which disappeared after some time. The amount taken was 6 milligrams ($\frac{1}{10}$ grain) four times a day. [H.C.W.]

Pyramidon in Typhoid Fever.—L. Byk² treated a case of typhoid fever mainly with pyramidon in doses of $4\frac{1}{2}$ grains (0.3 gram) twice during the night. It served to keep the temperature in check, prevented delirium, produced free perspiration, and did not depress the pulse. At no time were symptoms of collapse noted. He feels justified in recommending its use, especially in cases in which, as in his patient, the Brand method cannot be carried out satisfactorily. [E.L.]

The Treatment of Tetanus by Injections of Brain Emulsion.—Krokiewicz³ reports four cases of traumatic tetanus treated by the injection of an emulsion made from rabbit's brain with one death. Two of the cases were of a severe type. So far 16 cases have been reported of tetanus treated with cerebral emulsion with only 3 deaths. The technic of the method is not given, although it is stated that a rabbit's whole brain may be given every alternate day or in bad cases every day. The beneficial effect is notable almost immediately after injection. [H.C.W.]

Increase of Erythrocytes and Hemoglobin at Various Altitudes.—Cazeaux⁴ gives the following figures for the number of red cells at altitudes ranging between 450 and 1,800 meters—approximately 1,500 to 5,000 feet:

On the plain	5,000,000
At 450 meters 476 feet	5,800,000
" 700 " 2,206 "	5,900,000
" 950 " 3,116 "	6,100,000
" 1,800 " 5,904 "	7,100,000

In the case of tuberculous subjects—and it may be observed in passing that the beneficial influence of high altitudes manifests itself also in the case of anemic, alcoholic, and neurasthenic patients—the degree of hypercythemia is usually constant, while the increase in the hemoglobin does not follow a parallel course. Meisser and Schröder observed that the hemoglobin continues to increase in phthisical patients who are improving or recovering; it remains stationary or diminishes when the disease is tending toward a fatal termination; and when the progress toward recovery is arrested in subjects who had been improving, the percentage of hemoglobin rapidly falls in almost exact accord with the progress of the disease. The power of adaptation to different altitudes, within certain limits, is a general biologic law. Gaston Bonnier, in 1890, studied the phenomena of such adaptation in plants, and demonstrated the modifications that they undergo in the process. The parts under the ground accumulate an increased supply of nourishment; the stems become shorter, the leaves more abundant, greener, and richer in coloring-matter. The latter phenomenon, the increase in the chlorophyll in the external portions of the plant, on account of its analogy with the changes that occur in the hemoglobin, is the principal point to be remembered.

An Inoperable Sarcoma Treated with Röntgen Rays.

¹ Die med. Woche., December 1, 1902, p. 502.

² Deutsche medicinische Wochenschrift, January 15, 1903.

³ Klinische-therapeut. Wochens., 1903, x, 164.

⁴ Cited by Tissier in *Cohen's System of Physiologic Therapeutics*, Vol. x.

—Schüller¹ having had referred to him a recurrent sarcoma of the occiput of such extent that operation was impossible, made a trial of the Röntgen ray. The tumor covered a space the size of a hand; the posterior cervical and supraclavicular lymph glands were involved on both sides. In all 23 exposures to the rays were made, lasting from 15 to 50 minutes. The first dozen applications produced marked diminution in the size of the tumor, but further radiations were without much effect, and the patient finally died. Although the termination was unfavorable, Schüller believes the results demonstrate that the rays have an effect upon the growth. [H.C.W.]

Salient Points in the Treatment of Catarrhal Deafness.—S. F. Snow² considers that the most effective way of handling chronic cases of catarrhal deafness is by jets of stimulative vapor, made by passing air under pressure over a super-saturated solution of gum camphor in tincture of iodine, through the eustachian tube to the middle ear, but no good can come from such treatment if the tube is occluded by congestive membranes. No treatment for the relief of chronic catarrhal conditions will be effective if given while the body is covered by an inactive sensitive skin, causing these congestions. [F.C.H.]

A New Treatment of Unresolved Pneumonia.—Schüller³ reports an interesting case of what was diagnosed as abscess of the lung, apparently cured by a novel mode of treatment. The history of the case was as follows: Following an attack of influenza the patient developed a right-sided pneumonia, which did not resolve. Aspiration drew off a large quantity of fetid pus. Two days later the seventh rib was resected; the lung was found firmly hepatized, but no sign of abscess cavity was revealed. After two months, the signs of consolidation having remained unaltered, a second operation was performed, and the same condition as at the first operation found. Knowing nothing better to do Schüller injected 120 cc. of a sterile physiologic salt solution into different parts of the consolidated lung. In a few days the expectoration became more profuse, the dulness less intense and vesicular murmur audible. After some time the patient made a complete recovery. The explanation given by Schüller is that the salt solution rendered the exudate more fluid allowing some of the alveoli to empty themselves, so that air could again enter the consolidated area. The movement of the air cells caused a reestablishment of the circulation which led to the removal of the remaining exudate. [H.C.W.]

FORMULAS, ORIGINAL AND SELECTED.

Acute Articular Rheumatism.—

- Salicylic acid 2 drams (8.0 grams)
- Menthol 50 grains (3.0 grams)
- Ichthyol 2 drams (8.0 grams)
- Woolfat 2 ounces (60.0 grams)

Apply and cover parts lightly with cotton-wool and renew night and morning.

Muscular Rheumatism.—

- Methyl salicylate 3 drams (12.0 grams)
- Menthol 20 grains (1.3 grams)
- Chloroform and aconite liniment (N. F.) 3 ounces (90.0 cc.)

Rub in well every two or three hours.

Chronic Rheumatism.—

- Sodium iodid 2 drams (8.0 grams)
- Wine of colchicum root 4 drams (15.0 cc.)
- Sodium salicylate 3 drams (12.0 grams)
- Ammoniated tincture of guaiacum 2 ounces (60.0 cc.)
- Compound syrup of sarsaparilla sufficient to make . . . 6 fluidounces (180 cc.)

Dessertspoonful three times daily.

—Merck's Archives.

- Thiocol 30 grains (2 grams)
- Sodium benzoate 30 grains (2 grams)
- Tincture of aconite 20 drops
- Syrup of poppy 10 drams (37 cc.)
- Cherry-laurel water 24 drams (9 cc.)
- Syrup of senega sufficient to make 5 ounces (150 cc.)

Tablespoonful three times daily.

—La Presse Méd.

¹ Deutsche med. Zeit., 1903, No. 4.

² Buffalo Medical Journal, January, 1903.

³ Klinisch-therap. Wochens., 1903, x, p. 188.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 2, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
Alabama:	Mobile.....Apr. 18-25.....	6	
California:	Los Angeles.....Apr. 4-11.....	7	
	San Francisco.....Apr. 12-19.....	6	
District of Columbia:	Washington.....Apr. 18-25.....	1	
Georgia:	Atlanta.....Apr. 15-29.....	5	
Illinois:	Belleville.....Apr. 18-25.....	1	
	Chicago.....Apr. 18-25.....	17	
	Galesburg.....Apr. 18-25.....	3	
Indiana:	Indianapolis.....Apr. 18-25.....	1	
Iowa:	Dubuque.....Apr. 18-25.....	1	
Maine:	Eastport.....Apr. 22.....	3	
Maryland:	Baltimore.....Apr. 18-25.....	1	
Massachusetts:	Cambridge.....Apr. 18-25.....	1	
	Holyoke.....Apr. 18-25.....	4	
	Lowell.....Apr. 18-25.....	2	
Michigan:	Flint.....Apr. 18-25.....	1	
	Grand Rapids.....Apr. 18-25.....	2	
	Port Huron.....Apr. 18-25.....	1	
Missouri:	St. Louis.....Apr. 19-26.....	5	
Nebraska:	Omaha.....Apr. 18-25.....	4	
New Hampshire:	Manchester.....Apr. 18-25.....	5	
	Nashua.....Apr. 18-25.....	3	
	Buffalo.....Apr. 18-25.....	4	
New York:	Cincinnati.....Apr. 18-25.....	2	1
Ohio:	Dayton.....Apr. 18-25.....	1	
	Hamilton.....Apr. 18-25.....	1	
Oregon:	.....Apr. 22.....	250	
Pennsylvania:	Altoona.....Apr. 18-25.....	2	
	Carbondele.....Apr. 14-21.....	2	
	McKeesport.....Mar. 28-Apr. 4.....	3	
	McKeesport.....Apr. 18-25.....	3	
	Philadelphia.....Apr. 18-25.....	22	1
	Pittsburg.....Apr. 18-25.....	18	2
	Reading.....Apr. 13-20.....	4	
	Scranton.....Apr. 18-25.....	6	
South Carolina:	Charleston.....Apr. 18-25.....	2	2
Tennessee:	Memphis.....Apr. 18-25.....	1	
Utah:	Salt Lake City.....Apr. 18-25.....	16	
Washington:	Tacoma.....Apr. 18-20.....	2	
Wisconsin:	Milwaukee.....Apr. 18-25.....	1	

SMALLPOX—FOREIGN.

Belgium:	Brussels.....Apr. 4-11.....	6	
Brazil:	Rio de Janeiro.....Mar. 29-Apr. 5.....	3	
Canary Islands:	Las Palmas.....Mar. 21-Apr. 4.....	44	1
China:	Hongkong.....Mar. 7-14.....	4	1
Colombia:	Barranquilla.....Apr. 5-12.....	1	
	Cartagena.....Apr. 5-12.....	1	
France:	Rheims.....Apr. 5-12.....	1	
Great Britain:	Birmingham.....Apr. 4-11.....	6	
	Bristol.....Mar. 28-Apr. 11.....	6	3
	Cardiff.....Feb. 21-Mar. 28.....	22	1
	Dundee.....Mar. 28-Apr. 11.....	1	
	Leeds.....Apr. 4-11.....	7	1
	Liverpool.....Apr. 4-11.....	66	2
	London.....Apr. 4-11.....	5	
	Manchester.....Apr. 4-11.....	11	1
	Newcastle-on-Tyne.....Mar. 21-Apr. 11.....	4	
	South Shields.....Mar. 21-Apr. 11.....	8	
India:	Bombay.....Mar. 24-31.....	100	
	Calcutta.....Mar. 21-28.....	2	
Mexico:	City of Mexico.....Apr. 5-12.....	14	6
Russia:	Moscow.....Mar. 27-Apr. 4.....	1	1
	Odessa.....Mar. 27-Apr. 4.....	2	2
	St. Petersburg.....Mar. 27-Apr. 4.....	33	4
Straits Settlements:	Singapore.....Mar. 7-14.....	3	1
Turkey:	Alexandretta.....Mar. 27-Apr. 4.....	3	

SMALLPOX—INSULAR.

Philippines:	Manila.....Mar. 7-21.....	9	
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YELLOW FEVER.

Brazil:	Rio de Janeiro.....Mar. 29-Apr. 5.....	33	
Colombia:	Panama.....Apr. 15-22.....	2	1
Costa Rica:	Limon.....Apr. 17.....	1	
Mexico:	Vera Cruz.....Apr. 11-25.....	10	4

CHOLERA—INSULAR.

Philippines:	Provinces.....Feb. 28-Mar. 14.....	326	225
	Not previously reported	467	316

CHOLERA—FOREIGN.

India:	Bombay.....Mar. 21-31.....	1	
	Calcutta.....Mar. 21-28.....	52	

PLAGUE—INSULAR.

Hawaii:	Honolulu.....Apr. 15.....	1	
Philippines:	Manila.....Mar. 7-21.....	24	17

PLAGUE—FOREIGN.

China:	Hongkong.....Mar. 7-14.....	17	17
India:	Bombay.....Mar. 24-31.....	1,755	
	Calcutta.....Mar. 21-28.....	816	

Changes in the Medical Corps of the U. S. Army for the week ended May 2, 1903:

MCCULLOUGH, Captain CHAMPECE, JR., assistant surgeon, is detailed to accompany the party scheduled to leave Manila in the near future to make an exploration of the Mariveles Reservation, with a view to selecting a site above the 2,500-foot level for a hospital and recuperation post.

SMITH, CHARLES F., contract surgeon, is granted leave for one month from about May 1.

MONCRIEF, First Lieutenant WILLIAM H., assistant surgeon, leave granted April 9 is extended ten days.

ASHBURN, First Lieutenant PERCY M., assistant surgeon, is relieved from further duty at Fort Assiniboine and will proceed to Fort Missoula for duty.

GIRARD, Colonel JOSEPH B., assistant surgeon-general, chief surgeon department of the Missouri, will proceed to the following-named posts, in the order named, on business pertaining to the inspection of the medical and hospital departments at those posts: Fort Leavenworth, Fort Riley, Fort Reno, Fort Sill, Fort Logan H. Roots, Jefferson Barracks, Fort Crook, Fort M'obrara, Fort Robinson.

MAUS, Lieutenant-Colonel LOUIS M., deputy surgeon-general, leave granted March 20 is extended one month.

ADAIR, GEORGE F., contract surgeon, is relieved from temporary duty at Fort Morgan and will proceed to Fort Wadsworth for duty.

JERAULD, F. N. C., contract surgeon, is granted leave for two months.

SMITH, CHARLES F., contract surgeon, is relieved from further duty at Fort Sheridan and will proceed to Fort Leavenworth for duty.

FRICK, Major EUCLID B., surgeon, is granted leave for ten days.

MORRIS, First Lieutenant SAMUEL J., assistant surgeon, is assigned to duty at Fort Grant.

PURNELL, First Lieutenant HARRY S., assistant surgeon, is assigned to duty at Fort Wingate.

FANNING, GEORGE J., contract surgeon, is granted leave for one month from about May 5, with permission to apply for an extension of one month.

SILER, J. F., contract surgeon, is granted leave for twenty days from about May 20.

HEPBURN, JAMES H., contract surgeon, leave granted on surgeon's certificate April 3 is extended one month on surgeon's certificate.

MCCALLUM, FRANCIS M., contract surgeon, is granted leave for two months without pay, to take effect upon the expiration of his present leave.

CARPENTER, ALDEN, contract dental surgeon, is assigned to duty at Vancouver Barracks.

BARTLETT, First Lieutenant COSAM J., assistant surgeon, having reported en route to join his station from leave, will proceed to Seattle, Wash., and await the arrival of Company I, Thirteenth Infantry, and accompany that organization en route to its station, Fort Lisicum, Alaska.

Changes in the Medical Corps of the U. S. Navy for the week ended May 2, 1903:

WALTON, T. C., medical director, retired, ordered to duty as senior member of a board of officers at the Naval Academy.

SMITH, G. T., surgeon, ordered to duty as a member of a board of officers at the Naval Academy.

STONE, M. V., assistant surgeon, granted sick leave for three months.

BAKER, M. W., assistant surgeon, ordered to duty as member and recorder of a board of officers at the Naval Academy.

WILLIAMS, R. B., assistant surgeon, detached from the Decatur and ordered to the Chauncey.

HOLLOWAY, J. H., assistant surgeon, detached from the Franklin and ordered home to wait orders.

GROW, E. J., passed assistant surgeon, when discharged from treatment at the Naval Hospital, Mare Island, Cal., ordered to duty at that hospital.

SMITH, C. G., assistant surgeon, detached from the Marietta and ordered to the Newport.

Changes in the Public Health and Marine-Hospital Service for the week ended April 30, 1903:

PETTUS, W. J., assistant surgeon-general, granted leave of absence for seven days from April 26—April 28, 1903.

BAILHACHE, PRESTON H., surgeon, granted five days' leave of absence from April 29, 1903, under provisions of paragraph 189 of the regulations.

IRWIN, FAIRFAX, surgeon, granted leave of absence for seven days from April 28—April 27, 1903.

PECKHAM, C. T., surgeon, granted leave of absence for five days from April 1, 1903, on account of sickness, under provisions of paragraph 191 of the regulations.

PARKER, H. B., passed assistant surgeon, relieved from duty in the Hygienic Laboratory, and directed to proceed to Vera Cruz, Mexico, for special temporary duty as chairman of working party of Yellow Fever Institute—April 27, 1903.

FRANCIS, EDWARD, assistant surgeon, relieved from duty in the Hygienic Laboratory, and directed to report to Passed Assistant Surgeon H. B. Parker and proceed to Jalapa, Mexico, for special temporary duty as member of working party of Yellow Fever Institute—April 27, 1903.

BARNESBY, P. N., acting assistant surgeon, granted leave of absence for two days from April 13, 1903, on account of sickness, under provisions of paragraph 191 of the regulations.

MCCONNELL, A. P., acting assistant surgeon, leave of absence for three days from April 20, 1903, granted by Bureau letter of April 16, 1903, revoked—April 28, 1903.

O'REILLY, W. J., acting assistant surgeon, granted leave of absence for twenty days from April 4—April 24, 1903.

STEARNS, H. H., acting assistant surgeon, granted leave of absence for seven days from April 15, 1903, on account of sickness, under provisions of paragraph 191 of the regulations.

WATTERS, M. H., pharmacist, granted leave of absence for eight days from May 4—April 28, 1903.

American Medicine ⁷⁶³

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Ethics and the American Medical Association.

—The report of the Committee on Ethics at the recent meeting of the House of Delegates was substantially "progress." In place of it Dr. C. A. L. Reed, that veteran reformer, moved a substitute. The chairman of the original committee seconded the motion for its consideration, and after due debate by a special committee, embracing a representative from each State, Dr. Reed's substitute was adopted with but few modifications. Let us say at once that with relatively unimportant exceptions (barring one most important omission), additions and modifications, we are decidedly in favor of what will perhaps be called this new "code," although such a name is inapplicable to it. The House of Delegates acted with splendid wisdom in adopting the main body of the substitute, and combining with it certain essential features of the report by the original committee. The report as adopted appears elsewhere in our columns. It clears the way for unity and organization of the profession in the United States, which may now march on in the new spirit of progress and practical reform to which it is predestined. The preamble of the report simply states the axiomatic truth that neither medical nor general ethics are fixed and unalterable, but are progressive and evolutionary, and that local conditions must, as a rule, govern the specific ethical statements and rules of government of medical men. As "a suggestive and advisory document," not by any means final or non-modifiable, the "Principles" should be heartily accepted by all physicians. It is democratic and in harmony with the principles upon which our general government is founded.

The relations of physicians to society are in a general way outlined in Chapters I and II. The most noteworthy statements urge the teaching of applied ethics, as related to the medical profession, as a feature of the medical curriculum, and the recognition that "physical energy, intellectual force, and moral excellence" are the necessary elements of individual character, and tend to advance ethical conduct in general. There should have been an emphasis at this place of the special medical truth that scientific research, pure truth, that love which motives original investigation and allies our calling with general science and evolution, is as conspicuous an element of character and progress as

those named. This phase comes out indirectly in the obligation of physicians to enlighten the public as to right living, to secure the enactment of laws relating to the public health, assisting in their administration, etc., and especially of promoting a better statutory regulation of the practice of medicine. We are sorry for the omission of this great truth.

The organization of the local profession is dealt with in Chapter III of the report. The basic principle of local government is accepted in full, and here, at least by implication, the finger is struck upon the ailing point of our ethical disease in the statement that the local society should consider as eligible to membership "any physician recognized as such by law and possessing a good personal and professional character, whatever may be his individual views on any question connected with the science of medicine." To that position the matter must finally be brought. The sooner the better. There is absolutely no other capable of being put in words which will bear the attack of just criticism. All "regular" physicians differ from each other as to a multitude of details regarding the science and art of medicine, and there is no logical ground for not applying for membership by sectarians because one may privately believe in certain special doctrines of "allopathy," homeopathy, eclecticism, or of any other method of cure. But this principle, admitted by us, also carries with it the obligation to accept such legal practitioners as members of our societies if they have no other disqualifications, and if they accept, as we ourselves accept, the patent corollary, that such private views as to opinions, treatment, etc., do not warrant the formation of any special "school" or title, and if there is no trading upon such distinctive specialism. For the rest the local society must form a corporate part of the State and national organizations.

Concerning Consultations.—The recommendations of the report on this subject are really most excellent. The only point upon which we should differ a little from it is where it says that, when asked for by the patient, the attending physician should always consent to a consultation, but "he himself ought not to ask for it except when in his judgment it is distinctly demanded for the welfare of the patient." Now we think that in all cases of doubt, and in many where no doubt may

exist, the welfare of the patient is conserved by consultations, especially if they are carried out with the tact and fine courtesy so perfectly advised in the body of the report. Particularly is this true, as so often happens nowadays, in the case of specialists. Concerning this aspect of consultations the "code" is, we think, unwisely silent. Physicians, however "general," are all more or less specialists, and every disease has a peculiar relation to certain organs of the senses, etc., or there is usually some one physician or surgeon known to the attendant who has an exceptional experience in a certain disease, or is peculiarly fitted to advise in its treatment. As to the scandal of bribe-taking and bribe-giving, or dividing fees, the report is not too severe—no words could be so—when it says that any person convicted of this corrupt practice should be denied all recognition and fellowship in the medical profession. They should be squarely turned out of our medical organizations.

As to the auxiliary professions, the "code" has capital recommendations. For the first time such a document recognizes the duties to nurses and the nursing profession, and especially that we should promote their societies and organizations. At last a needed word is said against working and training the girls to death. The prescribing for the sick by pharmacists is an old abuse which is properly discountenanced, and which will not be remedied except by thoroughgoing action of the united local profession. Selling secret nostrums is in reality prescribing, and should have been stigmatized as sharply as sophistication or substitution. The most criticisable sin of commission or of omission on the part of the document is the failure to say a word about the prescribing optician, the quack oculist who is "prescribing for the sick" without being a qualified physician. Far more harm is being done to the profession and to the world by this shameless quackery than by all the abuses of all the auxiliary professions combined, to which so much space is rightly devoted by the report. It is quite the fashion, and a most reprehensible one it is, to ignore and belittle this and smile at the "exaggerator;" it is a pity that this code substitute, however unintentionally, should have joined in this "conspiracy of silence." The matter will not down, either in this or any other way.

The causes of the recent epidemic of typhoid in Chicago, as investigated by residents of Hull House, is a grand piece of work and illustrates the practical cooperation of science and benevolence in a way that deserves all praise. The pamphlet is filled with tables, diagrams, and reports, which show that the house-to-house investigation by Misses Gernon and Howe, and by Dr. Alice Hamilton, was thoroughgoing. This is the kind of a "union of medicine and morals" which promises and prophesies great things for the future. The demonstration is perfect that the distribution of the disease-germs was largely through the agency of flies. The wind could not have been the means of scattering the germ-laden dust because of the constant rains before the time of the greatest virulence of the outbreak. The actual catching of the flies "on the spot" and their

bacteriologic investigation brought out the proof with convincing clearness.

Records of Cases Should be Made and Preserved by Physicians.—A physician recently tried to investigate the life and disease of a patient who for 50 years had consulted the best physicians of this country and of Europe in the hope of getting some light upon and relief from a very mysterious and severe malady. The man had been dead only a few years, and the investigation of his case had in many ways a great professional and social significance. It was highly important that every scrap of evidence should be gathered concerning his symptoms. An exhaustive search ended in the disheartening conclusion that many of the physicians and specialists consulted had not made or kept any records of the case. A number of these physicians are now living, and the sole memorandum among their books was a minute of the fees paid by the famous patient to the famous doctor. In one case the fee record was not to be found, although the mere fact of the date of the visit would have been of great importance. Scientifically and historically the fact of the fee-paying was not of the value that would have been the facts of symptomatology. Nor is it less important that case-records should be kept of the unimportant and common cases that pass under the care of the busiest practitioner. A case the details of which are not worth recording is not worth treating. Can any mind remember these particulars at subsequent visits? And when written to by other physicians under whom the patient has come for such facts, what can the earlier consultant answer? Especially if he is dead? Moreover the habit should be formed of willing to the public medical library the record-books, of course under conditions as to their use, etc., by subsequent generations. Clinical biographies will in the future play an important role in medical science, because biographic clinics will henceforth prove an important means of scientific progress.

Child Labor, Illiteracy, etc., in the Different States.—From the columns of our most estimable contemporary, *Charities*, we extract the following tables:

CHILD LABOR.

GROUP I.—Age Limit for Employment, 14 Years.

(A child may not be employed under the age of 14 years.)

1. *In Factories, Stores, etc.*—Connecticut, Illinois,* Indiana,* Massachusetts, Michigan, Minnesota,* New Hampshire (during school hours), New York, Ohio (15 years in mines), Oregon, Texas, Virginia, Wisconsin.*
2. *In Factories, etc.*—Colorado (except coal mines),* Kentucky,* Louisiana (applicable to girls), Maryland (canning industries excepted), Missouri, New Jersey, Tennessee.*
3. *In Mines Only.*—Arkansas, Idaho, Montana, Pennsylvania, South Dakota, Utah, Washington, Wyoming.

GROUP II.—Age Limit for Employment, 13 Years.

In Stores, Factories, etc.—Pennsylvania, Rhode Island.

GROUP III.—Age Limit for Employment, 12 Years.

1. *In Stores, Factories, etc.*—Arkansas, California, Maine, New Hampshire.
2. *In Factories, etc.*—Louisiana (applicable to boys), North Carolina, North Dakota,† West Virginia.†
3. *Mines Only.*—Colorado (coal mines), Iowa, Kansas (coal mines), Missouri.

* Children under 14 forbidden to work in mines.
† Children under 14 forbidden to work in mines.

GROUP IV.—Age Limit for Employment, 10 Years.

1. *In Factories.*—Alabama, South Carolina, Vermont.
2. *In Mines.*—Alabama.

GROUP V.—Miscellaneous Age Limitations.

- Alaska.—Under 21 may not be employed in bar-rooms.
 Florida.—Under 15 may not be employed more than 60 days without consent of legal guardian.
 Mississippi.—Under 21 (boys), under 18 (girls); similar to Florida.
 North Carolina.—Under 21; similar to Florida.

GROUP VI.—No Age Limit or Other Restrictions.

- Arizona, Delaware, District of Columbia, Georgia, Nevada, New Mexico, Oklahoma.

Connecticut and Massachusetts, having long set the standard of legislation for the protection and education of the working children, toward which the rest of the manufacturing States have been slowly moving, seem to have reached a limit beyond which they cannot move forward until the Middle and Southern States approach more nearly to the point reached by these enlightened pioneers.

The following table shows that a high percent of employment is concurrent with an increased percent of illiteracy and a lessened school enrolment :

States ranked according to percentage employed.	Percentage employed among applicants for insurance 10-15 years of age.	Percentage illiterate among general population 10-14 years of age, 1900.	Percentage enrolled in public schools among total population 5-18 years of age, 1900-1901.
Alabama	41.86	28.59	61.67
Georgia	27.02	22.79	65.37
Virginia	17.30	15.67	61.41
Rhode Island.....	14.23	1.88	66.54
Nebraska.....	13.75	0.34	87.30
Pennsylvania.....	13.33	1.01	68.22
Tennessee.....	13.26	14.92	75.08
Kentucky.....	12.44	8.44	73.82
Maryland.....	12.37	4.64	66.62
Louisiana.....	12.23	32.88	43.31
West Virginia.....	11.24	5.26	78.59
Texas.....	10.62	9.26	64.67
New Jersey.....	10.49	1.19	69.60
Missouri.....	10.34	3.36	76.61
Maine.....	10.17	2.08	82.43
Delaware.....	9.40	4.51	75.32
Ohio.....	9.08	0.49	74.75
New York.....	8.53	0.74	70.10
Illinois.....	8.31	0.82	70.63
Connecticut.....	7.69	0.57	72.78
Iowa.....	7.30	0.37	87.14
Indiana.....	7.24	0.55	78.87
New Hampshire.....	6.96	1.69	73.97
Wisconsin.....	6.81	0.73	71.52
Massachusetts.....	6.49	0.67	73.77
Arkansas.....	6.43	6.20	72.01
Michigan.....	5.91	0.70	77.11
District of Columbia.....	5.71	1.75	76.84
Vermont.....	5.03	0.95	81.26
Minnesota.....	4.79	0.71	76.03
Kansas.....	4.40	0.52	87.08

“The Medical Annals of Maryland,” 1799-1899, prepared for the centennial of the Medical and Chirurgical Faculty by Eugene Fauntleroy Cordell, M.D., is a noble historical work. The study of medical history, which is at last interesting the profession more and more, is worthy of congratulation and encouragement. We see where we are and better realize what we still have to do by knowing our past and of the high-hearted struggle by our professional ancestors to rise above the dismal surroundings of early times, the “swarms of quacks,” and even their own internecine wrangles and jealousies. We are still building the temple of medical wisdom, the rough foundation stones for which they hewed with such labor and zeal. We are yet too far from “organized,” as they planned we should some time be. The charter issued to the 101 incorporators of the

Medical and Chirurgical Faculty in June, 1799, was the real beginning of medical civilization in Maryland, and through the power it conferred, especially upon its board of examiners to issue licenses, there was a beginning of the end of quackery, of newspaper advertising, and of washing the professional dirty linen before the public eye. Those who carried on this “insult to common decency, subversive of good morals,” were summarily expelled, their offenses not as now condoned, and every influence was encouraged until now the professional standards of no State are higher and purer. All Marylanders may be justly proud of their Medical and Chirurgical Faculty.

The attention of the antivivisectionists is called to the recently-arrived fad of some of their vivisection friends who are making dogs fashionably beautiful by means of surgical operations. Regular establishments, it appears, or hospitals, “for revenue only,” be it noted, are in existence for reducing the dog as nature makes him to the dog as he is desired by the vivisectionists. The following is part of the schedule of prices of the dog-artist :

Altering shape of nose	\$10 00
Making straight tails kinky or curly	5 00
Reducing thickness of tails	5 00
Removing or adding marks	5 00
Changing erect ears to drooping, and vice versa ..	5 00
Making a straight coat curly, and vice versa ..	7 50
Changing color or coat	7 50
Bowing bulldogs' forelegs	25 00
Plucking superfluous hair, per hour	1 00
Prinkling bulldogs' faces	20 00

In these prices board and nursing are not included, though the after-treatment of a dog that has been operated on requires him to remain in hospital sometimes for several months. His board under these circumstances costs \$2 a week, and there is an extra charge of 50 cents a week for medicines.

The place is said to be “kept as sanitary as a hospital,” for “if we didn't the dogs we operate upon would die.” The “dangerous and painful operations” are “never performed here,” as we consider them cruel. “Breaking the tails of the pups in two places,” or “sandpapering the tail,” “loosening the teeth and making them project,” etc., are some of the “painless” operations which alone “the respectable breeder” will do. If this “breeder” were an M.D. and the “place” were called a “laboratory,” what a hard time of it they would have!

There Are More Things in Radium Than Are Dreamt of in Our Philosophy.—Physics had definitely settled down to a definite conviction as regards the development and laws of force when suddenly a substance is found that seems to upset that conviction entirely. Without apparently receiving any new accessions of energy the new element radium gives off a continual stream of energy without diminution of its own matter. Plainly a new philosophy is required, and forthwith the experts set about the work. The lesson for us is only indirect, but none the less clear; we must keep our minds open so that new facts may be observed, and more imperative still, we must be ready to profit by new discoveries, or by the rediscovery of old ones, so that our medical theories and therapeutics may avail themselves quickly of the new standpoints. The law

of the conservation of energy is not abrogated, but a larger and clearer view of it is gained. So the old laws of health and disease are not done away with, but medical truth fashions our views anew and makes us see truth in novel ways and from a more far-looking point of view. A new and yet an old beatitude of science is, Blessed are they who keep their minds open for new truth.

Overstudy and the Nervous School-child—such are the topics earnestly discussed by societies for the study of school problems, by school superintendents, teachers, parents, physicians, and by editorial writers. An eminent professor of pedagogics in a vehement address repeatedly demands that the will of the bad school-child shall be "broken" exactly as one "breaks a colt." This Rarey and cowboy type of child-breaker divides "the nervous child" into four classes: 1. With undergrade mind, well-nourished, destructive, and extremely violent when angered, and even homicidal. 2. The anemic, active, alert, overstrung boy, liable to sullenness and even epileptic fits when disciplined. 3. The highstrung oversensitive girl, so sensitive as almost to go insane in trying to do right. 4. The vicious, self assertive, ill-tempered boy with criminal tendencies. Such ill observation as this argues the poor diagnosis and treatment we find. In some cities the nervous child is moving parents and physicians to appeal for fewer hours in the schools and less pressure. We do not much believe in the intellect, the morals, or the pedagogics of the colt-breakers or the boy-breakers. There are better ways to break a horse or a child than to break its will, and the teacher that entertains such diabolic theories should be "broken." The noteworthy fact about the whole discussion is the utter omission from a hundred papers and editorials and discussions of the most important element of the entire matter. There are, it is true, many other factors; there is really overstudy and overpressure, but the one cause of the nervous child which is ignored, but which is as prolific a source of evil as perhaps all others combined, is eyestrain.

Professor J. W. Runeberg.—The northernmost university in the world is at Helsingfors, Finland, a town of about 67,000 inhabitants. For quality of work this subarctic school of learning ranks with the greatest of Old World universities. The limited material is utilized to the very best possible advantage. As an evidence of this, we refer to the Festschrift published in honor of the sixtieth birthday and the twenty-fifth anniversary of the professoriat of J. W. Runeberg,¹ which contains 20 articles, nearly all of marked value, by Runeberg's pupils. Some years ago the students of Dr. Homén, the pathologist of the university, issued a similar volume devoted entirely to a study of the streptococcus and of its pathogenic effects. We fear that the breaking of the Finnish national spirit by Russia will be harmful to the work of the university, which now is intellectually under German influence. We have an example of this in Dorpat, which since its Russification has not maintained its former high standard.

¹ Zeitschrift für klin. Med., Bd. xlix, Hfte. 1, 4.

AMERICAN NEWS AND NOTES.

GENERAL.

Leper Colony for the Philippine Islands.—According to a recent report, plans are actively progressing for the establishment of a leper colony on the island of Culio in the Philippines. It is estimated that there are over 10,000 lepers in the archipelago and that there is a pressing necessity for the adoption of a system looking to the segregation of the lepers and the eventual extermination of the disease from the archipelago. There are at present a few hundred native inhabitants on Culio, but it is not believed that it will be necessary to remove them, as in all probability their part of the island will not be used for the colony.

Plague has been discovered in Callao, Peru. The authorities have closed and isolated a flour mill where the first cases were said to have originated. Forty laborers who were employed in the mill have been quarantined. The Board of Health insists that it is necessary that the mill be burned, but the British Consul and shareholders have entered a protest to the government against burning it, as the plant is estimated to be worth \$300,000. The plague was supposed to have originated from rice in the mill, which was unloaded from the ship "Serapis," which recently arrived from India. Dispatches from Pisco announce the spread of the plague at that port. Several new cases have been reported to the authorities. Active measures are being taken at both Callao and Pisco to destroy all rats.

EASTERN STATES.

The American Mothers' Birth Insurance Company, which was recently incorporated in Boston, is the first organization of the sort ever incorporated in the United States. It has been formed for the purpose of paying a sickness or disability benefit upon the birth of a living child to any member. To provide insurance at cost the officers will serve without compensation other than the actual expenses incident to membership and such services.

Massachusetts General Hospital.—The annual report of the Massachusetts General Hospital, which was published recently, states that the total number of patients treated at the institution, exclusive of the out-patient department, amounts to 5,199, a decrease of 154 over the previous year. In the out-patient department 27,662 new patients were treated, which is 5 less than in 1901. The number treated in the accident-room was about 1,000 less, but this was probably due to the establishment of the relief station at the City Hospital. Several buildings which have been in process of construction for the past few years have been completed. A children's ward has been added to the hospital, and it is expected that the new out-patient department will be open to the public some time during the summer.

NEW YORK.

Scarlet Fever in Navy Yard.—It is reported that scarlet fever has broken out upon the receiving ship "Columbia," stationed at Brooklyn Navy Yard. Three of the crew have contracted the disease within the week. The strictest quarantine will be placed on the ship. The "Columbia" has accommodations for 500 sailors only, but at present there are over 1,000 on board.

Typhoid Epidemic at Ithaca.—It is reported that up to the present time 955 cases with 64 deaths from typhoid fever have occurred in Ithaca. Of the total number 288 cases occurred among the Cornell students, and of these 29 terminated fatally. Dr. George Soper, who as the representative of the State Board of Health has been in Ithaca aiding the local authorities to stamp out the disease, dwells upon the necessity for a liberal expenditure of money in order that the work may be prosecuted unimpeded. He states that in view of the large amount of infectious material which has been discharged in the city this is imperative. The water has been examined repeatedly and is still polluted and impure, although it cannot be said positively that there are now any typhoid germs in it.

PHILADELPHIA, PENNSYLVANIA, ETC.

Kensington Hospital for Women.—During the month of April 84 patients were under treatment. There were 40 patients in the hospital April 1, and 38 are under treatment at the present time. Seventeen abdominal sections and 77 other operations have been performed. In the dispensary there have been 67 new patients, who have made 255 visits.

Pennsylvania Hospital.—At the annual meeting held recently the board of managers of the Pennsylvania Hospital reported that the expenditure entailed in running the institution during the past year amounted to \$135,185, which is \$37,000 in excess of its income. A strong plea was made to the friends of the hospital to add to its permanent endowment, in order that the work might not be curtailed. During the year 40,701 persons received treatment, and of these only a comparatively small proportion paid for board and treatment.

Cerebrospinal Meningitis at League Island.—According to press reports, cerebrospinal meningitis has appeared among the 1,200 men aboard the receiving ships "Minneapolis" and "Puritan" at the League Island Navy Yard. Three deaths have occurred, and five other victims are still struggling with the disease. A heroic effort will be made to prevent the spread of the disease, not only by constantly watching the men, but by removing them entirely from the two ships. Thirty-five tents will be erected, and the 1,200 men will be put out to camp as soon as possible. It is thought this measure will materially lessen the further spread of the disease. The ships will be thoroughly fumigated in order to rid them of any bacteria that may have been responsible for the disease.

SOUTHERN STATES.

Medical Department Instruction.—The course of instruction in the medical department has been amended so that hereafter it will be under the supervision of the senior medical officer, and other medical and noncommissioned officers may act as instructors in the assigned subjects.

To Revise Hospital Corps Regulations.—A board of Army officers has been ordered to meet in Washington, D. C., May 18, to revise that part of the Army regulations referring to the hospital corps. They have been instructed to outline rules for first-aid to the injured, and to prepare a scheme and course of instruction for members of the hospital corps.

Examination for Position of Assistant Surgeon.—An examination of the candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service will be held June 15, 1903, at the Bureau of the Public Health and Marine-Hospital Service, Washington, D. C. Candidates must be between 22 and 30, graduates of a reputable medical college, and must furnish at least two testimonials from responsible persons as to their professional and moral character. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. For further information or for invitation to appear before the Board of Examiners, address Walter Wyman, Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C.

WESTERN STATES.

The Dubuque Medical Society of Dubuque, Iowa, will hold its fiftieth annual meeting June 18, 1903. An interesting program has been prepared.

"Water Cure" Administered in Insane Asylum.—An attendant at the Topeka (Kansas) Asylum for the Insane, in her testimony before the legislative investigation committee, stated that it was customary to administer the "water cure" to refractory patients. She swore that when a patient refused to obey orders given by the superintendent the attendants were ordered to throw a sheet over the patient's head and throw her to the floor. While attendants held the patient the superintendent poured water out of a pan into the patient's face. The pouring was continued until the patient agreed to obey orders.

Plague Abated.—In his report U. S. Surgeon Glennon, stationed at San Francisco, makes the following report with reference to plague in that city: The Board of Health, working with the Board of Public Works, commenced March 30 a vigorous assault against the maintenance of certain insanitary structures in Chinatown. Rear areas, alleys, and courts, which were originally intended to admit sunlight and air, have been gradually encroached upon until many of them are now entirely choked up by small wooden structures built on the sides of the houses from the top floor to basement. As a rule, these board shacks inclose water-closets, kitchens, and sleeping bunks, in many of which the plumbing is defective, their floors and roofs supporting accumulations of every conceivable sort of debris and filth. It is the purpose of the Board of Health, unless enjoined by the courts, to demolish all these "excrecences" and afterward to lime-wash the walls from roof to basement. In the work already accomplished, President Case, accompanied by Health Officer O'Brien, and Chief Sanitary Inspector Hassler, personally directed a gang of laborers in their operations. It is gratifying to all concerned that no case of plague has occurred among the Chinese population since December 11, 1902, and it is hoped that the vigorous measures for the eradication of the disease which have been enforced, and are still being enforced, will continue to show such good results.

CANADA.

New Hospital for Epileptics.—The Ontario Government has appropriated \$30,000 to erect a hospital for epileptics at Woodstock. The insane in Ontario are classified as harmless (such as epileptics), curable, and incurable. It is hoped that in time all three classes will be kept in separate buildings.

Amendment to the Medical Practice Act.—An amendment which was recently introduced into the New Brunswick Legislature provides that "No duly registered practitioner in that province shall be liable to any action for negligence or malpractice by reason of professional services, unless such

action is commenced within one year from the date when in the matter complaint of such professional services terminated."

FOREIGN NEWS AND NOTES

GENERAL.

Contract Medical Practice in Germany.—It is reported that the medical officers of the sick funds in Germany will strike in a body on July 1, unless their demands for more adequate remuneration be conceded. The statement is made that under the present arrangement they only receive about five cents a visit.

Röntgen Ray Experiment.—Lord Rayleigh's reference to Professor Blondiot's recent experiments regarding the polarizing of the Röntgen rays, suggests that the mystery regarding the true character of these curious emanations is about to be cleared up. If Professor Blondiot's results are confirmed, and the Röntgen ray proves to be polarizable, it will be classed as light whose peculiar properties are due to its very short wave length.

Badges for Opium Smokers.—In order to indicate the different classes of opium smokers to the officers who administer this drug under government patronage in Fukien, China, a system of badges has been placed in operation. In discussing this badge system the *Ma Po*, the Chinese daily paper of Manila, makes the following statements: "The authorities of the province of Fukien, to which nearly all of the Chinese of Manila belong, have planned to establish a government factory for the preparation of opium; and now it is reported that after the opening of this establishment all opium smokers who wish to purchase the drug must obtain from this establishment badges, which are of three classes: (1) Brass badge, which is for the government officials; (2) paper badge, which is for the gentry; and (3) wooden badge, which is for the common people. On these badges are written the names of the opium smokers, their ages, addresses, and the quantity of opium they are allowed to buy daily, which is to be decided and limited by the government officials, and which cannot be deviated from at any time. All the opium dealers who have received licenses from the government to retail the boiled or prepared opium are not permitted to sell privately any opium to those who do not have badges. According to this plan it is expected that the opium smokers will feel ashamed of wearing these badges and reform themselves generally by breaking off the evil habit."

GREAT BRITAIN.

The Increase in Cancer Mortality.—According to the Registrar-General of Ireland, during the year 1901 cancer caused 2,893 deaths in Ireland, in 1900 the number was 2,717. The deaths in 1901 represent a rate of 6.5 per 10,000 of the estimated population, an increase of 0.4 per 10,000 living, as compared with the rate for 1900. The steady increase in the recorded mortality from cancer in all three parts of the United Kingdom is remarkable. In Ireland in 1864, the first year in which the registration system was in force, the rate of mortality was 2.7 per 10,000 living. In 1871 it had risen to 3.2; in 1881 to 2.7; in 1891 to 4.6; and, as already stated, in 1901 it reached 6.5. In England (including Wales), in 1864 the rate was 3.9. In 1871 it was 4.2; in 1881, 5.2; in 1891, 6.9; and in 1900 it had risen to 8.3. In Scotland in 1864 the rate was 4.3; in 1871 it was 4.4; in 1881, 5.2; in 1891, 6.8; and in 1900, 8.0. In Ireland the deathrate from cancer in 1891 was 4.6 per 10,000 of the population, and in 1900 it had risen to 6.1 per 10,000. The report closes with the following conclusions: Experience proves that in many cases cancer recurs in the same family; that frequently, when a member of a family is afflicted with the malady, other members suffer from tuberculosis; that in a number of instances, when members of a family were afflicted with cancer, other members suffered from lunacy, idiocy, or epilepsy; that in some cases the disease has occurred in persons who have been in direct contact with cancer patients; that the disease has manifested itself in individuals who have used the tobacco pipes of persons suffering from cancer of the lip; that in some instances more than one case has occurred in different families living in the same house, and successive occupants of the same house, that in a few cases the disease has appeared in different houses in the same locality about the same time; and that it frequently shows itself when conditions of residence food, etc., are bad.

CONTINENTAL EUROPE.

Victoria Memorial Hospital at Nice.—The cornerstone of the new Victoria Memorial Hospital to be erected at Nice was laid May 7 with imposing ceremonies.

Plan to Save French Babies.—It is reported that a poly-clinic has been opened in Paris by Baron Henry D. Rothschild, who proposes to give lectures to medical students and doctors on the treatment of newborn children, among whom the mortality is so great.

An Epidemic of Intestinal Disease Among Miners.—It is reported that the coal mining industry in Westphalia is being seriously hampered by a sickness among the miners arising from an intestinal parasite. It is stated that about 20,000 miners are affected, and that the disease has spread so rapidly that the sickness is almost universal. Temporary barracks and isolation hospitals are being erected to prevent the spread of the disease and to enable scientific investigation.

OBITUARIES.

John J. Healy, of Philadelphia, May 8, aged 54. He was graduated from the medical department of the University of Pennsylvania in 1872. He then went to Vienna to pursue a postgraduate course and after two years' work in various European hospitals returned to Philadelphia and accepted a position on the staff of St. Mary's Hospital. He was a member of the County Medical Society, and was for a long time pension examiner. Since 1899 he had been a member of the Board of Inspectors of the Eastern Penitentiary. He was a Founder of *American Medicine*.

Herman H. Schaberg, of Kalamazoo, Mich., April 24, aged 54. He was graduated from the Detroit College of Medicine in 1878. He was a member of the American Medical Association and the Kalamazoo Academy of Medicine. He also served as health officer and city physician of Kalamazoo.

Emily H. Stowe, of Toronto, Ont., died recently. She was graduated from the New York Medical College and Hospital for Women in 1867 and was the first woman physician to practise medicine in Canada. She retired from active practice in 1893.

Hiram Long, in Suabury, Pa., April 24, aged 71. He was graduated from the New York Medical College, New York City, in 1859. He was a surgeon during the Civil war and was several times president of the Sunbury Medical Association.

Alvin B. Rice, of Jamestown, N. Y., May 8. He was graduated from the Bellevue Hospital Medical College, New York City, in 1867. He was vice-president of the New York State Homeopathic Medical Society.

William F. Wooden, in Greensburg, Ohio, April 23, aged 45. He was graduated from the Medical College of Ohio, Cincinnati, in 1879, and was a member of the Decatur County (Ind.) Medical Society.

Samuel Bridgman, at Bracebridge, Ont., aged 56. He was graduated from the Queen's University, Kingston, in 1870. He had been a member of the Legislature since 1898.

Addison C. Hinkson, of Nevada City, Cal., died in San Francisco, April 22, aged 28. He was graduated from the College of Physicians and Surgeons of San Francisco in 1901.

Benjamin Morris, formerly of Martinsville, Va., died near Rangeley, Va., April 15. He was a graduate of the University of Virginia, Charlottesville.

Rufus O. Mason, of New York City, May 11, aged 73. He was graduated from the College of Physicians and Surgeons, New York City, in 1859.

Stephen H. Rice, of Memphis, Tenn., May 6. He was graduated from the medical department of the University of Pennsylvania in 1893.

Andrew Joy, of Evergreen, Ala., May 8. He was graduated from the medical department of the University of Alabama, Mobile, in 1872.

William K. Davis, in Utica, N. Y., April 19, aged 47. He was graduated from the Eclectic Medical College of New York City in 1891.

Thomas A. Pineo, in Brooklyn, N. Y., April 19, aged 38. He was graduated from the Long Island College Hospital, Brooklyn, in 1898.

John I. Dyer, of Washington, D. C., May 9, aged 76. He was graduated from the National Medical College, Washington, D. C., in 1847.

H. T. Breckbill, in Columbus Grove, Ohio, April 22, aged 60. He was graduated from the Puitt Medical College, Cincinnati, in 1878.

Edwin B. Reed, at Little Tognus, Me., April 24, aged 65. He was a graduate of the University of Pennsylvania, Philadelphia.

William W. Miller, in Pittsburg, Pa., April 16. He was a graduate of the Western Pennsylvania Medical College, Pittsburg.

R. B. Cotton, of Regina, N. W. T., May 6, aged 48. He was graduated from the Toronto University, Toronto, Ont., in 1886.

James R. Todd, in Gridley, Cal., April 21, aged 59. He was graduated from the Kansas City Medical College in 1883.

Edward de la Granja, of Boston, Mass., May 9. He was graduated from the Central University of Spain in 1855.

Charles E. Reese, in Lowndesboro, Ala., April 25. He was graduated from the Jefferson Medical College in 1855.

J. M. Newell, in Rochester, N. Y., April 23, aged 82. He was graduated from the University of Buffalo in 1873.

D. J. Grandstoff, in Mason, Tex., April 22. He was graduated from the Louisville Medical College in 1878.

Harold H. Haas, an assistant surgeon in the United States Navy, died at Staunton, Va., May 5.

Roswell E. James, in Kalamazoo, Mich., April 23, aged 68.

Robert M. Morgan, in Decherd, Tenn., April 25, aged 70.

SOCIETY REPORTS

AMERICAN MEDICAL ASSOCIATION.

Fifty-fourth Annual Meeting, Held at New Orleans, La.,
May 5 to 8, 1903.

[Specially reported for *American Medicine*.]

House of Delegates.

Owing to the fear of the difficulty of completing within the period of the meetings the entire amount of business mapped out for the House of Delegates, meetings were begun on Monday afternoon. The Monday meetings, however, were unofficial, since, in order to have the proceedings legal, certain business of the meetings must be held solely in the duly announced periods. At the first meeting the report of the Committee on the Prophylaxis of Venereal Diseases was read, and after brief discussion was referred to the Business Committee. The organization of the body was then practically completed. The Chairman of the Business Committee, HAROLD N. MOYER, stated that the evening meeting was not legal, and would require a full and unanimous vote of the House in order to legalize its proceedings. This was on motion granted, and meeting was recommended for the following afternoon, but it was decided that certain reports be considered at the present meeting. Roll-call showed 48 delegates present.

The report of the Board of Trustees was read by Dr. HAPPEL, chairman, showing the total assets of the Association to be \$131,821.16, the profits for the year 1902, \$40,140.56.

Report was made by the Committee on National Incorporation with the object of enabling the American Medical Association to meet in any State or Territory in the Union to transact and complete its business without holding an adjourned meeting in Illinois in order to ratify action taken at the annual conventions. The opinion of the counsel employed by the committee was that such national incorporation was an impossibility. The constitution and by-laws adopted at the meeting at St. Paul had no binding force until they were readopted in Illinois, but the action at Saratoga and readopted at Chicago is legal and the charter and by-laws governing the Association at present are legal since they were readopted in Illinois, where the Association was incorporated. Suggestion was made that \$50 be appropriated for the secretary of each section for postage, etc. After proposing and adopting minor changes in the button, etc., the meeting adjourned.

General Sessions.

In the meeting of the general sessions at 11 o'clock, Tuesday morning, the fifty-fourth annual convention was formally opened. Prayer was offered by Rev. Dr. H. G. DAVIS and Mayor CAPDEVILLE welcomed the physicians on behalf of the city, alluding in happy phrase to the work of the profession in New Orleans and Louisiana. He was followed by General LEON JASTREMSKI, who welcomed the Association on behalf of the State in the absence of Governor Heard. HENRY P. DART then spoke on behalf of the Louisiana Bar, representing the laity. He urged legislation on behalf of the Association that would regulate the relation of the physician to his patient, and spoke particularly of the great hospital system which rested upon the profession as did the ancient world upon the shoulders of Atlas. These addresses were responded to in a most happy vein by an extempore address delivered by J. A. WITHERSPOON, vice-president of the Association. The annual address of the president was then delivered by FRANK BILLINGS. It will be found in full in the issue of *American Medicine* of May 9.

House of Delegates.

At the first formal meeting of the House of Delegates, Tuesday afternoon, 70 responded to the roll-call. President BILLINGS made a brief address referring to the work of reorganization recommended by the Board of Trustees and adopted. He recommended the continuing in the field as reorganizer Dr. J. N. McCormack, who had done such efficient work during the past year. In view of the fact that the Rush Monument would be dedicated next year at Washington, he suggested that the next annual meeting be held there. He also referred to the disadvantages of the present system for selecting a meeting place, and advised that the committee having this matter in charge be made permanent, and that all cities desiring the Association to meet with them should make application at least three months before the date of meeting, accompanying this application with full details as to the inducements, etc. He alluded to the Section on Stomatology, which had been established after considerable labor, and was now imperiled unless some ruling should be made whereby the degree of D.D.S. would admit to affiliation with the Association. The death of Walter Reed was alluded to as a national calamity, and a plea was made for some suitable memorial by the Association.

The report of the Secretary of the Association followed. Dr. SIMMONS stated that the work of verification of membership was only partially completed; 146 members had been dropped, but the increase in the membership was material.

The Business Committee reported favorably on the reports

submitted by the Board of Trustees, regretting that national incorporation was not possible.

ELIOT HARRIS, of New York, Chairman of the Provisional Committee on National Bureau of Medicines and Foods, submitted a favorable report on the proposition, and recommended that the committee be continued and authorized to cooperate with a committee of the American Pharmaceutical Association and to confer with the government authorities.

ELIOT HARRIS, Chairman of the Committee on Revision of the Code of Medical Ethics, made a report in general terms, advocating discontinuance of the word "code" and substituting the word "principle" instead, allowing different States to formulate working rules and penalties, provided such be not in conflict with the established principles of the Association. He stated that they had decided to retain the existing code almost in its entirety, the changes being chiefly in the interests of brevity. C. A. L. REED offered a "substitute report," which he called a statement of principles which should be advisory not mandatory. After some discussion this matter was referred to a special enlarged committee consisting of the original committee with the addition of one member of the House of Delegates from each State not already represented on the committee, to meet directly after adjournment. Dr. Reed's substitute and the original report were placed under the consideration of this committee.

Section 4, Chapter 7, of the by-laws, referring to the nomination and election of officers, was changed to facilitate the work of the House of Delegates. It was adopted.

Section 1 of Article 4 of the constitution, referring to the constitution of the House of Delegates, was amended by adding the officers of the Association to the House of Delegates.

Another section, incapacitating the officers from being re-elected, was changed.

Finally all the amendments but the first, in regard to the election of officers, were referred to the Business Committee.

LEWIS S. McMURRY, Chairman of the Committee on Association Medal, asked that the committee be empowered to draw specifications for the award of the prize, which was granted.

The Committee on Senn Medal reported unanimously that none of the papers submitted had met the requirements, therefore no medal was awarded. The report was accepted.

The Committee on Rush Monument, through Chairman H. D. HOLTON, reported that all but one of the original committee named many years ago were dead. He told of the work of the committee, and said that the fund now amounted to \$15,000. Contracts had been made for the monument to be placed in Washington. It will be completed and ready for unveiling early next year. This committee asked for \$500 to defray expenses of unveiling. The report was received and referred to the Board of Trustees, with recommendation that the funds asked for be granted.

General Sessions.

At the second meeting of the general sessions, A. F. JONAS delivered the oration on surgery, which appears in the issue of *American Medicine* of May 9.

J. RAWSON PENNINGTON, of the Portrait Committee, stated that two portraits of ex-presidents had been prepared for the Hall of Fame, and that Edmond Souchon, president of the State Board of Health, would present that of T. G. Richardson, the first and only Louisianian to be elected president of the American Medical Association.

House of Delegates.

At the meeting Wednesday morning, the Committee on Medical Legislation reported on the efforts made to defeat the bill before Congress for the "regulation" of vivisection. Resolution was adopted by the House commending the efforts of the committee and deprecating further consideration of such measures by the national body.

WELCH (Baltimore) urged the importance of having a medical man on the Isthmian Canal Commission on account of the well-known unsanitary conditions prevailing. A resolution was adopted asking President Roosevelt to name a medical man as one of the members of the Commission.

The Business Committee recommended that the report of the Committee on the establishment of the National Bureau of Medicines and Foods be not adopted, because it was vague and indefinite. It was recommended that the matter be referred to the Committee on Legislation. PHILIP MILLS JONES urged immediate action because it had been pending so long already. He claimed the delay had already been great and if the present report was not adopted four years at least would elapse before anything was accomplished. FOSHAY supported the recommendation of the Business Committee, saying the report had not been presented in a form permitting its adoption. The Association was asked to appoint trustees for an institution, but there was no definition as to where this would lead. He thought a Bureau of this nature should be under the direction of the government. The report of the committee was read by MOYER. It contained no definite recommendation other than asking to be continued in office to confer with a committee of the American Pharmaceutical Association under government authorities. The report was recommitted to the original committee.

J. N. McCormack was commended for his work as organizer and urged to continue. His report on the work of reorganization followed. He said that 18 States had adopted practically a uniform constitution with phenomenal results, the increase in membership in such States being from 300% to 400%. The purpose of the movement was to secure not only systematic, but uniform work. Effort had been made in some States to organize on other lines, and unless this was discouraged it might defeat the whole plan of organization. The sum of \$500 was appropriated for expenses of Committee on Reorganization.

General Sessions.

At the meeting 7.30 p.m. Wednesday evening the oration in medicine was delivered by J. M. ANDERS (Philadelphia). Dr. Anders' address appears in full in *American Medicine* for May 9.

W. L. RODMAN (Philadelphia) presented a portrait of the late Dr. Hunter McGuire, of Virginia, to the Association for its Hall of Fame, with a eulogy of his life and work. By motion the Association accepted the portraits of Drs. McGuire and Richardson. A motion that every retiring president present to the Association a portrait of himself was lost.

House of Delegates.

At the meeting Thursday morning an appropriation of \$500 was made to meet the expenses of the Committee on Scientific Exhibits. A resolution was adopted that amendments to the constitution or by-laws be not considered unless presented at the preceding annual meeting.

The report of the Committee on Prophylaxis of Venereal Diseases was adopted. A congress will be held in St. Louis during the Louisiana Purchase Exposition, a committee of one from each State making the arrangements for the same. The Association appropriated \$500 for the expenses of the congress, and voted to ask an appropriation of \$5,000 from Congress to further the work.

Provision was made for certification by the secretary of dental and pharmaceutical graduates as associate members of the Association.

The enlarged Committee on Revision of the Code submitted a report which had been unanimously adopted by the committee. [This appears elsewhere in full.] The committee said it formulated a set of ethical principles as a guide to State associations in formulating codes and penalties to suit local conditions. Dr. REED stated that by adopting the report as given an end would be made to the controversies that had existed for many years. Upon the adoption of the report the House broke into tumultuous applause.

The Committee on Transportation and Place of Meeting recommended Atlantic City as the next place of meeting, and the report was adopted.

General Sessions.

WILLIAM H. WELCH (Baltimore) delivered the oration of State medicine on "Infectious Diseases" Thursday evening. This address will be given in a future number of *American Medicine*. After the delivery of Dr. Welch's address Dr. BILLINGS, in a few well-chosen words, called attention to the great work done by Dr. Welch in stimulating the profession. The three greatest discoveries of the era, the bacillus of cholera infantum, the germ of smallpox, and the theory of the transmission of yellow fever by mosquitos had all been worked out by students of Dr. Welch. Dr. Welch has fertilized more men in the profession to the honor and profit of medical science than any other man in the profession today, and his self-sacrifice and abnegation, his generosity to those working with and under him, will constitute an important element in his future fame.

House of Delegates.

At the meeting of the House of Delegates on Friday morning the following officers were elected: President, John H. Musser, of Philadelphia, Pa.; first vice-president, G. C. Savage, of Nashville, Tenn.; second vice-president, Isadore Dyer, New Orleans; third vice-president, C. L. Hall, Kansas City, Mo.; fourth vice-president, Geo. F. Jenkins, Iowa; treasurer, Henry P. Newman, Chicago, Ill.; secretary and editor, George H. Simmons, Chicago, Ill.; oration in surgery, W. J. Mayo, of Rochester, Minn.; oration in medicine, George Dock, Ann Arbor, Mich., and oration on State medicine, Herman M. Biggs, of New York City.

Owing to the absence of Dr. Musser, who had left the city on Thursday evening, it was resolved that the term of President Billings hold over until the beginning of the next session. It was said that this is the plan adopted by the British Medical Association and had the advantage that the president nominated for the following year had the assistance and advice for one year of the retiring president.

William H. Welch, of Baltimore; Miles F. Porter, of Fort Wayne, Ind., and M. L. Harris, of Chicago, were elected trustees. Frederick Holme Wiggan, of New York; C. B. Gillespie, of Tennessee, and D. C. Peyton, of Indiana, were elected members of the Judicial Council. The convention was declared formally adjourned at noon on Friday.

Section on Practice of Medicine.

FIRST SESSION.

Continued Fever Neither Malarial Nor Typhoid.—T. J. HAPPEL said southern practitioners have observed a continuous fever which presents none of the classic symptoms of typhoid nor malaria, except its duration, this varying from three to five weeks with an average of about four weeks. Examinations of the blood both chemically and microscopically thus far negative typhoid and malaria, but as yet affirm no other nosologic entity. The mortality is almost nil, hence no cases have come to necropsy. He has treated 100 cases and he finds a marked disproportion between the pulse and the temperature, the ratio being often inverse. One case is detailed which persisted for four weeks, there being two rises and falls of temperature in every 24 hours; quinin in large or small doses has no effect. Reference is made to too frequent neglect of bedside work and too implicit faith in the microscope. When these differ he prefers the evidence as furnished by bedside investigation. In this disease there is a frequent aching of various groups of muscles, as seen in influenza, the pulse ranges from 70 to 90, and the temperature may vary anywhere from 100° F. to 105° F. A high temperature may be present when the body surface feels cool. Is it not probable that a further classification of continued fevers may show this to be a distinct type, as has been found in the eruptive fevers?

Discussion.—JAMES TYSON said after an experience of 30 years he would limit rather than extend the number of continued fevers. He frequently has anomalous cases, but persistent blood examination generally proves them to be one of the common types. Ptomains in the alimentary tract may cause a fever of some duration. WITHERSPOON holds to the new fever theory. He disclaims any knowledge of the etiology but suggests possibly some form of infection in the alimentary tract. The whole clinical picture differs from that of typhoid. It begins suddenly; it has no predilection for season of year or age of patient; one attack does not confer immunity; he has found the pulse rapid as a rule; prostration is marked; fever is irregular; there are no rose-spots and no tympany; constipation is the rule; the tongue is not indicative of typhoid; there is no mental hebetude; the patient is hungry most of the time; and herpes labialis is common.

Restorative Influences of Ozone on the Blood.—G. LENOX CURTIS emphasized the importance of early examination of the blood on the prognosis and treatment. Not until he had abandoned the examination of dried and stained specimens and resorted to examination of blood in the fresh state did he make any real progress in diagnosing cases from blood examination. He places considerable stress on photography of blood in the fresh state, claiming this was to determine a pathologic condition of the system when no real symptoms are present, and the further claim is made that photography reveals tuberculous elements in the blood at a very early state. In regard to treating many of the incipient and latent conditions great importance is attached to oxygenation, or ozonation of the blood. This is accomplished by means of a special apparatus employed by the author, the principle being that through the agency of the electric current oxygen is converted into ozone and is caused to enter the general system. Here it possesses great power to rehabilitate the blood. F. R. WEBBER asserted that Virchow long ago taught the importance of examining blood and other tissues in the fresh state. The photographs exhibited by Curtis as illustrating pathologic conditions of the blood were mere exhibitions of artefacts and proved none of the claims of the writer. The claim that tuberculous material can be shown by photograph of the blood is wholly incorrect. The electric currents of high frequency and high potency merely influence the blood-pressure.

Ninety Cases of Typhoid Fever: The Therapy of Fasting.—R. M. HARBIN states that of the 90 cases 4 died; 23.8 years was the average age of the patient, and among all farmers bear the disease least well. Physicians and nurses appear to possess a somewhat relative immunity to typhoid. Typhoid constitutes more illness in the South than any diseases except tuberculosis and pneumonia. The twelfth census report shows that the mortality rate in the South from enteric fever is very high and it shows that well-water is probably the source of the infection in most of the cases. Emaciations occur regardless of the amount of food taken and a restricted diet is indicated because of the pathologic conditions. Certain severe sthenic cases are relieved better by fasting, as the active symptoms exhaust the patient more rapidly than the lack of food. Gelatin prevents too rapid emaciation and it inhibits hemorrhage. The cold, modified cold, or hot bath is more effective during fasting. The proper treatment of intestinal ulcers is rest, peristalsis favors the absorptions of toxins, and cathartics should be used only to remove undigested food. The presence of diarrhea and fasting indicate treatment by fasting. Many fasting cases run an abortive course after the amphibolic period. Many vaunted cures from specific drugs are really dietetic. In this report 45 cases were treated without a death. Of 87 whites 2 died; of colored 2 died, making a mortality rate of 4.4%. This favorable showing is ascribed to the method of treatment.

Southern Fevers.—WILLIAM KRAUSS reported the clinical and laboratory findings in a number of patients and pointed out the necessity of arriving at a correct diagnosis when possible. Acute estivoautumnal fever is of two types, as certain

cases illustrated. Case reports were made of each of the following: Fever associated with diarrhea; fever associated with constipation, but of typhoid type; irregular estivoautumnal fever; "postmalarial" fever; fever of cachexia; indefinite typhoids; paratyphoid; usual methods of diagnosis and their possible fallacies. A general discussion of the remainder of the fevers was given, and the advisability of applying epidemiologic rules to undiagnosed fevers and classifying them with the most dangerous then prevailing was discussed. His general conclusions were that the malarial leukocytic count is not always characteristic and only reliable when all the cells in the spread are counted; that the Widal reaction is erroneous in a small percentage of cases; that acute fevers with hyperpyrexia in midsummer are more apt to be sunstroke than "congestion"; that we should never cinchonize unless sure of our diagnosis; that a number of summer and fall fevers may elude our efforts to make a diagnosis; that a sudden chill or disturbance of temperature curve in a typhoid patient is not sufficient evidence of malarial complication; that some continued fevers are malarial, some typhoid, a few are something else, but he is opposed to the idea of any "x" fever.

Boys' Venereal Peril.—F. C. VALENTINE formerly advocated public lectures to young men and youths in regard to the dangers from venereal infection. Further study and observation has caused him to abandon this idea and he now believes the family physician is the one to whom such duty belongs. Venereal diseases have done their deadly work when the specialist is consulted. Ignorance in reference to the diseases of the sexual apparatus is the cause of untold misery and suffering, hence the early education of the youth by the physician would prevent much of the evil. Instruction in the public schools would be inefficient because of the usual inability of the instructor and the difference in the receptivity of the auditors. The proper time for such instruction is at puberty, and mental and physical puberty do not always coincide, hence each must be considered individually. The author submits information to give boys when they are most likely to incur the risks attendant on the acquisition of the sexual habit. If those nearest the boy deem it wise parts of the author's paper might be given him for his study. The paper concludes with an exposure of the methods employed by the advertising quacks and nostrum vendors.

Discussion.—J. W. WALSH emphasized the importance of such instruction as advocated by Valentine, and as an example cited the fact that in the German universities lectures on venereal diseases have for the past few years been regularly given. We are confronted by "a condition and not a theory," and to treat the matter lightly and indifferently is a great error. It is the imperative duty of American universities and colleges to impart information on venereal diseases to young men. F. W. ROBBIN insisted that a mental impression is more important to the youth than the mere knowledge. There are early periods of pubescence, from 9 to 12 years, when the father or the physician can give the youth the proper information; and a later period, about the time when the youth usually enters college, when additional information should be given and this by the physician. THEODORE PORTER said there are two dangerous periods to the boy: The one is early when at home, and the other is later when at college. At the latter place the boy is free for the first time and proper instruction is sorely needed and surely none but the physician should give it. M. M. SMITH believes the proper solution of the question lies in early and proper home-training for the youth, together with advice on the part of the family physician. FRANK JONES condemns lectures to public classes on venereal diseases, and none but a physician should impart the necessary information, this being given privately. E. S. STEVENS believed that boys should be taught at puberty the sacredness and naturalness of the sexual instinct by a physician; and now that the rules of the American Medical Association permit a counselor in each district to impart information through the public press some general information should be given especially calculated to offset the fears engendered and the false impressions imparted by quacks and charlatans. W. SHROPSHIRE thinks information should be imparted early when protection is efficient. It should be taught in the public and high schools along with physiology, a physician being the only proper person to teach either.

SECOND SESSION.

Treatment of Acute Dysentery.—J. M. ANDERS divides treatment into three varieties: (1) dietetic; (2) internal remedies, and (3) topical applications. Rest in bed with proper air and regulation of diet is a most important element in the treatment of these cases. The diet should be liquid—milk and albumin-water preferred. Fats and the carbohydrates should be excluded. Internal remedies should consist of ipecac, which the writer prefers to give in small doses and give frequently rather than in large doses. Avoid vomiting during its administration by rest in bed and absolute quiet. Saline purgation should be employed only in the early stages—later it does harm. Aromatic sulfuric acid is beneficial. Opium may be necessary to relieve the pain and tenesmus and bismuth should not be forgotten. He questions the efficacy of an intestinal antiseptic, but salol may be given on general principles. Sulfur does good in many of these cases. The serum treatment has not proved successful. Among topical appli-

cations he recommends bowel irrigation with some of the astringents or with an astringent alternating with a feebly antiseptic solution. Irrigation is more efficacious in amebic dysentery than in the bacillary forms. Warm solutions are sometimes efficacious.

Traumatic Pneumonia.—W. T. ENGLISH defined traumatic pneumonia and stated that he would limit his paper to a discussion of concussion and contusion without penetrating wounds or fractures. He entered into a general discussion of the physical and mechanical force transmitted through the thoracic wall to the lungs and pleura within. There are normal and abnormal peculiarities in each case which resist the stress from without and that within the thoracic cavity. A great deal depends on the location of the seat of injury, the character of the vulnerating substance and the various environments and influencing factors. A general discussion of the signs, symptoms, diagnosis, prognosis and treatment was entered into, and a number of cases were reported.

Abdominal Pain in Pleurisy and Pneumonia.—J. B. HERRICK stated that in acute inflammation of the pleura we not infrequently have abdominal pain. This is sought to be accounted for in various ways. One is that the lower six intercostal nerves supply not only the pleura, but the abdominal muscles, hence the pain could be readily referred to the abdomen. Again, the phrenic nerve may play some part in this peculiar condition. This referred pain may give rise to the diagnosis of appendicitis, cholecystitis, etc., when the real lesion is a pleurisy or a pneumonia. The writer gave the histories of several cases in which a mistake in diagnosis had been made in some in which appendectomy had been done under a wrong apprehension. In children it appears not necessary that the lower lobes of the lung be affected to cause this referred pain, as it may occur when the pneumonia is apical.

Discussion.—J. N. HALL believed that a displaced liver may cause confusion between peritonitis and pleuritis. A diaphragmatic pleuritis may closely simulate peritonitis. He reported a case which had a left-sided pneumonia, yet early in the case evinced the symptoms of appendicitis. THOMAS McCRAE had seen three cases of beginning pneumonia evince the symptoms of abdominal lesions. In doubtful cases surgeons should call in the internist as consultant; it would prevent needless operation in some cases. B. W. SIBLEY and J. M. ANDERS had both seen cases of this kind, and insisted that they should be in the mind of every surgeon when dealing with an abdominal case.

Strongyloides Intestinalis in the United States.—M. L. PRICE gave a general history of this parasite, its discovery by Normand in 1867, its occurrence in Europe, and in sporadic cases in Brazil, Russia, Sicily, Italy, Dutch Indies, Egypt, etc. Sporadic epidemics occurred in the United States in 1896, and in the Philippine Islands in 1901. The life history of the parasite was given, together with its description and illustrations of it and its ova. It is limited in man to the intestinal canal, seldom reaching the stomach. It may occur in association with the germ of Cochin China diarrhea, and with *Uncinaria duodenale*. The parasite's occurrence in the United States has been noted by Thayer, who reported several cases. The author reported a case coming under his own observation. Attention was called to the clinical picture presented in these cases; the digestive disturbances, diarrhea, dysenteric and cholericiform seizures and emaciation. Death may occur from lowered vitality, asthenia and intercurrent affections. Postmortem examination shows much atrophy of the intestinal epithelium. Fasting for 24 hours followed by free administration of thymol in the author's case brought away many ova, but no parent parasite.

Discussion.—C. W. STILES stated that the parasite is very common in the United States. It has the same distribution as uncinaria. It should be found plentifully before a positive diagnosis is made. He doubts the efficacy of thymol in dealing with this parasite. A. J. SMITH thinks the parasite more common than is generally supposed. J. T. MOORE saw his first case in 1901. The symptoms were abdominal cramps, diarrhea, nervousness and anemia. He found the parasite in stools. His reported case will soon appear in *American Medicine*, and two other cases are soon to be reported.

Uncinariasis in the United States—in Texas.—A. J. SMITH confined his remarks chiefly to this parasite as occurring in Texas. The author had seen the ova of this parasite as early as 1893, but at that time was uncertain as to its character. He later found them in the stools of patients. Suspecting the rather general presence of the parasite in man he instituted a systematic examination of 88 supposedly healthy persons, and found the ova in the dejecta of eight of these—all inhabitants of Texas. It is found most commonly in the sandy districts, but not limited to these. He is of opinion that cistern water is a principal source of infection. A map showing its distribution in the State was exhibited, showing its distribution to be, for most part, along the principal water courses. The principal symptoms exhibited by the patients are abdominal pain and discomfort, varying disturbances of the bowels, marked anemia in severe cases, and almost constant eosinophilia. Malaria frequently occurs in combination with uncinariasis.

Discussion.—C. W. STILES stated that infection may take place through the skin, but the usual route is doubtless through the mouth. Uncinariasis as produced by the American parasite exhibits much more marked symptoms than that pro-

duced by the Old World parasite, though the former invader is more easily dislodged, because of the practical absence of the hooklets possessed by the latter. The parasite may live in the intestine for 10 years, and possibly longer. It may occur anywhere, but most observed in the sand districts. T. A. WILLIAMS, of Scotland, says the parasite is plentiful in South Africa, and was formerly thought to be malaria. C. A. SMITH said he had seen anemia so severe in some cases that hemoglobin was reduced to 10%-15%. Thymol is the most effective remedy yet tried. J. B. HERRICK insisted that we must watch for the parasite in the North, as a case had been reported in Chicago.

THIRD SESSION.

Malarial Dysentery.—W. B. BURNS disbelieved in any one organism producing dysentery. He cites many cases and conditions in which dysentery and malaria parallel each other. Most cases of dysentery respond to antimalarial treatment, and he therefore concludes they are caused by the malarial parasite. He asserts that malarial parasites are often found in the mucosa and submucosa at the necropsy of those dead of dysentery. Dysentery patients frequently reveal the malarial parasite in the blood.

Discussion.—J. T. MOORE seriously doubts that any form of dysentery is caused by the malarial parasite. He has seen many cases which apparently owed to malaria the incidence of the disease, but a careful investigation showed the etiology in every case to be something else. Many cases of amebic dysentery improve on quinin, but this is no evidence of malarial infection. He has tried fluid extract of chaparro armagosa in dram doses every four hours for malaria and amebic dysentery with good results.

Clinical Diagnosis of Intestinal Parasites.—C. W. STILES insisted on the routine practice of examining stools, urine and blood of all cases with intestinal symptoms. Stools should be examined carefully and frequently so long as doubt as to diagnosis remains. Simple methods of making microscopic spreads were given. A convenient one is to touch the wide glass slide with the little finger wet in water, then with a match-stick put a small amount of the fecal matter on the moist area and spread the same out, place on the cover-glass, and the specimen is ready for examination. Pressing fecal matter between folds of blotting-paper and searching the same for blood-stains after an interval will give information as to the presence of intestinal parasites if they be fairly plentiful; especially is this true of the hookworm. But in the latter it fails in 30% to 40% of the cases, because the cases are light and the parasites relatively few. All intestinal parasites sink in water, therefore if the stool be placed in a glass jar and agitated with water, then allowed to stand a short time and the upper liquid poured off, the parasites may be easily found after repeated washings. The microscope is the simplest and easiest means of finding the offender. There is danger of infection in dealing with but two of these parasites, viz., *tenia solium*, and with dog stools, the echinococcus. Special attention was devoted to the hookworm, and its general prevalence in the South discussed. The symptoms produced by this parasite in wellmarked cases is very characteristic. The fishlike stare of the patient's eyes, absence of hair on body of subjects infected before puberty, anemia, and stunted growth are all characteristic. In milder cases only the microscope will certainly diagnose the affection. A description and illustrations of the various intestinal parasites, together with their ova, were given.

Amebic Dysentery at the Johns Hopkins Hospital.—T. B. FUTCHER states that in 14 years 119 patients have been admitted to this hospital, and a general review of these cases are given. The statement is made that amebas may be found in the stools of apparently healthy persons. They are confined to the colon for the most part. Liver and pulmonary abscesses may occur, and the germ may be found in the buccal cavity, in carious teeth, etc. Little is known of the source of amebic infection. Inoculations with the germ are negative. It is probably derived in the same way as is typhoid bacillus. It is not confined to the tropics, occurs in both young and old, the very large preponderance in his reported cases being in males. The whites appear somewhat more susceptible than the blacks. Anemia exists, but there is no diminution in the red cells; there is some leukocytosis, and the hemoglobin averaged in the reported cases 63%; abscess cases 66%. Some 20.3% of the cases developed hepatic abscess. The amebas probably reach the liver by the portal circulation. Malaria was associated in five of these cases. Most of the cases occur in the third decade of life. No means of treatment appears to be entirely successful and many relapses occur.

Clinical History and Pathology of Amebic Dysentery.—H. F. HARRIS discussed the necropsy findings of those dead of amebic dysentery. Emaciation is often extreme, peritonitis may have occurred, adhesions may have occurred between the walls of the intestines or between the latter and the parietal peritoneum. The wall of the gut may be very thin in some places and thick in others, thus presenting a very irregular condition as to thickness. In one-half the cases the ulcers do not extend above the transverse colon. The edges of the ulcers are undermined, and the oblong ulcer has its greatest length transverse to the axis of the bowel. The pathologic process is usually confined to the colon, but may extend to the small intestine and even the appendix. The early changes occurring

in the bowel are not well understood. He detailed the sequence of events as they occur in the puppy, as they occur after receiving an injection material containing the living amebas. He detailed the microscopic findings in and about the ulcer. Tissue damage is always well in advance of the ameba itself, so that if necrosis is caused by the germ it must occasion it by elaborating a toxin. Liver abscesses not infrequently occur; out of 90 cases there were 15 cases of hepatic abscess, 3 of which penetrated the diaphragm. The germ most likely reaches the liver by way of the portal circulation. There are three forms: (1) Very mild form; (2) moderately severe form; and (3) very severe form. The acute symptoms are not unlike other forms of southern diarrhea. Then there seems to be some improvement in 10 to 21 days, when the process often becomes chronic. It runs an irregular course and many recover soon. Bodily exercise, alcohol, etc., appears to increase the symptoms. There is often aching of the back, edema of face and feet, and lenteric dysentery.

Summer Diarrheas of Infancy.—J. H. M. KNOX said the study of bacteriology has revolutionized the whole aspect of summer diarrheas. Before this no pathogenic germ was known. He paid tribute to the work of Bassett and Duval in the 42 cases studied by them, in which they succeeded in finding the causal organism. The symptoms are marked by languor, diarrhea, vomiting, rise of temperature, stools fecal at first, then greenish mucus with blood stains. Tenesmus is frequently very marked. Some cases end fatally, while others recover. There is no false membrane in this diarrhea of children as is sometimes found in the adult. The mouth is the portal of entry, and water, vegetables, milk, etc., is the carrying agent.

Tropical Dysentery.—C. F. MASON said there are two forms: (1) A chronic, caused by the bacillus of Shiga, discovered in 1897; (2) acute, and caused by *Bacillus dysenteriae*. The latter is the type found in the United States. The inflammation in this type is confined almost entirely to the colon, and the germ may be found months after apparent recovery. It is present in all cases, and a serum has been elaborated which will secure immunity when properly given. The lesion produced consists of a catarrhal inflammation of the mucous membrane of the colon, and at times the lower part of the small intestine. It begins as small ulcers in the mucosa, and these extend into the deeper structures. The germ enters by way of the mouth, by means, doubtless of water for the most part. The incubation period is from two to three days. The onset is sudden with abdominal pain, and diarrhea with bloody mucus. There is fever, a coated tongue, and many stools. The attack usually lasts from 10 to 14 days, but may become chronic. The liver and spleen are not affected.

Treatment of Uncinariasis.—T. A. CLAYTON said the treatment resolves itself into three forms, viz., (1) prophylactic; (2) expulsion of the parasite; (3) combating the anemia. He was of opinion that the parasite usually enters by way of the mouth, though as has been shown, may enter through the skin. The water supply, vegetables, dust, unclean hands, etc., are the means of conveying the parasite to the mouth. Once in the alimentary canal it produces many ova, but does not multiply, the ova not reproducing in the intestine of man. It is therefore a self-limited affection, but the parent parasites may live so long (years) in the intestines as to present most serious consequences. Prophylaxis is a very unsettled question. It is known that the ova cannot live without air, and this has led to numerous suggestions for disposing of the excreta of the patients. Fasting for 24 hours, followed by thymol in 15 grain doses every two hours until four doses are taken, and this followed by a purge, is a favorite method of expelling the parasite. This should not be repeated oftener than once a week. The author experimented on a number of dogs to ascertain whether alcohol in combination with the thymol was dangerous. Alarming symptoms were produced by the combination, but this was caused by aspiration of the medicament into the lungs, producing unconsciousness and convulsions in some cases and death in a few. His conclusion was that the alcohol or brandy in itself was not dangerous except from inspiration, for the same could be given in moderate quantities hypodermically without bad effect. General treatment, such as fresh air, plenty of nutritious diet, iron, and the systemic tonics successfully combat the anemia.

Limitations of Nonsurgical Treatment in Intestinal Obstruction.—J. R. EASTMAN called attention to the difficulty of differentiating between mechanical and reflex ileus. In functional ileus morphia will give prompt and often permanent relief, but who can say with certainty when it is functional? Intussusception may present symptoms simulating other affections, particularly hepatic colic. The rule should be that all cases of mechanical obstruction demand the attention of the surgeon. Palliative measures seldom avail anything. The introduction per rectum of gas or water to relieve intussusception should be tried only by those with a knowledge of the technic. Such measures may be tried early, but they are not without danger and are seldom successful. Massage is dangerous and useless. The rational treatment is early surgical interference. Peritonitis may simulate and may cause intussusception; operate any way, for none can tell with certainty. Volvulus demands early operation, and any effort to reduce the condition in any other way offers small hope of success. Cysts, myomas, polypus, and neoplasms of various forms may cause intestinal obstruction, and all forms present urgent symptoms

when strangulation of the gut arises. A serious fault to find with the present status of medical practice is that cases of intestinal obstruction with the single exception of hernia are not recognized sufficiently early. When the rule of early operation in all cases of mechanical obstruction is obeyed mortality from this cause, which is now exceedingly high, will be much reduced.

Weakness and Dilatation of the Heart Due to Chronic Nutritional Diseases.—G. W. McCASKEY says that weakness and dilatation of the heart due to chronic changes in the myocardium is caused by various types of chronic nutritional diseases, and is of frequent occurrence in such affections. Microscopic changes may not be apparent, or we may observe interstitial myocarditis, or fatty, granular or pigmentary degeneration. We cannot expect a normal and naturally acting heart in a chronically diseased and debilitated body. Perfect metabolism and normal innervation are essential to preserve the heart muscle in its normal histologic condition. Dilatation is caused by overstrain of the cardiac muscle, and the amount of stress which the cardiac muscle can stand is relative, depending entirely upon its condition, this depending in turn upon the general body condition. Slight grades of dilatation occur in all the severer types of anemia, and are common in chronic gastrointestinal disorders. Treatment cannot be specific, but consists in removing the cause and combating by general medication and hygienic measures. The administration of constitutional remedies, improved nutrition, rest, graduated exercise, tonics, and saline carbonated baths, constitute the treatment.

Typhoid Fever at High Altitudes.—HALL and COOPER give a review of 600 cases in Colorado, and report a mortality rate of 14.5% after using the various methods of treatment, the tub-bath method being the favorite, and with it the mortality was slightly less. They report the various complications which occurred in their series of cases. Their conclusions are that enteric fever is practically the same in Colorado as elsewhere. Many cases called mountain fever have been found to be typhoid, and typical examples of these have had rose-spots, hemorrhages, exhibited the Widal reaction, and other evidences of a true typhoid, which they doubtless were. Hall formerly thought that typhoid in Colorado was milder than elsewhere, but a further study and investigation have convinced him this first impression was erroneous. Diarrhea appears somewhat less frequent in Colorado than elsewhere. They will continue tubing in severe cases, avoid antipyretics, will use alcohol for the rapid, feeble pulse, and operate on perforating cases when first recognized. Five cases simulating perforation occurred, and 14 cases of actual perforation occurred.

[To be continued.]

Section on Surgery and Anatomy.

FIRST SESSION.

Chairman's Address.—JAMES E. MOORE (Minneapolis, Minn.) made a strong plea for exploratory celiotomy in obscure abdominal affections. The moral responsibility of the surgeon is much greater than formerly, and exploratory operations are more frequently indicated now that the importance of the surgical diseases of the stomach, gallbladder and pancreas is generally recognized. Moore believes that the mortality of operation for typhoid perforation need not exceed 25% in competent hands, and may be less if the operation is early. If the patient is in bad condition local anesthesia under cocain may be employed, but this Moore believes is seldom necessary. He has operated in three cases with one death occurring the third day after operation. One cause for high mortality is the neglect of medical men to call in a surgeon early. In future he believes the mortality will be greatly reduced. Exploratory operations are frequently indicated for chronic peritonitis, generally caused by inflammatory diseases of the appendix, gallbladder or pelvic organs. He prefers the right rectus incision for exploration and denounces indiscriminate exploratory operations; on the other hand, to refuse to operate when other means of diagnosis have failed is frequently to sacrifice human life to prejudice.

Suppression of Urine: Report of Case Enduring Eight Days Relieved by Decapsulation of the Kidneys.—H. J. WHITACRE (Cincinnati). The case of a woman of 40 is reported who had been in perfect health previously. Her illness began with attempt at criminal abortion, which she tried to bring about first by taking drugs, the exact character of which is not known, and afterward by introduction of a catheter. Following the abortion suppression of urine occurred. During the first 24 hours a few ounces of bloody urine was voided. Intravenous injections of salt solution, 60 ounces, were given every six hours, and the patient was given hot-air baths of 25 minutes' duration without any very decided effect on her general condition. A few drops of urine were obtained by catheterization which contained red and white blood cells but no casts. The condition of suppression lasted about eight days, then after consultation with other physicians, all usual medical measures having failed, it was decided to try the effect of decapsulation of the kidney. A lumbar incision was made over the right kidney; the kidney was found very much reddened and congested, and had a mottled appearance. Exploration was made for stone without anything being found. On incising the capsule of the kidney the cortex bulged as the brain does fre-

quently on incising the dura. The capsule was stripped off and the cortex was found so friable that it was lacerated by the slightest touch. The first 24 hours after operation the patient voided 21 ounces of urine; her condition decidedly improved; the quantity of urine gradually increased until she was passing 60 ounces, and a complete recovery followed. She is now quite well and attending to her usual duties nine weeks after the operation. The cause of the suppression in this case is attributed to the vasomotor constriction of the capillaries from the emenagogs or to reflexes. It was certainly not a symptom of acute nephritis. In such cases of suppression of urine the cause is either obstruction of the ureter or suspended kidney function. Obstruction could be excluded in this case. Medical treatment should be tried in such cases until the symptoms become imperative, then Whitacre believes decapsulation is indicated, for the condition probably arises from compression of kidney substance from venous stasis. Suppression is a condition frequently arising after operations. While it may be a symptom and not a disease, the condition menaces life, and if not treated frequently kills the patient.

Fat Necrosis of the Kidney.—J. R. GUTHRIE (Dubuque, Iowa). The case of a young woman aged 32 was reported. Her family and past history were quite negative. On admission to the hospital her condition was negative on examination with the exception of a large mass which could be felt in the region of the right kidney, almost filling the hypochondrium. A lumbar incision was made exposing the kidney. The kidney was seized with forceps and drawn up into the wound, and a considerable quantity of oily liquid resembling iodoform emulsion was evacuated. The kidney substance was found to have almost entirely disappeared. The sac which formed the remnant of the kidney was stitched into the wound and the patient made a perfect recovery. On a search through literature Guthrie has been unable to find any record of a case entirely like this. A somewhat similar case was reported by E. W. Cushing, of Boston; but in his case the oily material seemed to have been formed by disintegration of the fat surrounding the kidney, and it emptied by breaking into the pelvis of the kidney. The opinions of a number of authorities as to the cause of such conditions were reported at some length.

Surgical Treatment of Nephritis.—ALEXANDER HUGH FERGUSON (Chicago). In a paper by this title read in 1889 and published March 11 of that year in the *Journal of the American Medical Association*, Ferguson reported the first case of decapsulation of the kidney of which he has any knowledge. About one month later Edebohls, of New York, published his paper on this subject, and apparently entirely overlooked Ferguson's previous paper. In his original communication Ferguson reported two cases of decapsulation of the kidney, with a report of examination of tissue removed from the kidneys by Professor Klebs, which showed interstitial inflammatory changes. Ferguson believes that he is entitled to priority for having first performed this operation with a definite purpose in view, although Reginald Harrison had operated upon three cases, performing nephrotomy in cases of nephritis, with a mistaken diagnosis of stone in the kidney or some other condition. Ferguson's first decapsulation was performed not for nephritis, but for floating kidney, in 1896. His two other cases with definite diagnosis of nephritis were fully reported in 1899. Brief reports were given of several cases which Ferguson has since operated upon with considerable success and with complete symptomatic relief.

Discussion.—BEVAN (Chicago), in discussing Whitacre's case, called attention to the paper which he read recently before the Chicago Medical Society reporting several cases of anuria, upon some of which he had operated. In these cases of suppression he believes that nephrotomy is indicated in preference to decapsulation. The operation can be readily performed under cocaine or nitrous oxid gas anesthesia. The operation can be done rapidly, not more than eight minutes being required. It gives free drainage and entirely relieves the congestion, which Bevan believes is the cause of suppression in these cases. JEPSON (Iowa) believes that decapsulation is most likely to do good in hemorrhagic cases, and specially when the hemorrhage is beneath the capsule. He believes that the question is still not definitely settled whether decapsulation is a justifiable operation, and if so, how it is best accomplished. GIBBONS (Scranton, Pa.) mentioned several cases in which he performed decapsulation of the kidney with relief of the symptoms. He believes that Edebohls should be credited with priority for first performing this operation for Bright's disease. GUIERAS (New York) believes that the operation for chronic Bright's disease is still in its infancy. The benefit in these cases has been attributed by some to the increased circulation through adhesions of the kidney to the surrounding structures, but experiments by Johnson, of San Francisco, have shown that there is little, if any, improvement in the circulatory conditions after decapsulation. WINSLOW (Baltimore) reported a case of nephritis in which the symptoms were entirely relieved by decapsulation of the kidney. FERGUSON advocates returning the kidney not to its fatty capsule, but placing it so that it shall come in contact with muscular tissue; fat is not a vascular tissue, and improvement in circulation cannot be expected if the kidney is left in contact with fat. There seems to be no reason why collateral circulation should not be established in adhesions to the kidney in the same way that this occurs in cases of intraabdominal adhesions.

Indications for Cholecystectomy.—B. B. DAVIS (Omaha). In his last 28 cases of cholecystostomy pain recurred after operation in 6 cases. This seems to indicate that only about one patient in 5 is permanently relieved by this operation. In 3 cases biliary fistula persisted for many months, and for this reason a second operation was necessary for the removal of the gallbladder. The experience of surgeons in general indicates that symptoms recur in less than 1% of the cases after cholecystectomy, while the proportion is certainly as great as 17% after cholecystostomy; the advantages of cholecystectomy in these cases are: that the healing is more prompt; the source of infection is entirely removed; after trouble from adhesions is avoided; a useless organ, for such the gallbladder as well as the appendix must be considered, is removed, and a constant source of danger from secondary troubles is avoided. The risk of the operation in uncomplicated cases is slightly if any greater than after cholecystostomy; drainage is as easy and recovery is rapid.

The Call for Exploratory Operations in the Gallbladder Region.—F. A. DUNSMOOR (Minneapolis). Considering the slight dangers of abdominal incision Dunsmoor believes that exploration for symptoms referred to the upper part of the abdomen should be more frequently resorted to. Trouble in the region of the gallbladder is the most frequent cause of these symptoms, and from clinical symptoms alone gallstones and other pathologic conditions are as often overlooked as found. Several cases were reported in support of this position.

Discussion.—MAYO (Rochester, Minn.): In many of the cases mentioned by Dunsmoor the symptoms were such as to indicate that they would be relieved only by operation, and Mayo entirely agrees as to the necessity for exploratory celiotomy in such cases. He also agrees with Davis as to the desirability of removing the gallbladder if this can be safely accomplished. It is not always safe, however, in the case of patients who are very fat or in cases in which degenerative changes are going on in important organs. Personally he does not feel justified in removing the gallbladder in all cases. The cause of death after these operations is usually from cessation of liver function. This is most likely to occur if the gallbladder is removed in cases in which it contains bile and the cystic duct is open. In such cases cholecystostomy is generally sufficient; in any case bile should be drained to the surface. MURPHY (Chicago) believes that the most common cause for return of symptoms after gallbladder operations is from remaining stone or from flexions of the duct. Both of these factors are the result of imperfect operations. It is extremely important to examine very thoroughly for stone and to take great care in the separation of adhesions, which are the most common cause of flexions of the duct. In many cases in which the gallbladder is infected no more than is absolutely necessary should be done. This is usually the simple drainage of the gallbladder. OCHSNER (Chicago): The diagnosis of gastritis is made in many cases of gallstones, from the reason that the pain is located in the region of the stomach. Exploratory operation would show the real cause of the trouble in these cases. With increasing experience nearly all surgeons more frequently perform cholecystectomy. After the abdomen is open in exploratory operation a very careful examination should be made of the common, cystic, and hepatic ducts as well as the gallbladder. Cholecystostomy is much the safer operation in the hands of surgeons of only moderate experience, and Ochsner considers cholecystectomy safer as a secondary than as a primary operation. GIBBONS (Scranton, Pa.) finds that patients can be relieved of their symptoms by cholecystostomy and does not see the necessity of resorting to a more dangerous operation when a safer operation will do. DAVIS, in closing, expressed the belief that all small and contracted gallbladders with obliteration of the cystic duct should be removed. Cholecystectomy is least needed in simple, uncomplicated cases.

SECOND SESSION.

A Contribution to the Surgery of Gastric Ulcer.—VAN BUREN KNOTT (Sioux City, Iowa) called attention to the importance of adhesions resulting from gastric ulcer. In about 80% of these cases the adhesions are to the posterior wall of the stomach near the pylorus. Broad bands are frequently formed by stretching of these adhesions. The symptoms caused are usually from interference with drainage because of stenosis of the pylorus. Symptoms may be entirely lacking or may be so severe as to endanger life from malnutrition. The diagnosis is frequently impossible without exploratory operation. Pain in the right hypochondrium and constant vomiting are among the more important symptoms. Knott calls attention to the importance of placing the patient in the knee-chest position in the diagnosis of these cases. This causes tugging on posterior adhesions if they are present. With the symptoms of pain and vomiting there is usually a history of gastric ulcer, possibly of local peritonitis. There is sometimes an area of resistance and possibly an inflammatory mass may be felt. By inflating the stomach and outlining it by percussion its form is frequently found to be irregular. The treatment advocated was exploratory operation in doubtful cases and freeing of adhesions unless too extensive. Several cases of this kind in which operation was successfully performed were reported.

Surgical Conception of Pyloric Obstruction.—H. D. NILES (Salt Lake City) believes that 90% of gastric troubles

are caused either by ulcer, late adhesions following it or by carcinoma. These conditions are not removable by medical measures. Operation in such cases is not attended with the dangers which were formerly supposed. The operation for gastric carcinoma he believes to be favorable in early cases, for carcinoma of the stomach is slower to involve glands than carcinoma of the uterus or breast. Gastrectomy is seldom indicated in these cases. Carcinoma does not involve the region of the fundus until very late. It often has its starting point in cicatricial tissue of healing ulcers. Niles believes that he has been able to trace the origin of several cases to this cause. In all doubtful cases of stomach trouble with symptoms of pyloric obstruction, exploratory celiotomy was indicated. Many lives are yearly sacrificed from neglect of early exploratory operation. The symptoms in such cases are usually such as demand surgical treatment. The surgeon in dealing with such cases would best limit himself to a few recognized operations in which he has gained some experience. It is important not to undertake to do too much, nor to select too long operations. The duodenum is too short to attach to the stomach after excision of the pylorus in most cases and the upper part of the jejunum should be chosen for anastomosis. Niles generally employs Murphy's button but in certain cases suture is preferable. It is very important that general practitioners of medicine should be impressed with the necessity for early diagnosis in these cases, and this is frequently only possible by exploratory celiotomy. With early operation the mortality should be much reduced.

The Surgery of the Stomach.—A. J. OCHSNER (Chicago) said that with wider experience surgeons in general are impressed with the importance of surgical intervention in an increasing number of cases. The diagnosis in these cases is often difficult without exploratory operation. Our operative technic has been so much perfected of late that such exploratory operations entail little danger and their value is established when so many permanent cures can be obtained. Ochsner compared the palliative operations of gastroenterostomy, etc., to the interval operation in appendicitis. If such an interval operation is performed in cases of gastric ulcer more radical operation for gastric carcinoma is frequently unnecessary. In gastroenterostomy if the opening be made in the lowest part of the stomach, as suggested by Mayo, pernicious vomiting is prevented. It is a matter of indifference whether a mechanical means or suture is employed in the operation. Ochsner has made use of McGraw's elastic ligature method in nine cases with favorable results. In performing gastroenterostomy it is better to close the pylorus if it is still open. Otherwise the gastroenterostomy opening is likely to contract. The operations for enlarging the pylorus have been mostly unsuccessful. Finney's pyloroplasty operation promises well, but its value is not yet entirely established. Ochsner has used this operation in one case with a good result. Shortening the gastrohepatic ligament to aid in drainage of the stomach has not given him good results. Complicated operations in the treatment of carcinoma are never necessary. In cases of benign stenosis gastroenterostomy gives the most favorable results if just enough stomach tissue is included in the stitches, if the anastomosis is made at the lowest point of the stomach and without tension. Ochsner has performed 79 operations on the stomach, including 9 pylorotomies, with 3 deaths. In one case death was accidental and not the result of the operation. In the second case the patient was in a weakened condition and gastroenterostomy would have been preferable. In the third case death was due to loosening of the Murphy button. As a preparation for operation he advises gastric lavage. After the operation the patient should be fed by the rectum for two weeks. Patients suffering from nonmalignant affections are greatly benefited by operation in every case.

Discussion.—ANDREWS (Chicago) believes that practically all the cases of disturbance of gastric digestion belong to the surgeon. Most of them are the immediate or remote results of gastric ulcer. There is no more reason why that gastric ulcers should not be treated surgically than an ulcer of the leg or any other part of the body. The presence of gastric ulcer, he believes, indicates operation in every case. Operation is also indicated in cases of chronic indigestion. The anemic, hysteric dyspeptics are nearly all cured by efficient drainage of the stomach. Gastric disturbances are usually not a series of disorders but a number of different stages of gastric ulcer. He agrees with Niles that most of the cases of carcinoma have their origin in an ulcer of the stomach. Other conditions are caused by adhesions or inflammatory thickening from ulcer. MAYO (Rochester, Minn.) believes that most of the cases of gastric trouble arise from gastric ulcer and its complications. The ulcer is most commonly situated in the region of the pylorus, and is frequently so small that it is impossible to find it. Operations on the ulcer itself are hence impossible, and the rational procedure is to drain the stomach at its lowest point. In carcinoma of the stomach the glands which are affected are situated in the gastrohepatic omentum, and hence in these cases all of the lesser curvature and the omentum should be removed. RODMAN (Philadelphia) believes that the time will soon come when all gastric ulcers will be treated surgically, before complications arise. The greater number of carcinomas of the stomach arise in ulcers of the stomach. In operating Rodman prefers v. Hacker's method of posterior gastroenterostomy, but believes whatever method is used pernicious vomiting some-

times follows. CORDIER (Kansas City, Mo.) says the pathologic condition in these cases frequently precludes excision of the gastric ulcer, and gastroenterostomy is the operation of choice. The quickest operation possible should be performed in these cases. He prefers to use the Murphy button and the anterior operation. The photograph of a specimen was exhibited in which gastroenterostomy had been performed seven years previously, the patient dying from pneumonia. BEVAN (Chicago) called attention to the fact that papers on appendicitis, gallbladder surgery and typhoid perforation, subjects belonging properly to the Surgical Section, were being read in the Section on Gynecology and Obstetrics, and asked that a committee be appointed to consult with the officers of that section and to request them to limit their discussions in the future to subjects connected with obstetrics and diseases of women. NILES, in closing, called attention to the fact that gastroenterostomy is helpful in treating all cases of gastric ulcer, both those which are evident at the time of operation and those so small that they cannot be seen. Excision is impossible in these cases.

The Single Cuff Method of Circular Enterorrhaphy: A New Method.—O. BEVERLY CAMPBELL (St. Joseph, Mo.), by means of drawings, demonstrated a method of intestinal anastomosis, the important points of which were in turning back a cuff of the serosa and muscular coat of the intestine, excising the part covered by this cuff, suturing the ends of the intestine, folding the cuff over the sutured area and stitching in place. By considerable experimental work he has found this method easy, rapid, safe, and followed by no postoperative complications. He has been able to perform the operation in from five to eight minutes. He reported the pathologic findings in two cases in which he had operated by this method, one an adenocarcinoma of the sigmoid flexure of the colon, the second a case of tuberculous peritonitis with intestinal perforation.

Intestinal Resection, with Report of 15 Cases, 9 with the Button and 6 with Suture.—JAMES H. DUNN (Minneapolis) is of opinion that in doing intestinal anastomosis the operator should be master of two methods—a good mechanical method and a good suture method. The Murphy button Dunn finds on the whole the most satisfactory of the mechanical methods of anastomosis, but anastomosis by the button is not applicable to all cases. For anastomosis of the large intestine the button is not well suited, because of the thickness of the wall of the intestine, the solid contents of the intestine which tend to plug the opening in the button, the poor peristalsis, the poor circulation in the large intestine, and the thick epiplocae, which are often a hindrance in performing the operation. The suture methods are applicable to all cases, though Dunn prefers the button in anastomosis of the small intestine, because of the rapidity in operating. He considers Connell's method of anastomosis the best of the suture methods. End-to-end suture he believes is preferable to the lateral methods of anastomosis, as we obtain nearer the normal condition of the intestine by this method of suture. He employs the continuous Connell suture and finds it rapid and safe. A brief report was given of the 15 cases in which Dunn had found intestinal anastomosis necessary.

Discussion.—JONAS (Omaha) agreed with Dunn as to the use of the Murphy button and the Connell suture, being the preferable methods of intestinal anastomosis. WALKER (Detroit) formerly used the Murphy button almost exclusively. He has performed anastomosis by Connell's method in six cases with three deaths. He has used McGraw's elastic ligature method in 17 cases, the immediate results being successful in all. He finds the operation rapid, it precludes sepsis, it is simple and he has found no immediate trouble with the method. MURPHY (Chicago) believes that the most common cause of failure in intestinal anastomosis is that the condition of impaired vitality or bad condition of the proximal end of the intestine is not recognized and excision is not carried far enough into good intestine. FERGUSON (Chicago) emphasized the importance of experimental suture on animals for those who desire to perform intestinal anastomosis. Without such experience no operator is justified in undertaking the operation.

[To be continued.]

Section on Obstetrics and Diseases of Women.

FIRST SESSION.

Chairman's Address: The Trend of Gynecological Work Today.—A. PALMER DUDLEY: There is shown a marked tendency toward conservatism in operative work. A quarter of a century ago conservative surgery upon the uterine appendages was unknown. To the students of the star actors of a quarter of a century ago must be given the credit of making the effort to rescue womankind from enthusiastic aspirants for surgical honors who could only see radical removal of all in their path as the road to success. How many thousands of suffering, misguided women have offered up their pelvic organs as a sacrifice only to find that they had changed one condition of suffering for another equally as disagreeable. Yet these sacrifices are resulting in ultimate good. During this period the use of electricity as a method of treatment was of short duration. Conservatism of whatever nature was for a time lost sight of. It was not until the nerve specialists called

attention to the fact that we were sowing the wind and reaping the whirlwind; that many of us realized what we were doing for these poor women—prematurely endowing them with hot flashes, the rapid taking on of fat, the loss of their generative function, and regrets for their unsexing. Dr. Dudley tries to save only what he thinks will perform its function normally. In all, he has operated upon 269 cases in this way and without a death until the last week of 1902, when he lost two from septic peritonitis, introduced by the hands of a septic house surgeon. In doing conservative surgery upon the tubes and ovaries the first thing to do is to put the inside of the uterus into condition to become healthy. Plastic work may also be necessary. In deciding what to do the age, social position, domestic relations, the after-effects of radical work, and the dangers to which the patient is subjected should be determining factors. Dr. Dudley does the plastic work first. He removes small fibroids from the uterus, in one case as many as 16, and leaves the appendages. He opens a hydrosalpinx, washes out the tube and drops it back. If a tube is occluded at the uterine end (not as the result of sepsis from abortion or gonorrhoea) he does not hesitate to open it and wash it out. He leaves whatever healthy tissue may be found in a cystic ovary. A dermoid cyst requires, however, the most radical treatment. If requested to do so he would open the abdomen to determine the cause of sterility. After resecting an ovary he closes the wound with fine silk, ordinary floss silk No. 00, using a very fine cambric needle. The surgeon who now removes organs that could possibly be saved is open to the criticism of not being a conscientious man. Of 269 patients from whom he has removed portions of tubes and ovaries, coupled with various other procedures, Dr. Dudley has so far been able to trace 43 pregnancies. Many of the 269 cases have been lost sight of. In a case of salpingitis the fibrinated extremity is closed, dilated, and club shaped. The tip should be opened with scissors, the contents evacuated, the tube washed out with an antiseptic solution. The tube should be gently probed and if the probe passes into the uterus we will know that the tube is patent. There is then no excuse for removing the tube, but with fine silk, the probe still in place, you suture all around the tip of the tube, sewing the mucous membrane to the peritoneum. Hematosalpinx and hydrosalpinx are similarly treated. In pyosalpinx, if the pus is septic, it is well to precede the opening of the tube by its injection with 1:1,000 mercuric chlorid solution, its withdrawal and repeated injection. The tube may be afterward treated as suggested above. Ventrosuspension is often essential in conservative surgery upon the tubes. As soon as the patient comes out of the ether she should have a saline. The patient should be moved from one side to the other to prevent adhesions. The bowels should move at the end of 24 hours, the intestinal canal being the best drainage tube. Do not give morphia. No food should be allowed until after the bowels have moved. Then begin with milk and vichy. Keep the patient in bed 14 to 16 days. If ventrosuspension has been done the stitches should remain in for 21 days. During and for two days subsequent to the first menstruation the patient should be kept in bed. The results of many operators, the material secured by correspondence, were given. In 860 operations reported but 9 patients died. In 435 cases in which complete results are given the operation was successful in 396 and unsuccessful in 39 (10% failures; 1% mortality). There is but a slight preponderance of tubal and ovarian disease on the left side. The totals comprise 754 conservative and 522 radical operations upon the ovaries. The excess of conservative intervention is bound to increase in the future. As to tubal operations, there were 265 extirpations and 179 partial operations. As regards results, the general outcome of the operation and the preservation of sex must be considered. The primary mortality is quite insignificant, and as regards ultimate success, the tables show not over 10% of failures. There is positive proof that at least 10% of the patients became pregnant, and there is every reason to believe that this does not represent the whole number.

Appendicitis from the Standpoint of the Gynecologist.—H. P. NEWMAN (Chicago) said that appendicitis is not usually difficult to diagnose. Even the laity are alert in recognizing its premonitory symptoms. I report the case of a young girl of 16, nervous, anemic who had attacks of pain in the lower abdomen associated with the menstrual period. Her father, a physician, brought her to me for treatment of some gynecologic condition from which he believed her to be suffering. Appendicitis was diagnosed. The patient was taken to a surgeon, who diagnosed and operated for pelvic disease. The condition found was catarrhal appendicitis, the appendix being slightly attached at its distal end to the right ovary. The result of operation was complete relief. This is one of many cases in which the diagnosis is obscure. Disease of the appendix as well as of other abdominal viscera may produce functional disturbance of the female pelvic organs, or may give rise to disease in these parts. The abdomen should be examined in all obscure pelvic troubles, and in opening the abdomen for pelvic disease the appendix should always be examined. If catarrhal, adherent or containing concretions it should be removed. It is not enough to break up adhesions. Any localized peritonitis, particularly appendicular, may be an active factor in the production of intestinal obstruction. Intraabdominal strangulated hernia has occurred after the lapse of years as a direct result of early appendicitis. In operating for intestinal obstruction in the female look for adhesions to the pelvic as well as to the

abdominal viscera. In removing the appendix the invaginating operation should be done or some equally effective method used for protection against adhesions.

Discussion.—E. W. REYNOLDS (Boston) said there are many obscure cases in which there are pain and tenderness upon the right side and in which nothing can be made out by physical examination and in which the symptomatology alone must be depended upon for diagnosis. A group of symptoms, including right-sided pain and tenderness, indigestion, flatulency, and headache, point strongly to appendicitis. In abdominal operation the surgeon should remove every abnormal appendix; but we are apt to be too radical, and the subject is at present one for study, not for decision. The ilio-lumbar ligament should be studied in this connection. B. M. RICKETS (Cincinnati) thinks it timely to consider the subject of appendicitis complicating disease of the right tube and ovary, and to say that the diagnosis can always be made by putting it strongly, and it is putting it broadly to say that the appendix should always be removed when the abdomen is opened. It is, however, a step in the right direction. WATHEN (Louisville) thinks that appendicitis is frequently related to disease of the ovaries and tubes. He had lately, in eight cases of pelvic inflammation, found the appendix adherent and involved and had removed it. MICHALD (New Orleans) expressed his difficulty in making a differential diagnosis between right salpingitis and appendicitis. It is important to differentiate, for appendicitis endangers the patient's life. He offered these points for consideration. In chronic appendicitis the greatest intensity of pain is elicited by pressure upon the abdominal walls in salpingitis by pressure in the vagina. The seat of greatest tumefaction is likewise determined. MANTON (Detroit) thinks that connections between the appendix and right-sided disease can usually be made out by a delicate tactus eruditus. For several years he has made a habit of having appendices removed, examined microscopically, and has usually found them diseased even when not appearing so macroscopically. CARSTENS (Detroit) believes that in acute salpingitis the uterus is fixed. In appendicitis it is not fixed. In the former there is no rigidity or tenderness over McBurney's point. If the patient complains of pain over McBurney's point and there is rigidity in that area the appendix is the offending organ. BOVÉE (Washington) believes Dr. Carstens to be too radical in asserting that pain and rigidity at McBurney's point are positive signs of appendicitis. They may lead to error in diagnosis. Though he usually, in laparotomy, removes the appendix, there are cases, such as ruptured ectopic gestation, when time cannot be given to examination of the appendix. NEWMAN, in closing the discussion, asserted that one purpose in the presentation of the subject was to make operators more alert in diagnosis. The appendix makes ravages not to be passed by lightly. Appendices should not be left if pathology is present. The presence of appendicitis in infected ovarian cysts he believes common, the infection occurring from continuity.

Gastric Ulcer: Some Clinical, Pathologic, and Surgical Phases.—A. N. CORDIER (Kansas City, Mo.) said that on the posterior wall of the lesser curvature near the pylorus is the favorite site of ulcer. In a large series of fatal chronic cases 20% resulted from hemorrhage. The death-rate from hemorrhage in acute cases is 50%. In cirrhosis of the liver ulcers are of frequent occurrence, and are especially prone to bleed. Inflammatory adhesions and cicatrices prevent the normal functions of the stomach, fermentation of food results, and dilation is inevitable. In deep ulceration, nature often so agglutinates adjacent organs as to prevent, in perforation, the spilling of the stomach contents into the peritoneal cavity, otherwise death results quickly. Anterior perforations of the stomach are the most fatal ones, because of the lack of inflammatory adhesions at this area. The ingestion of food usually produces pain. During menstruation the pain is increased. Vomiting, sometimes present, is not so frequent as is generally supposed, and when it occurs is not usually accompanied by nausea. The vomitus usually contains an excess of hydrochloric acid. Vomiting is a dangerous complication, leading to starvation, hemorrhage, and rupture. About 10% of all gastric cancers have their origin, according to Lebert, in a benign ulcer. Accepting this statement as true, we have a strong argument in favor of any procedure for the early cure of all benign ulcers of the stomach. Eight years ago Cordier laid stress upon the importance of making the opening in the stomach in a position that would act as a drainage opening. The medicinal management of 50% of these cases is quite satisfactory, but there are a class of cases the medicinal management of which is a total failure. I confine my remarks to the management of the class where a fair line of medicinal management has failed. The prime object to be sought in the healing of a gastric ulcer is to maintain the health standard by proper nutrition, removing all sources of irritation possible, giving the parts rest. Certain rebellious cases become strictly surgical ones. A gastroenterostomy meets most of the indications in such cases. By selecting a dependent portion of the stomach for anastomosis the organ will empty itself by gravity both of food and the strongly acid secretions. If efforts at vomiting occur the stomach empties itself into the bowel. The motility of the organ is limited by this procedure and the ulcer given rest. The putrefaction of retained food and distention of the stomach are prevented, thus permitting contraction of the edge of the ulcer.

Discussion.—CARSTENS (Detroit) believes in gastroenterostomy for obstruction for causes other than gastric ulcer. CLARK (Philadelphia) raised the two questions, namely, how long a case should continue under medical care, and how, in operating, the ulcer could best be found? Clark leaves the case to the judgment of a skilled medical man. To find the ulcer the speaker believes in an exploratory gastrotomy, by transverse incision between the two curvatures. Excision of the ulcer may be done through the wound. CORDIER, in closing, advised against operation during hemorrhage. In grave cases rapid operation is essential; therefore the advantage of using the Murphy button, opening being made in the bottom of the stomach for drainage, thus avoiding fermentation and vomiting.

[To be continued.]

Section on Sanitary Science and Hygiene.

FIRST SESSION.

Address of Chairman.—H. W. BRACKEN (Minneapolis):

A question has been made whether the section should have recognition by the American Medical Association? This can only be answered in the affirmative. The speaker defined the functions of the section. He believes that discussions on preventive medicine and special diseases should be conducted by the section on "Practice of Medicine." The medical men of this section should be affiliated with the medical section. He urged the necessity of purely sanitary science, and the necessity that the chairman keep in touch with the medical section. The papers read before the medical section should not conflict with those of the Section on Sanitary Science.

Cooperation Methods for Improving the Usefulness of Statistical Classification of Causes of Death.—L. C. WILBUR (Lansing, Mich.). The speaker defined the necessity of classification, stating that the present classifications were too narrow. He thought probably no ideal classification was possible, and defined special limitations, showing the desirability of uniformity. He urges the general adoption of international classification as the first step toward improvement. There are many unsettled points, especially as to deaths, for which two or more causes are assigned. The lack of uniform classification affects mortality statistics. The nomenclature used by physicians in reporting deaths is too vague, and it is often difficult to decide under which disease to check death in recording same when there is a complication of diseases. To correct this he suggests getting rating for each disease from the profession, striking an average and publishing pamphlets accordingly, this pamphlet to be kept in every registration office. The help of every physician and user of vital statistics is necessary for this reform. Dr. Wilbur does not think it should be developed to such an extent as to be a mere mechanical process in recording statistics, but should be presided over by a medical man. He urged cooperation of special committees of the Conference of the Boards of Health, of the American Public Health Association, of the United States Census Bureau, and of the Marine-Hospital and Public Health Service. He also advocated the appointment of a committee from the American Medical Association to cooperate also for uniformity in classification. The entire medical profession should be urged to express its opinion, as sanitarians cannot accomplish the desired effect alone. Improvement in precision of statement by the physician who makes out original certificate is necessary for more exactness.

Discussion.—J. S. FULTON (Baltimore) said the difficulty is that sanitarians do not like to go to work on vital statistics. He compares present system to the system which would exist if the entire United States post office system were to be disturbed. Physicians lay too much stress on value of vital statistics and depend too much upon them. Present classification is merely mechanical. Thus we lose many causes of death from the fact that there is no space to enter disease. A draft of the international classification should be sent around to specialists for opinions as to rating of each title. Fulton does not think the international classification is ideal. It is a question if it can be made available for clerks. In 10 years statistics will be improved by adoption of international classification. WILBUR: By looking in pamphlet, clerk can find exact rating of disease and can enter it accordingly. SWARTS (Providence) thinks clerks could not be sure of rating, and on second reading would be apt to change rating. He is not sure if plan will be beneficial, but can tell in 10 years.

Resolutions were unanimously adopted by the section to be referred to House of Delegates urging the appointment of a permanent committee of five from the American Medical Association to cooperate with a like committee from the American Public Health Association and from the Marine-Hospital Service to help the Census Office in bringing about more uniformity in registration of deaths. Resolutions were also adopted congratulating Congress upon its activity in the matter.

Relation of Physicians to Correct Registration of Vital Statistics.—W. A. KING (Washington, D. C.) considers this subject especially interesting to this section, as the members are responsible for reports. He advises that data be collected according to definite system, requiring registration of each death previous to interment. At present this must be accomplished by uniform passage of laws by cities and coun-

ties. Registration should be complete and accurate. Success depends more upon hard and persistent work than upon sentiment. Any improvement in accuracy of recording statistics of causes of death can be accomplished only by well organized movement. After giving an outline of the work of the Census Office he stated that the Census Office proposes to furnish every practising physician with a copy of statistical tables published by the Bureau. He advised medical schools to adopt instruction in vital statistics, and proposed enlistment of lay people in encouraging the Census Bureau. He gave a brief outline of Circular No. 71, published by Census Office, containing a plan to be adopted in registering deaths, also a brief outline of international classification with remarks thereon, copies of which are being distributed by the Bureau. Dr. Wilbur has done much toward adoption of uniform plan. The general adoption of the classification (international) will do much toward bringing about uniformity. All persons using this are urged to file criticisms. The test is to be in 1910. Census Bureau requested Congress to adopt resolutions leading to uniformity in death statistics. Following this a circular was sent to each Governor of a State, to each society, etc., urging good registration by prohibiting burial until registration; also uniform slips for death certificates fixing responsibility upon local registrar. Criticisms are asked for, and replies so far indicate that the majority of the Governors are in favor of pressing law. Societies, he thinks, should urge along this line, and each member should take upon himself the duty. The value of vital statistics depends solely upon the lucidity and uniformity with which physicians report. The value of statistics depends upon accuracy. So far there has been much ignorance of what is wanted. Bureau sent out circulars explaining what physicians should do. It is not to be expected that causes of death can always be known. Complete returns, of course, should be regarded as essential, for legal reasons. The physician also should record experiences in individual cases systematically. In this respect registration becomes only a step in progress. Circular No. 303 gives digest of previous circulars and instructions to medical colleges. The paper closed by proposing to send out circulars to educate the profession in this line. The adoption of the international classification with manual or pamphlet is deemed essential to uniformity in vital statistics. It is the desire of the Census Bureau that the annual reports should be of great benefit and should be made as accurate as possible. The annual report is now in progress. Census reports have been generally distributed through members of Congress. In this system persons could not get them who wanted them, and those who did not want them did so. Circulars were sent to all registration officers notifying them that they could get them, and such was the demand that the third edition is now in process of publication. The speaker hopes that the American Medical Association will urge the adoption of uniformity.

Discussion.—EGBERT (Philadelphia) said he had notified all physicians to be uniform, and had accepted the suggestions promoted by Dr. King. The great difficulty will be in rural districts. Only 14% of rural districts are registered, and these mostly in New England. Philadelphia has an average of 450 deaths weekly, and should not have trouble in securing uniformity. In Philadelphia the births are ascertained by the city, and it should be easy to educate along the lines proposed. He does not think that the average physician appreciates the importance of this matter. The Census reports are the best method of impressing this. A. WILLIAMS (Edinburgh) thinks it will be hard to get good statistics from Texas, as the Legislature is not educated along that line. In that State there are no good laws regulating the practice of medicine even. WILBUR: In regard to country districts, in Middleton they have registration offices in all districts, and report each month, never later than two months. If any items are omitted they make corrections and send circulars to the registration clerk to see the undertaker and report the following month; and if he does not do so 25 cents is deducted from the registration fee. They also urge him not to accept incomplete reports. Thus they are being educated rapidly, but the great fault is that incumbents of the office change too often. Sending of pamphlets to physicians is most important. Registrars are apt to change, but should have, moreover, both physicians and registrar to follow up reports. Cost of each certificate of death 25 cents, and this the only fee. He exempts cities of over 10,000 in population with salaried employes. J. N. HURTY (Indianapolis) has followed the system of Michigan in following up each report which is lacking. He finds the great difficulty is to find the real cause of death. For a short while he allowed physicians to enter cause as "unknown" when uncertain, but found that almost all certificates came in as unknown, and had to abolish the rule. He cited a case of gross error on the part of a prominent physician in a certificate of death, and spoke of the frequency of such errors. Teachers of hygiene should impress the importance of vital statistics. He also follows up reports which are in error. He does not think the clause in Dr. King's plan of registration previous to burial as especially hard on inhabitants of rural districts, and does not think it can be carried out. It should be done as in Indiana, where if such happens the coroner disinters the body and holds the undertaker responsible. J. S. FULTON (Baltimore) believes what is wanted is due appreciation on the part of State and city of the importance of vital statistics. Allegheny and Pittsburg are the sixth city in the United States in deaths from typhoid. This comes from rural districts.

Therefore, the community itself should be made to appreciate what great importance there is in rural registration. No registration is good unless it includes registration of entire State.

[To be continued.]

Section on Diseases of Children.

FIRST SESSION.

Address of the Chairman: The Development and Care of Children.—JOHN C. COOK (Chicago) pointed out the difference between the heart, the lungs, and the nervous system in children and adults, and the need for conserving the energy of the child during the period of development. He then discussed the child labor question at some length, pointing out the more glaring defects of existing State laws. It was not the labor but the environment which during the period of development injuriously affected the character. The least that the medical profession should do in the premises was to see that the children who must work be supplied with sufficient fresh air and the surroundings are sanitary. The speaker earnestly recommended that each State have a commission of five, at least two of whom should be physicians, and that this commission should control all matters of education and labor. This commission should be appointed by the supreme judges of the State and should, in turn, nominate inspectors, thus forever removing the question of child labor from petty politics and contract labor.

Anatomic and Physiologic Correspondence of Child and Adult.—WILLIAM T. ECKLEY (Chicago), in reading this paper, curtailed it somewhat because part of it traversed much the same ground as had been covered in the address of the chairman. He said that the child possessed mental and physical qualities of heredity only, while the adult possessed the same qualities modified by the activity of the body and mind. Continuous stimulation tended to produce exhaustion and should be avoided. From this the author argued that adult doses in comparison with doses suitable for a child represented not increased vigor but the wane of receptivity. Idiosyncrasy was the survival in the adult of the normal susceptibility of stimulation in the child, and this raised the question as to whether the physician was justified in beginning treatment with adult doses of powerful drugs. The author's answer to this question was in the negative and was based upon the belief that idiosyncratic rights should be respected.

Is the Study of Pediatrics Worth the Attention It Gets, and Does It Get the Attention It Deserves?—C. F. WAHRER (Fort Madison, Iowa) said there were few places outside of metropolitan cities which could afford full scope to the pediatrician, and hence the diseases of children should receive more study from the profession at large, the more so as about one-half of general practice was made up of the diseases of children and adolescents. It was a good field for the young practitioner, as it served as an introduction to family practice.

Discussion.—W. F. BOGESS (Louisville, Ky.) emphasized the fact that the diseases of children constituted an individual study. Teachers should impress upon their students the most optimistic views concerning the management of the diseases of childhood, because it was a not uncommon experience in this field that seemingly desperate cases could be guided to a successful issue.

Acute Suppurative Cervical Adenitis of Infancy.—THOMAS S. SOUTHWORTH (New York) took the ground that this was an affection peculiar to infancy, and that it was the result of the absorption through the lymphatics of infectious matter from the nasopharynx. The child's head was usually thrown over toward the opposite shoulder, the glandular mass was tender and there were fever and malaise. In making the differential diagnosis, it should be remembered that tuberculous adenitis rarely occurred before the fourth year, and was essentially a chronic affection. Attention was directed to the frequency with which suppuration occurred in these cases of acute cervical adenitis under the usual treatment. The general surgical rule that free exit should be given for all pus accumulations found a notable exception here, for incision should be delayed until pointing had occurred, and then the opening made should not be more than a quarter of an inch in length. The evacuation of the pus should be favored by gentle pressure, and then a drainage-tube measuring $\frac{3}{16}$ of an inch in diameter and $1\frac{1}{2}$ inches in length should be inserted. This tube should be rapidly shortened so that it could be wholly removed after three or four days. This method secured rapid healing and the best cosmetic results. He had obtained only negative results from attempts at aborting the adenitis by the use of such remedies as iodine and ichthyol. His own practice now was to give tablets containing small doses of aconite, belladonna and camphor, and in addition one or two grains of potassium chlorate at intervals of two or three hours. This last remedy was almost a specific in the pharyngeal inflammations of childhood. The most important part of the treatment was the cleansing of the nose and nasopharynx by means of Dobell's or Seiler's solution poured into the nose with a teaspoon every three hours. This abortive treatment had proved singularly effective in his hands.

Discussion.—ALFRED C. COTTON (Chicago) said that in the families in which he had established the use of the nasal toilet there had not been in the past five years one case of suppurative

cervical adenitis. CHARLES G. KERLEY (New York) agreed with the reader of the paper that only a small incision was necessary, and emphasized the necessity for using a drainage-tube if one would avoid rapid closure of the wound and a repetition of the incision. There was a more distinct localization of the process in simple acute cervical adenitis than in the tuberculous form. He knew of no better internal remedy in these cases than potassium chlorate. Nasal cleansing was certainly useful, but the danger of inflaming the eustachian tube and middle-ear was great. He preferred the simple installation into the nose of albolene suitably medicated. R. B. GILBERT (Louisville, Ky.) spoke of cervical adenitis arising from injury to the scalp and of the value of full and frequently repeated doses of iodid of potassium as an abortive measure. C. F. WAHRER (Fort Madison, Iowa) referred to the mechanical injury likely to be done to the middle-ear by the pressure exerted by the gas evolved from a strong solution of hydrogen dioxide. JAMES G. MASTIN (Chicago) also spoke in favor of the internal use of potassium chlorate, but objected to cleansing the nose by any process which allowed of the use of force. He had found normal salt solution superior to albolene or other oily preparations. LEAVELL (Louisville) agreed with the last speaker as to the superiority of normal salt solution. SOUTHWORTH, in closing the discussion, said that he had been pleased to learn of the general unanimity of opinion in favor of the internal use of chlorate of potash in these cases. He had always employed it cautiously and with some anxiety concerning its possible beneficial influence on the kidneys. He had found potassium iodid chiefly of service in those cases which were either syphilitic or presented a persistent induration.

[To be continued.]

Section on Nervous and Mental Diseases.

FIRST SESSION.

Neurologic Progress and Prospects.—F. W. LANGDON (Cincinnati), chairman, stated that during the past year the progress of neurologic medicine had been satisfactory, though not marked by brilliancy of achievement. No supreme discovery or demonstration approaching in importance that of the neuron had been announced. Yet a steady advance had been kept up along the "firing line," and the skirmishers, represented by the workers in research laboratories, had penetrated farther than ever into the territory of the hitherto unknown with noticeable advantage to the position and strength of the "main army."

Trend of Modern Psychiatry and Its Relation to General Medicine.—JOHN PUNTON (Kansas City) stated that prior to the address of Dr. S. Weir Mitchell, of Philadelphia, made some years ago, in which he severely criticised the prevailing methods of the officials of insane asylums as well as the management and treatment of the insane, little was actually being done of a truly scientific nature (excepting in a few noteworthy instances) by those who had charge of the various State insane hospitals to enlighten the general medical profession concerning the true nature and character of insanity. Dr. Mitchell's bold and fearless address, however, had the desired effect of arousing the alienist from his lethargic slumber to a condition of extreme zeal and scientific activity. The amalgamation of the American Psychological Association with the Congress of Physicians and Surgeons was a step in advance and illustrated the trend of modern psychiatry. Psychiatry had as yet a great work before it as well as a rich field for conquest in exposing the various fads and frauds of the day and substituting in their stead scientific truths as revealed in the practical observation and experience of those who are working in this field of neurology. He also called attention to the advantage of admitting certain cases of acute insanity into special wards of the general hospital.

Discussion.—F. SAVARY PEARCE (Philadelphia) was in accord with the suggestion made by Dr. Punton that certain selected cases of acute insanity should be sent to the general hospital instead of the insane asylum, but for that purpose a special ward should be provided. In some cases of acute insanity, the patient's family were the very ones who insisted upon immediate removal to an asylum. The public must be educated up to the view that acute insanity was not infrequently a curable disease. D. W. BROWER (Chicago) said he was an earnest advocate of the establishment of psychopathic wards in general hospitals, but this was not always attainable. The establishment and maintenance of such a ward in a general hospital was a very expensive matter. Even under the most favorable circumstances, only selected cases of acute insanity could be thus treated. R. H. COOK (Oxford, Ohio) thought it would be a mistake to set aside a certain ward in a general hospital for insanity cases. If the insane hospital was a proper place for the treatment of cases of chronic insanity, it was also a proper place for the care of the acute cases. Undoubtedly in the newer insane asylums better provision would be made for the care of the acutely insane. J. H. MCBRIDE (Los Angeles, Cal.) said that in regard to the curability of insanity, his experience could be essentially summarized in the statement of a certain French alienist, who said that of 10 insane patients 5 would recover from the first attack and 5 would not recover. Of the 5 who recovered, 2 certainly and probably 3 would relapse. The other 2 (or possibly

3) would remain well. This gave a probable recovery rate of 20% or 30%. RICHARD DEWEY (Wauwatosa, Wis.) said insanity was so complex a condition that it was difficult to draw definite lines or make sweeping assertions. Many persons were insane, in the ordinary sense of the term, who could be treated advantageously in a general hospital, but there were other cases for whom that method was entirely inadmissible. Many patients were noisy or had suicidal tendencies, and for such special provision was necessary. Another point was that insane patients required a great deal of freedom out of doors, and hospitals in which they are taken care of should be built with that object in view. ALBERT E. STERNE (Indianapolis) said that no alienist could foresee, in any given case of insanity, even of the mildest type, what the duration of the psychosis would be. Not infrequently the seemingly mild cases, which we would like to send to the general hospital, were the very ones that grew steadily worse, and sometimes took weeks, months, and even years to recover. No general hospital, run on general lines, could possibly take care of these patients for any great length of time. The acute cases could best be taken care of in separate detention or observation hospitals. WILLIAM J. HERDMAN (Ann Arbor, Mich.) said that when Dr. Mitchell criticised the officials of insane asylums some years ago, he scarcely did justice to what was being done at that time. Many of the asylum officials were greatly handicapped by the condition under which they were obliged to work. In the progress that had taken place within the past few years in the care of the insane, the alienist had done his part, and done it well. Provision should be made in the general hospital for the care of acute cases of insanity. The early treatment of such patients was very important. He suggested the feasibility of establishing reception hospitals, either in connection with private institutions or otherwise, where the acutely insane could be kept under observation until the true character of their malady was ascertained. G. W. McCASKEY (Fort Wayne, Ind.) said that his experience with the treatment of acute insanity cases in general hospitals had not been satisfactory. The number of recoveries among such cases he thought was less than 20%.

A Contribution to the Study of Visual Disturbances in Brain Injury.—WILLIAM E. GAMBLE (Chicago) reported a case of bullet-wound of the brain, with resulting eye-symptoms, which suggested the following conclusions: (1) That a cortical lesion of the size of a .32-caliber bullet, involving the greater part (posteriorly) of the third and fourth left temporal convolutions, and injuring the extreme anterior end of the inferior occipital convolution, and a subcortical lesion penetrating the middle occipital convolution at the same level, produced verbal amnesia, especially for names and objects seen and having been seen, particularly those which have proper names, and for names of colors; (2) that verbal amnesia is a result of a lesion in the cortex of the third and fourth temporal convolutions, and injury to the cortex at the anterior end of the inferior occipital convolution; (3) that the amnesic color-blindness and alexia result from a subcortical lesion in the left middle occipital convolution; (4) that the reacquirement of these functions in a man 28 years of age is a slow and tedious process, and education of the specialized though undeveloped cells of the right hemisphere requires years for even its partial accomplishment; (5) that injury to the optic radiations of Gratiolet may produce negative scotoma, contrary to the teaching that such a lesion produces positive scotoma; (6) premature atrophy of the optic discs occurs in lesions of the left temporooccipital region.

Discussion.—H. T. PERSHING (Denver) said that while Dr. Gamble had worked out his theory with admirable care, he could not entirely subscribe to his deductions. In a case like this, in which the autopsy findings were wanting, it was a little precarious to infer the existence of a lesion from an attempted reproduction of it on the cadaver of another person. He was inclined to believe that the case was one of subcortical visual aphasia. H. T. PATRICK (Chicago) said that from the symptoms given he did not think the course of the projectile, as traced by Dr. Gamble, was necessarily the correct one. Instead of invoking the aid of theories that were as yet unproved, he thought it would be simpler to accept the explanation that the bullet, in its course, went a little deeper, so as to account for the sensory and motor disturbances in the right lower extremity. Furthermore, in the recent studies of dynamics, Horsley and others have shown that the injury of a projectile passing through the brain was not accurately represented by the course of the bullet. The force of the projectile and its explosive action were important factors, both as regarded the immediate injury and the subsequent reparative process. W. T. ECKLEY (Chicago) discussed the paper from an anatomic standpoint. He stated that in the case reported by Dr. Gamble, the patient could see and recognize things seen; he could hear and recognize things heard; he could smell and recognize things smelled; he could taste and recognize things tasted; therefore the respective sensory and memory centers of vision, audition, olfaction, and gustation were unimpaired. The patient, however, could not express in words visual, auditory, olfactory, and gustatory memories. Therefore there must have been interruption in the long association fibers connecting the cortical memory centers of these special senses with the motor speech center, and the injury must have been to the radiating fibers in the occipital

lobe, where the superior longitudinal fasciculus turns forward into the temporal lobe. In view of the symptoms, visual, auditory, olfactory, and gustatory aphasia was not the easiest explanation to be found in the assumption of a common naming center, interposed somewhere between the motor speech center and the cortical memory center previously mentioned.

A Clinical Study of Epilepsy.—J. G. BILLER (Cherokee, Iowa) referred to the difficulty in recognizing the early symptoms of epilepsy, and the frequency with which they were overlooked. The importance of heredity as an aid to diagnosis should not be disregarded. The advantage of early diagnosis and the application of proper treatment was emphasized. The speaker said that in treating epilepsy we cannot be too careful in the examination of our patient, and especially regarding habits, history, the peculiarity of the attack, and any relationship that may exist between the patient's habits and the attacks. The important point was to treat the patient and not the epilepsy. The treatment should aim at one thing in particular, namely, to increase the vigor and health of the entire system. Assimilation and elimination should be carefully looked after. He had seen what he believed to be very disastrous results from the promiscuous prescribing of bromids, especially in young children; he had observed such patients degenerate both mentally and physically so rapidly that it was impossible to attribute it to anything but the large doses of this drug. While we may get good results from the use of bromids in adults, and in some cases in children, he had yet to see any case of epilepsy that had been permanently benefited by this treatment; he had seen many cases where the attacks were diminished and even interrupted for a considerable period, but they had always returned and the patient was left in a worse condition than before.

Pathology of Inebriety.—T. D. CROTHERS (Hartford, Conn.) summarized his views as follows: 1. In all cases of inebriety there are marked changes in the capillary and vascular systems of the brain. The walls of the vessels show fibrinous deposits and scleroses. The nerve-cells and dendrites are altered and retracted, and in some instances prematurely destroyed. 2. The liver, kidneys, and heart show diminution or enlargement, with fibrous and fatty deposits. Both the organic and functional activities are changed, and sclerotic states are present. 3. Pathologic changes are apparent in the paralysis of the sense organs and the higher psychic functions of the brain. These conditions are so common following the use of alcohol—sometimes its moderate use, but always when taken in excess—as to constitute a distinct pathology traced directly to alcohol as the most prominent cause. 4. The recent researches in the chemico-physiologic action of alcohol on the heart, bloodvessels, and nerve-cells and fibers show a paralyzing and eroding action that cannot be mistaken for any other cause.

[To be continued.]

Section of Laryngology and Otology.

FIRST SESSION.

The address of the chairman expressed a plea for naming operations and other procedures from their typical anatomic characteristics rather than after the men who invented or introduced them.

Report of Cases Showing Instrument and Technic in Cure of Deaf-mutism.—MAURY M. STAPLER (Macon, Ga.) stated that of 20 cases treated, 6 gave good results; others were more or less improved. The instrument consists of a rubber tube having four branches. To this tube is fitted air-tight an ordinary aspirating pump; the tips of the branches are held air-tight, one in each nostril and in the external auditory canals. The technic consists in having patient swallow when the pump rarifies the air in the external auditory canals and middle-ears, reached through the eustachian tubes. This rarefaction removes the pressure of the foot-plate of the stapes on the oval window. The tubes can be attached to a compressed air-tank and middle-ear and eustachian tubes treated with medicated air in this way.

Discussion.—JOACHIM (New Orleans) saw some analogy between Dr. Stapler's device and that of Lucae, which is well known. COBB asked what proportion of cases of deaf-mutism have trouble with auditory nerve. P. HAMMOND could not give a definite answer on the spur of the moment. He said few cases showed any reaction of auditory nerve under treatment. CLARKSBRO (Rome, Ga.) said only about 5% of so-called deaf-mutes are absolutely deaf according to the literature. He thought the method of educating the small fragment of hearing power present in a case gave but slight lasting results. ROBERT C. MYLES preferred gentle passive movement of the drum membrane in cases of ankylosis of the ossicles, as in chronic catarrhal conditions of the middle-ear. C. M. COBB (Boston, Mass.) thought cases of deaf-mutism should be classified and considered as to treatment according to the cause. Some could be improved; others gave little or no result. DE ROALDES (New Orleans) agreed with Dr. Cobb, and said we should be cautious in passing judgment on these cases, especially those of acquired deaf-mutism. He referred to Koenig's system of testing hearing, and said the subject should be given thorough study and experimentation in a scientific way by those competent. SNOWE (Syracuse, N. Y.) believed vaporization of middle-ear by compressed air would give as good results as

any method after removal of all abnormalities in nose and nasopharynx.

Membranous Pharyngitis.—JOHN McREYNOLDS (Dallas, Texas) showed the patient to the section, and called on R. C. MYLES (New York) to speak on the case, as he had seen it a short time since. Dr. Myles said he had had a bacteriologist to examine a specimen of the membrane and he reported the presence of Friedländer's bacillus; but as this bacillus is found independent of this condition, Myles attached no importance to the report and thought it more likely of atrophic origin. B. R. SHURLEY (Detroit) asked for symptoms of a case, which were given by McReynolds. In closing, McReynolds said he agreed with Dr. Myles that organisms present played but a small part in causation.

Nasal Polypus: Origin and Treatment.—CHAS. H. BAKER (Bay City, Mich.) thought the origin largely due to sinus disease and that the best treatment was by use of the cold snare.

Discussion.—R. C. MYLES (New York) considered nasal polypus a dropsy of the nasal mucosa, due to venous pressure. He believed the removal of the middle turbinate body the best radical method of treatment. LOEB (St. Louis) liked the electrocautery snare, but thought the middle turbinate should be removed, at least eventually. MINOR (Detroit) thought turbinectomy rather too radical. He liked cureting of under surface of middle turbinate as a preliminary measure. COBB (Boston) did not believe adenotomy, no matter how thoroughly done, would cure purulent rhinitis. SCHEPPGRELL (New Orleans) exhibited a specially made snare, stronger than the one in common use, which he had used in hard, fibrous polypi with success. In conclusion, BAKER said the cold snare was more easily insinuated over polypus than the more delicately wired electrocautery snare. He also exhibited a snare used by himself with success, in which the cannula slipped forward upon the wire loop, instead of the loop being drawn back into the cannula, as in usual snares.

MYLES (New York) moved that the next paper on the list, that of SCHEPPGRELL (New Orleans), on **diphtheria of the nose**, be read by title and published in the next issue of the *Journal of the American Medical Association*, and in its stead the doctor speak informally on the use of the x-ray. The motion was carried. SCHEPPGRELL spoke particularly of its use in malignant tumors and lupus. He said the x-ray should be given a fair trial in treating these conditions. Static or coil machines were found equally good, the static possibly to be preferred by some on account of making less noise. In course of his talk he referred to a case which he recently reported cured, one of carcinoma of the larynx. He said that the growth had recurred, however, after three months, so could not be considered cured.

SECOND SESSION.

Some Observations on the Removal of Diseased Tonsils.—CHAS. M. ROBERTSON (Chicago) showed special scissors for the operation devised by himself and demonstrated a method applicable to small adherent tonsils on some half-dozen patients at the New Orleans Eye, Ear, Nose, and Throat Hospital before the entire section.

It was resolved that the retiring chairman of the section be one of the delegates to the House of Delegates, and that he choose the other member from the floor.

The Necessity of an Early Diagnosis and Treatment in Acute Suppurative Affections of the Middle-ear.—FRANK G. BOYD (Fort Worth, Texas) touched on the surgical anatomy of the region, urged thorough paracentesis of membrana tympani, and made a plea for an early diagnosis and treatment of acute suppurative conditions of the middle-ear.

Discussion.—HOMER DUPUY (New Orleans) spoke of a good local anesthetic solution for paracentesis. Formula: Anilin oil, absolute alcohol, 50 parts; cocain hydrochlorate, 18 to 20 parts. He has used this some 800 times at the New Orleans Eye, Ear, Nose, and Throat Hospital with good results. ELLETT (Memphis) liked equal parts of cocain, menthol and carbolic acid. KUYK (Richmond, Va.) thought anilin oil mixture should be used with caution. HARMON SMITH (New York) liked anilin solution or nitrous oxid. J. F. BARNHILL liked anilin solution, but had had some unpleasant results from its use. Some cases, however, unquestionably demand a general anesthetic. SCHEPPGRELL (New Orleans) considered carbolic acid a dangerous agent when used in middle-ear; liked ethyl bromid as a general anesthetic.

C. A. THIGPEN (Montgomery, Ala.) reported a case of **empyema of the frontal sinus**.

SCHEPPGRELL (New Orleans) reported and showed to the section a case of **tuberculous laryngitis**.

Thigpen's case of **frontal sinusitis** presents an anomaly in the form of absence of posterior wall with pressure on the brain, producing mental symptoms.

Discussion.—GORDON KING (New Orleans) urged the necessity of radical measures in treating cases of chronic sinusitis by thorough cureting and packing of the cavity to bring about obliteration of the cavity. Paraffin may be injected if necessary, or the Kuntz method (cutaneousperiosteal flap method) may be employed to bring about the same result. Better still is the Lucke modification of the Kuntz operation. FREER (Chicago) called attention to Killion's operation for complete obliteration of the frontal sinus, considered by him the most

radical and perfect operation known. INGALLS (Chicago) reported the cure of a case of chronic frontal sinusitis by injection of protargol.

Discussion of Robertson's paper: BARNHILL prefers the snare to the scissors method, as quicker and less painful. INGALLS (Chicago) prefers separating hook (for the anterior pillar of fauces) and cold wire snare in children, and the tonsillotome in adults. Contrary to most operators, he advocated entire removal of the gland, leaving no stump. R. C. MYLES said the method used should depend on anatomic or pathologic characteristics of the case. Thorough extirpation is important.

THIRD SESSION.

Paraffin Injected Subcutaneously for the Correction of Nasal and Other Deformities.—HARMON SMITH (New York) employs a metal-barreled syringe of 90 minims capacity. The piston can be screwed down, thus giving desirably slow injection. Showed a couple of syringes loaded with paraffin, with a melting point of 110° F. (really a combination of paraffin and petroleum jelly). Both syringes had been carried by the doctor in his pocket for several hours before he read his paper, yet the paraffin contained in them was easily ejected from the needle (which was warmed) in a semisolid state. After paraffin is injected under the skin he sprayed the part with ether, causing immediate cooling.

Discussion.—MYLES (New York) advised thorough loosening of subcutaneous tissue before injection to allow of better molding of the paraffin. In conclusion, SMITH said he would only warn surgeons to beware of hyperinjection. It is better to have the patient return in a few days for second injection than try to correct the entire deformity at once.

The Special Influence of High Altitudes on the Nose and Throat.—S. E. SOLLY (Colorado Springs) dealt mainly with regions above 4,500 feet.

R. C. MYLES (New York) read a paper entitled a general consideration of the diseases of the ethmoid cells. Some very interesting specimens, normal and pathologic, belonging to Dr. O. Joachim, of New Orleans, as well as some new forceps and other ethmoid instruments, were shown the section. In all this class of operations the cardinal principle was drainage.

Nontuberculous Hemorrhages of the Air Passages.—L. F. PAGE (Indianapolis). He also reported several cases, illustrating his paper.

The Resection Operation for the Correction of Deflections of the Nasal Septum.—OTTO T. FREER (Chicago) presented this with drawings illustrating various stages of the operation, together with some original instruments.

[To be continued.]

Section of Materia Medica, Pharmacy, and Therapeutics.

FIRST SESSION.

Chairman's Address.—SOLOMON SOLIS COHEN: Therapeutics has a number of definite principles, under each of which many facts may be grouped. Discoveries of error among the subordinate data do not invalidate the principles. Medicine must be studied as a department of biology; biology as a department of cosmology; cosmology seeks to establish not merely facts, but general laws governing the action and interaction of matter and energy, while its special departments treat of the special manifestations of universal energy and their special laws. It is needful to attain as definite a knowledge as possible of the physical and chemical processes of life, normal and abnormal, for thus only can we learn to preserve the one and to remedy the other; also the means at our command are largely physical and chemical, and must therefore be studied both from the viewpoint of physics and chemistry and from that of their effect upon life processes. The functions of therapeutics is to preserve and restore health, to prevent and remedy disease. It must be remembered that these are both vital phenomena, and the transition from one to the other is a vital process. Hence recovery is not something brought about by drugs or other agents, but a vital process due to the essential powers of living matter. It is not in mere chemical composition or in physical structure that dead cells and organisms differ from live ones, but in vital activity, and the plasticity and mobility that this imposes upon structure and chemical constitution. It has an autogenous tendency to maintain this activity against the antagonistic action of the environment, by inhibition or modification of the ordinary chemical and physical reactions and the substitution of vital defensive reactions. The least highly vitalized portions of the body, as the bones, are the most susceptible to mechanical violence, but even broken living bones and broken living twigs will try to restore their continuity, as dead bones and dead twigs will not and cannot. Mr. Spencer defines life as a continual adjustment of internal relations and external relations. This is shown as well in the production of antitoxin and bacteriolysins in infected animals and in the development of antilysins by the infecting microbes. Unusual vital phenomena are not necessarily to be interfered with, their tendency may be salutary rather than morbid, they may be part of the defensive reaction by which life is preserved. The therapist must know whether febrile heat tends to the prolongation or to the curtailment of life in a given case before he decides whether or not he will attempt to reduce it. He must also know what

other effects will follow from its reduction, and what additional effects, desirable or otherwise, will result from each of the various measures by which it may be reduced. Under all circumstances, however, it must be kept in mind that neither morbid agents nor remedial measures add anything to the powers possessed by the body. They alter, they evoke the natural actions and reactions—the vital processes of disease and recovery; but it is the living body that determines the nature of the disease process—it is the living body that determines the nature of the process of recovery; and our therapeutic measures must be guided by the natural vital defensive processes, to evoke, to stimulate, to assist; never to oppose, never to risk interference.

Is Pharmacologic Action Determined by Chemical Structure or by Physical Characters?—ARTHUR R. CUSHNY (Ann Arbor) said that so close a relation exists between the two that experimental pharmacology should renew the old alliance could the effects of drugs in the organism be coordinated with their molecular constitution. The answer was in the affirmative. Some believe and hope that the action of a drug may be deducted from its structure alone. The quest of drugs not to be pursued in the haphazard way of the past. The formula of ethyl alcohol ($\text{C}_2\text{H}_5\text{OH}$) indicates its relationship to ethane (C_2H_6). If formula was unknown it would be impossible to infer whether it would be soluble in water, or how volatile it would prove to be. The volatility of ether and chloroform determines their use as anesthetics. These physical factors are important. There is doubt whether the pharmacological effects are due to the formation of chemical combinations in the tissues or to the presence of drugs as uncombined foreign bodies in the cells and fluids. An example is the comparison of the effects of methane and methyl alcohol. The experiments of Kronka have suggested that the depressant qualities of this series are determined by some physical factor which is always present. When chloroform is no longer inhaled molecules in nerve cells slowly return to the plasma. A substance must be soluble (partially) in water or blood-plasma in order to be hypnotic. Another set of reactions which appear to rest upon the difference in physical properties is offered by the action of the salts and alkalies in the bowel. The sulphites, phosphites, tartrates, citrates, and the alkalies possess cathartic properties, while the chlorids, bromids, iodids and nitrites do not. The theory that pharmacologic action is correlated with the formation of chemical compounds has received a new lease on life. It is a wellknown fact that certain drugs act only in presence of other bodies which are inert.

Relationship Between the Pharmacologic Action of Drugs and Their Therapeutic Indications.—M. VEJUE TYROD (Boston) thinks that the use of drugs has been based on past experience. *Materia medica* has existed since the early part of the Christian era. Bitter drugs were considered dry, and acid drugs cold. Metallic combinations were introduced by German alchemists. Syphilis was successfully combated with inunctions and vapors of mercury. Cinchona was imported from India and used in treatment of fevers. Ipecac was imported from Brazil. From time of Hippocrates to the nineteenth century numerous drugs were introduced and various diseases treated by new and old remedies. Homeopathy was first introduced because of the toxic effects of drugs from their action not being known. The theory of obtaining information by observation is a good one, but must be used cautiously. One cause of the varied effects of drugs is from the use of the crude preparations. Chemistry was early placed on solid foundation and promptly made great strides. Experimental pharmacy was introduced with unlooked for results, Pasteur's experiments and discoveries are due to it. Few drugs have been found to act on cause of disease. Main strength in drugs is in their strengthening functions which are decreased and diminishing those which are increased. None of the anesthetics have ever been shown to have a direct action on heart, therefore are undesirable.

Research Problems of Pharmacology.—(Read by the chairman) TORALD SOLLMAN (Cleveland). The object of pharmacology is to supply basis for rational therapeutics. Prejudice against laboratory experiments has practically disappeared. It is necessary to study profoundly this most delicate question, and combine rational therapeutics with bedside experience, and it is important that we do not even know wherein the members of the pharmacologic group—such as the digitalis group, the bitters, the cathartics—differ from each other. It is also important to study the therapeutic and poisonous actions of aconite, alcohol, antipyretics, antiseptics, arsenic, caffeine, cathartics, cholagoges, dietaries, digitalis, digestive ferments, diuretics, ergot, gelatin (as hemostatic), hydrastis, iodids, iron, mercury, quinin, strychnin, saline infusions, etc. These should be investigated by laboratory experiments, and also carefully diagnosed cases at the bedside. It is necessary for hospitals to have a man who can attend to scientific research alone, and he could be greatly aided by older practitioners and clinicians. We know less about the mechanism of tolerance of drugs than in the case of bacterial toxins. No doubt that the action of a drug depends on its constitution. The pharmacologist and clinician should work together to ascertain the effect of these modifications. The time of drugs to be derived from the organic kingdom is still very distant. This offers an alluring field for scientifically trained pharma-

ceutical chemists. Dr. Sollman suggested that committees be appointed who would report yearly on such observations that could be made. There would be no difficulty for physicians who live near a center if they give a few hours each day to scientific research; one cause for failure is the choice of problems, which are too great. The present medical curriculum is too extensive to allow a student to do any research.

SECOND SESSION.

Mercury.—LAURA HOUSE BRANSON (Iowa City, Ia.) laid stress on the different forms of mercury and their application, and gave examples of extreme doses given from time to time. As much as one pound has been administered at a dose. Small doses are gradually getting the upper hand. She then reviewed the age, condition and disease of patient as regards dosage. Two grains of calomel has caused death, and medicinal doses have caused abortion, but 20 grains have been given with no ill effects. The hypodermic injection is not the best or safest form of administration. After reviewing the symptoms of its toxic effect, she said that mercury is eliminated by all secretions as an albuminate. It is accumulated by increasing doses. She then spoke of its various uses as purgative, antiseptic, germicide, and disinfectant, and gave various forms most applicable in different diseases. External applications may produce toxic symptoms by its accumulation as well as its internal administration. She gave the test for determining presence in system, and spoke of its incompatibility and gave instances.

Discussion.—OSBORNE had a suspicion that we will realize that the alteratives are the drugs which modify the secretions. He reviewed symptoms of tertiary syphilis and compared them to the condition caused by atrophy of the thyroid gland. It is his belief that mercury stimulates the thyroid gland. He does not like the minimum and maximum dose as given in *materia medica*; thought that the smallest dose should depend on the patient, and the maximum dose on the effect desired. ROBINSON had found a very unusual effect of mercury on the formation of the teeth when given to children even in the smallest doses. The pound doses spoken of were given in part for their effect from weight and not for systemic effects. TOMPKINS said he had found great variance in the idiosyncrasy to mercury and gave instances of a case in which the patient was poisoned by a small dose. SOLIS COHEN said he believed there was only one maximum and one minimum dose—namely, enough to do the work, and spoke of the peculiar susceptibility of different persons.

The Limitations of Antidiabetic Diet.—ARTHUR R. ELLIOTT (Chicago) said we have not reached a point where we can by any known drug or treatment cure the disease. Heretofore we have been bent on getting rid of the sugar in the urine without regard to the condition of the patient. More stress should be laid on the medical education of men in regard to the subject. Clinicians divide cases into two classes—mild and severe. The condition can be greatly controlled by diet, which must not only try to maintain weight, but should try to add to body energy. Substitutes must be found for carbohydrates, and the author suggested oils and fats. Proteids constitute the only class on which we can rely for heat-production in such cases, but they must be used with oils and fats. It is better to try to modify the glycosuria on a mixed diet than by a total abstinence. We should try to modify diet so as to supply the system and uphold it. Absolute diet can only be followed for a few months.

Discussion.—BATTES was much impressed by reference to medical education on the subject. CROFTAN thought that as much importance should be placed in quantity and quality, and in weights and measures as pertaining to glycosuria, as was placed in the measurements, etc., of drugs. He thought the antidiabetic diet necessary for the successful treatment of the disease. OSBORNE believed the dietetic treatment to be vicious. The physician must be careful about reducing the carbohydrates and sugars. Diabetes is often a condition and not a disease. MOONEY (Ala.) reported a case of complete anesthesia of foot in case of diabetes. The patient was put on dietetic treatment. The speaker laid stress on the condition of the intestinal tract. Had never seen a case which had developed before puberty and favorably, many cases in the aged ran for years. SOLIS COHEN could not agree on all extreme views brought out by discussion, but agreed with author as to importance of dietetic treatment. He gave instance of two cases—one which did well while he consumed large quantities of sugar and one which could not take the carbohydrates. WEBSTER (Chicago) believed many cases thought to be diabetes were really acute pancreatitis due to typhoid. ELLIOTT, in closing, said he had never seen a case in the negro. He believed that too much attention was focused on the glycosuria.

THIRD SESSION.

The Absorption of Iron from the Alimentary Canal.—WINFIELD S. HALL (Chicago) spoke of the quantitative experiments for iron in the body, and gave proofs of the absorption of iron. Its absorption may be affirmed by results of experiments on the excretion. He then gave tables showing how iron is absorbed, and in what proportion. He wished to prove that the absorption of iron is positive. Half-grown animals have more iron proportionately than those full-grown. The mere fact that iron is in the excretion proves that it is absorbed from the alimentary canal.

Demonstrated Pathologic Effects of Alcohol.—T. D. CROTHERS (Hartford, Conn.) said a new field is opened for the study of alcohol. For a long time study has been made with instruments of precision by the author; only healthy subjects are available. Examinations should be made daily to test the senses. After administration of alcohol the vision is markedly affected in distance and color, the hearing is diminished, certain sounds lost completely, voice several keys higher, touch diminished. There is a hyperesthetic condition of skin, which is lost after a time. Salts and acids could not be recognized by smell, and odors are confused. Taste and smell are both depressed, and muscular fatigue is marked. The action on the heart shows two periods: first, short acceleration; second, prolonged depression. The effect on the memory is marked; there is difficulty in repeating words and sentences. Alcohol in ounce doses is distinctly a paralysis, and has effect at an early period.

The Legitimate Therapeutic Use of Alcohol.—O. T. OSBORNE (New Haven) discussed the symptoms of a dose of alcohol, and said it is used more freely than its action warrants. Its local use is to stop secretion and as a preventive. It acts as a stimulant to the heart by increasing the blood-pressure through vasomotor centers. He then discussed the contraindication of alcohol. In heart failure, alcohol causes a reflex action (stimulant) through the mucous membrane of throat and stomach. In proper doses, alcohol has a progressive, beneficial effect. If overdoses are given, it will be necessary to increase the dose, which is vicious treatment. In sthenic fevers nitroglycerin has given as good results as alcohol. He then discussed alcohol as a valuable hypnotic, digestive agent, prophylactic, and stimulant.

Discussion.—MUSSEY (Philadelphia) said he had used less alcohol in the past few years than in previous years, and was gradually giving it up, as he considered it a dangerous drug. He uses it in streptococcus infection very freely, also in typhoid. He uses it more as a food than for its stimulating qualities. ROBINSON thought that many physicians used alcohol more than they realized. In puerperal septicemia he considered alcohol more valuable than any other drug. With regard to its antidotal qualities, it had the same action in the body as on it. HALBERG said that the sulfates were the chemical antidote to carbolic acid, but alcohol had an action which nothing else produced, and which was increased when camphor was used. CROTHERS, in closing, said the point had been reached in the psychologic studies where the facts were known, and they could say whether or not alcohol was tonic, and could demonstrate these facts.

The Therapeutic Value of Spinal Puncture for the Cerebral Symptoms of Typhoid Fever.—J. H. MUSSEY (Philadelphia) gave report of cases of typhoid fever with alcoholic meningitis relieved by spinal puncture, and cites other cases with symptoms known as typhoid meningismus with some rigidity of neck. Three out of four cases recovered, and he considered that spinal puncture was responsible for one case.

Discussion.—ROBINSON stated that the opinion in Germany was that the spinal puncture had a diagnostic value, but was of no value therapeutically. OSBORNE wished to know when Dr. Mussey considers the best time for puncture. MUSSEY, in closing, said when the symptoms which the French call typhoid meningismus appears he considers it the time for puncture, also when cerebral symptoms demanded leeching. He related a case of otitis media with convulsion, which was relieved by spinal puncture before the abscess burst.

Intestinal Antiseptics: Their Use and Limitations.—J. A. STORCK (New Orleans): The aromatic series must be used with care. Creasote is safer than carbolic acid. He discussed the different drugs and their position as intestinal antiseptics, saying he thought tannic acid one of the best. He laid stress on the use of salicylic acid in the treatment of dysentery and enteritis. The peroxid series has proved to be among the best germicidal agents. The sodium series is best for troubles situated in the higher intestine. The aluminum series is serviceable in cases of tuberculous ulcer when the antiseptic is not to be absorbed. Quinin is the best drug in amebic dysentery. Calomel should be used when an elementary antiseptic is desired.

Discussion.—OSBORNE prefers salol to all other intestinal antiseptics. He thinks we cannot afford to impair action of the kidneys while using such antiseptics. Care should be taken to have one which is nonirritating and nontoxic. BUTLER had found acetozone most efficient, but preferred guaiacol benzoate. ROBINSON stated that most physicians thought creasote to be the same as carbolic acid, because coal tar creasote had been used instead of the beechwood creasote. SOLIS COHEN thought that the sulfur group was the best series for intestinal antiseptics and ichthylol the best of their class. KUSTER recommended zinc sulfocarbolate. He had used it with great success.

FOURTH SESSION.

Exercise as a Mode of Treatment in Heart Disease.—N. S. DAVIS, JR. (Chicago) reviewed shortly the history of exercise treatment, treating specially of massage, Swedish gymnastics, mountain climbing, and resisting exercises. He then compared the heart to the voluntary muscles of the body and reviewed study of action of muscular exercise on the heart. He is of opinion that the effect of exercise is due to the amount of blood drawn into muscles, causing a depletion of blood to the

heart. Muscular effort must be slight, but numerous muscles must be used. The heart is strengthened in the same way as the muscles. Exercises should be graduated. Massage and resisting exercises come first. Hill climbing causes deep breathing which brings about improvement. DAVIS defined the exercises best adapted for different affections of heart; he believes that diseases of the mitral valve respond more readily than those of the aortic.

Discussion.—TOMPkins thought results depended on how much industry the patient put into it. Every one with heart trouble had a "weak link" in his makeup. Many physicians overlooked these diseases. He suggested that iron be used for all cases with heart complications. SOLIS COHEN thought that all functions should be made as equal as possible, making the depressed function come up to the highest point. DAVIS, closing, said he realized that exercise should be taken in moderation. Patients should be warned against exercises which would be harmful. He did not mean that drugs should not be used in connection with exercise.

The Limitations in the Use of Aconite and Veratrum Viride.—W. B. HILL (Milwaukee) quoted numerous men who valued aconite as an antipyretic as well as other uses. Both of these are old drugs, and have been in use many years. It is necessary to preserve the energy of patient in order to ensure recovery. The use of aconite and veratrum viride has supplanted bloodletting. Dr. Hill then gave the indications for their use, stating that one should not apply drugs solely for the reduction of temperature. Both drugs have in a measure been supplanted by new remedies, which are considered safer.

Discussion.—WEAVER said that both drugs are heart depressors and therefore the indications for their use are very limited. Physicians have paid too little attention to the muscles of the heart. When a patient has a weak heart and these drugs are used we cannot be surprised at grave results. MOODY did not consider that the action of the drugs, aconite and veratrum viride, were identical. He thought also their use was very seldom desirable. TOMPKINS valued both drugs and had obtained good results with them, but he realized that both had done a great amount of damage. CHAMBERLAIN objected to the classification of veratrum viride and aconite as identical in their effects. HILL, closing, said he did not mean to class the two as identical, although in many ways they were very similar. He did not wish to take up all the uses of the drugs. The successful use of a drug stamps it as good.

Section on Pathology and Physiology.

FIRST SESSION.

Contributions from the Hygienic Laboratory of the University of Michigan.—VICTOR C. VAUGHAN (Ann Arbor) demonstrated how he obtained the different products or protamins as he terms them with which the experiments have been made, the five papers following dealing upon these. The pure culture is poured upon the agar, and after ten days' incubation the growth is scraped from the surface. The germ substance is then extracted by means of alcohol and difute acids, dried, then powdered—at least 70% of this is pure bacteria. From these split-up substances a pigment is obtained which dyes silk cloth.

The Chemistry of B. Coli Communis.—MARY F. LEACH, in her experiments to determine whether or not the proteid constituents of these cells yield hexon bases, found bodies which closely resembles hexon bases. The paper gave a thorough review of literature, and detailed the work of the past year. She favors Kossel's contention as to the structure of the proteid molecule.

The Chemistry of B. Typhosus.—MARY WHEELER states that in her experiments she demonstrates that the cellular substances of the germ elaborates a soluble toxin, while the toxicity of the colon bacillus is due entirely to its intracellular substance. The paper gave details of a number of experiments.

The Toxicity of the Intracellular Substances of B. Typhosus.—LOUIS M. GELSTON stated that (a) the toxicity is in inverse proportion to the virulence of the culture according to the experiments of Gelston upon guineapigs on which the dilute culture proved more virulent than the concentrated; (b) its toxicity is increased when treated with a 1/10% to 1% solution of sulfuric acid. It is reduced when treated with physiologic salt solution—with sulfuric acid and then with alcohol poisonous substances have been obtained which are even more poisonous than the mother cells; (c) small amount of germ substances injected into guineapig repeated once produces a condition in which the serum of the animal gives the Widal reaction; (d) he induces a certain immunity to the guineapig by using subcutaneous injection of the germ substance. Only subcutaneous injections should be employed, as intraabdominal injections of 1-50,000 have killed the animal.

The Anthrax Toxin.—J. W. VAUGHN, in his experiments with the germ substance of *B. anthracis*, proved that by vaccination with the protamin from the bacterium upon animals immunity seems to be impossible; so far, inoculation or vaccination with dead substances renders the animal more susceptible to the living germ.

A Preliminary Chemical Study of the Hepatic Cells of

the Ox.—FRANK SPENCER and FREDERICK MUNSON, in their experiments upon animals with the protamin obtained by treating hepatic cells with dilute acids, proved the toxicity of this product upon the animals. The work has an important bearing upon the subject of autointoxication.

Multiple Periosteal Sarcomas of the Cranium, with Involvement of Retroperitoneal Lymph-nodes and Attending Severe Anemia.—WALTER L. BIERRING (Iowa City, Iowa) stated that in this case the autopsy revealed seven apparently primary sarcomatous nodules arising from the different parts of cranial periosteum, the frontal, parietal, and occipital bones being involved, the nodules involving both inner and outer plates of the cranium. Metastasis was confined to the liver and retroperitoneal lymph-nodes; blood count revealed a state of pernicious anemia; sections of nodules revealed infiltration of small round cells.

SECOND SESSION.

Studies of Antirennene.—JOSEPH MCFARLAND (Philadelphia). The investigation showed the rapidity with which animals injected with rennet furnish an antibody inhibiting its action, which antibody occurs in blood and tissue juices. It acts directly and chemically on the rennet, and for this action a definite length of time and exposure to a definite temperature are essential; that the reaction takes place according to the law of multiples, and therefore that the antirennene is of the same nature as the other antibodies, especially antitoxins. All quantities above $\frac{1}{10}$ % inhibited the coagulation of milk.

The Protoplasmic Activity of the Renal Epithelium as Determined by the Elimination of Pigments Injected Into the Circulation.—W. S. CARTER (Galveston, Tex.). In his experiments with the different pigments injected into normal animals he showed that these pigments are being thrown off by the excretory apparatus. Several dyes were used for these experiments and all had the same results. He cut the cord so as to lessen the flow, pressed the ureter so as to cause a dilation in the uriniferous tubules and pelvis. The pigments were deposited on the cells but not reabsorbed, showing conclusively that the renal epithelium acts as an excretory apparatus and not as an absorptive.

The Apparent Immunizing Value of Attenuated Tubercle Bacilli.—E. A. DE SCHWEINITZ (Washington, D. C.). Experiments begun in 1894. Used tuberculin and attenuated human tubercle bacilli to produce immunity to bovine virus in cattle. Some instances of apparent positive protection. Others not so favorable, but in general it may be said that these attenuated human bacilli seem to increase resistance of cattle to bovine tubercle bacilli.

The Successful Treatment of Streptococci Infection of the Lungs with Antistreptococci Serum.—FOSS (Phoenix, Ariz.). No record of successful treatment of streptococci infection of the lungs is on record. The doctor gives clinical cases showing remarkably successful results by the use of anti-streptococci serum. The ultimate recovery of the cases depends upon the amount of recuperative power in the individual case. A large percentage of otherwise incurable cases are cured by this treatment, which eliminates the streptococci. The cases mentioned cover a period of over a year, showing that the effect of the treatment is permanent. It is not given except before an absolute diagnosis of streptococci infection is made.

Precision in Determination of Human Parasites.—H. B. WARD (Lincoln, Neb.) Up to the present time investigations have been conducted only in Europe, but have been done of late. The paper deals on the necessity of accurate identification of the human parasite, also of the eggs obtained from sputum, urine, feces, etc., on account of the mistakes generally made by the profession in taking even banana fibers, paper, and vegetable matter for human parasites.

Condition of the Endometrium in Cases of Uterine Myomata.—THOMAS S. CULLEN (Baltimore). As a rule the cervical mucosa shows no change. Occasionally cervical polypi are present or the cervical glands dilated. Endometritis is occasionally found with inflammatory changes in adnexa. Adenocarcinoma of the corpus is frequently associated with this condition while any of the foregoing may exist; in most instances the changes are entirely mechanical. If myomata are subperitoneal or intraligamentary, the mucosa is usually normal. When a nodule impinges on the cavity, the mucosa becomes stretched until there is nothing but the surface epithelium covering the nodule, but the mucosa in the depressions remains unaltered or becomes thicker, producing polyps or distortion of mucosa. It is a general rule when the fallopian tubes are normal and no sloughing submucous myoma is present that the uterine mucosa is perfectly normal or shows simple mechanical changes. Myomectomy can be done in such cases, opening up, if necessary, a large part of the uterine cavity with little danger of infection. But if the tubes are adherent or sloughing submucous myomas exist, complete removal of uterus is indicated, the sloughing submucous nodule being previously removed. These results are based on the examination of nearly 1,000 cases.

Neuroglia and the Ependymal Epithelium of Teratoid Tumors.—HENRY A. CHRISTIAN (Boston) spoke of the methods used, and material studied, of the occurrence of neuroglia in teratoid tumors; of its relation to other elements. He also called attention to its resemblance to the central nervous system and at times to the structure in gliosis and gliomas. It

is also sometimes present in cysts lined by epithelium of ependymal origin; in these cells certain characteristically staining rolls or dots may be considered as evidence of this origin.

A Case of Gigantism and Leontiasis Ossea.—(With lantern demonstration.) Dr. LECOUNT, for Dr. BASSOE (Chicago). The growth of bones was compensated by hyperplasia of the muscles, the one-sixth of the space of the frontal skull-cap was filled with bony substance which at the time of autopsy was filled with nodular deposits.

THIRD SESSION.

A Case of Short-limbed Dwarfism.—L. HEKTOEN (Chicago). The case was that of a man, aged 45. The skeleton showed extensive curvature of spinal column, convoluted and twisted long bones with enlarged extremities and deformed pelvis. The skull contained about 110 Wormian bones. Of the diseases that may produce dwarfism, diseases of the cartilage and osteoporosis probably rank first.

The Influence of Consanguinity on the Organs of Special Sense.—L. W. DEAN (Iowa City, Iowa). The doctor only took into consideration the eye. In his three years of observation in this line he relates that 44% of the cases that came under his treatment were for diseases of the eye. No other causes could be traced but the influence of consanguinity.

The Cultivation of Trypanosoma lewisii.—F. G. NOVY and W. J. MCNEAL (Ann Arbor) have taken the flagellate hematozoan of the rat for their experiments, and planting the organism on a culture of agar and rabbit's blood, taken aseptically, have demonstrated the possibility of growing this organism in the test-tube for the period of over a year, the virulence of the culture being the same as when freshly planted. This may be considered as the first successful pure cultivation of an organism.

Section on Cutaneous Medicine and Surgery.

FIRST SESSION.

The Modern Conception of Eczema.—The chairman, JOHN A. FORDYCE (New York), referred at length to the various inflammatory affections of the skin usually included under the eczemas, such as seborrheic dermatitis and the various types of infective eczematoid dermatitis. He did not think it possible in many instances to differentiate clinically or histologically the dermatitis caused by chemical or microbe irritants from that type presumably caused by some general disturbance. He thought that such general conditions as indigestion, gout, anemia, neurasthenia, etc., lowered the powers of existence of the tissues and thereby rendered them more susceptible to the exciting cause of the disease. He referred to Bockhart's experiments with the filtered chemical products of bouillon cultures of the staphylococcus and believed with him that these toxins were concerned in the production of many of our more common types of the disease.

Discussion.—JOSEPH ZEISLER was inclined to the view that eczemas were parasitic in nature and should be treated along those lines. BULKLEY (New York) agreed with Fordyce, especially the fact that indigestion, gout, etc., lowered the powers of resistance of the tissues, rendering them a prey to disease. He thought in many cases it was the sole cause of eczema. He cited several cases in which internal treatment was alone sufficient to cure.

Results of Radiotherapy and Clinical Conclusions.—H. R. VARNEY (Detroit) reported having treated 50 cases of epithelioma of the face and hands with good success. He thought that when the lesions were extensive the light should be preceded by some surgical procedure as cureting, etc. Of these cases 19 were cured. In lupus, acne, scleroderma, psoriasis, keloid, hypertrichosis, and the pitting following smallpox his results varied. In lupus the results were very good. In acne the results were good, but more especially was this so when some erythema had been induced. His case of scleroderma was much improved. Psoriasis was always improved. Keloid not materially affected. In hypertrichosis the light was effective, but it required a long time, and the patient was liable to the usual accidents. Accordingly he did not recommend it. The pitting of smallpox was materially benefited.

Discussion.—DUNCAN reported a case of ichthyosis involving the extremities in which the x-ray had been used with apparently good effect, as shown by photographs. ROUSSEL suggested the use of oxygen for accelerating the action of the x-ray in parasitic affections. This may be obtained by the static breeze or the oxygen gas. In his experience it was of material help. JOSEPH ZEISLER suggested that more attention be paid to permanency of results in this field.

The Treatment of Syphilis by Injections.—M. S. HEIDINGSFELD (Cincinnati) realized that the subject was not new, but he thought the injection method was the best if irritating menstrums were avoided. He suggested the use of a mixture of mercury with lanolin, equal parts. Of this about 10 minims was administered about three times a week. He believed that only portion of this would undergo immediate absorption; the balance would act, so to speak, as a reserve to be absorbed later.

Fibroma Molluscum.—HENRY G. ANTHONY (Chicago) thought that pigmentation was an essential feature of the dis-

ease. Pigmentation was of two kinds: large plaque variety, varying in size to a half-dollar piece, single or multiple, characterized by distinct outlines, observed in whites and negroes. These pigmentations usually look like nevi. He contends that they are an essential part of fibroma molluscum, which is a developmental defect. Other variety is the freckled form. This form is rare. Fibroma molluscum may manifest itself by appearance of tumors alone, by appearance of tumors with pigmentation, and by appearance of pigmentation alone. The disease may appear at any time of life following acute disease. Should this acute illness be tuberculosis of the lung, the pigmentations would be assigned to tuberculosis of the suprarenal capsules, with a diagnosis of Addison's disease accompanied by nodules in the skin would follow. If, on postmortem examination, nothing would be found, the pigmentations would be assigned to arsenic.

[To be continued]

Section on Ophthalmology.

FIRST SESSION.

Two members of the Executive Committee being absent the Chair appointed Drs. Geo. E. de Schweinitz and Harold Gifford to serve during the session, Dr. Frank Allport being the member present.

On motion of EDWARD JACKSON (Denver), the section voted that the Executive Committee act as Nominating Committee, as had been done in former years.

Address of the Chairman.—JOHN E. WEEKS (New York) believed the Section on Ophthalmology to be the representative body of ophthalmologists in the United States; that its membership was wider than that of any other society. As a part of a great association it had collateral support and was founded upon a constitution and governed by by-laws sufficiently broad and liberal to permit of indefinite expansion. He considered that the method of officering the section provided against the danger of the domination of cliques and of the continuation of officers through courtesy or otherwise that might endanger its activity. He thought the possibilities of the section were great and that all should endeavor to cause these possibilities to be realized by lending their influence to the production of work of the highest order. The inducements to become identified with the section were greater than those offered by any other association of ophthalmologists in this country, some of them being contact with representative colleagues from all parts of the United States; the assurance of large attendance; the publication of accepted papers and the discussions in a journal having a larger circulation than any other medical paper in the United States, as well as the publication of the papers and discussions in a bound volume at a nominal cost. He thought it scarcely necessary to mention the recent advances in ophthalmology as they would be presented in better form and more in extenso by the members. Some lines of research that promised much could be mentioned: as the effect of the x-ray and of the Finson ray on neoplasms, detached retina, deep inflammatory processes and suppurative processes. The study of the bacteriology of the eye had not yet been exhausted. There were still some acute processes of apparently bacterial origin, as Parinaud's conjunctivitis, trachoma and some of the suppurative diseases of the cornea. The question of the value of subconjunctival, intraorbital, and intrabulbar injections, too, were as yet in a chaotic state. An exhaustive paper on orbital neoplasms, embracing a careful study of modern methods, would be heartily welcomed by all ophthalmologists.

Vernal Conjunctivitis.—WILLIAM CAMPBELL POSEY (Philadelphia) outlined the history of the generally accepted picture of the disease known as vernal conjunctivitis and of the differential diagnosis, and spoke of the frequency, physical characteristics, and distribution in the United States, based on answers to circular letters to ophthalmic surgeons in all parts of the country, and gave his observations regarding the pathology, etiology, and treatment.

Discussion.—JOHN E. WEEKS (New York) said the disease was one that had interested him a great deal, and to which he had given much study. It was his observation that the cases occurred among the well-to-do in a proportionately larger percentage than in those whose hygienic surroundings were less favorable. A striking example of the disease, he thought, was the variability in the length of time during which it persists. There seemed to be no particular predisposition, the disease occurring equally as often in the robust as in those of poor nutrition. He had been able as yet to find no proof of contagion, though he had observed it affecting several children in the same family. It differed from trachoma in that the retrolarsal fold never presented vegetations. In the treatment he had found mild measures to serve best—bathing the eyes with a warm solution of boric acid, 1% to 1½%, twice a day and the use of the yellow oxid ointment once daily. He considered that the use of cocain was not beneficial. HENRY DICKSON BRUNS (New Orleans) called attention to the relation of the disease to phlyctenular ophthalmia, and referred to the frequency of that disease in the negro race. He believed the phlyctenular ring appearing around the cornea was a phlyctenular phenomenon. HENRY GRADLE (Chicago) considered the changes of a progressive nature increasing from year to year, a history dating back more than one year being sufficient to establish a

diagnosis. The disease resembled in some respects hay-fever, though he had not seen hay-fever existing with the disease. As a rule, the retrolarsal folds were not involved, but there were exceptions. The cornea was invariably exempt. He had obtained the best results with adrenalin. HIRAM WOODS (Baltimore) thought the type of the disease seen in Baltimore corresponded with that described by Dr. Bruns. He had seen only two cases with corneal complications. There was no pain or photophobia, but the typical annular ring.

Subtropical Trachoma.—RUFIN A. WRIGHT (Mobile, Ala.) considered trachoma chiefly in its clinical aspect, basing his consideration of the disease upon the following hypotheses: That it is a distinct disease characterized by a granular and hypertrophic condition of the palpebral conjunctiva and its transition folds. It tends to progress in a fixed manner, varying only in degree. Certain complications and sequels mark its course. It is contagious and a distinct disease from follicular conjunctivitis. It is capable of being modified by proper treatment. He was of the opinion that the type of the disease in the South was milder in form and less frequent in serious complications. As to racial immunity his experience had been negative. He had never seen a case of true trachoma in the negro. The State Boards of Health had not inaugurated any system of inspection or exclusion of cases from the schools. He advocated the use of a recent remedy, copper citrate, claiming for it that it produces absorption of the granulations; that it is less irritating and readily used at home in the form of an ointment of 3% to 10% in white vaselin.

Discussion.—DUNN (Cairo) thought the treatment might be divided, in that used before the appearance of the granulations and that used after. He thought the disease might be aborted early by germicidal remedies. After the appearance of the granulations nothing compared with the use of the roller forceps. PFINGST (Louisville) thought there was considerable misconception as to the nature of genuine trachoma, and that many of the cases so-called were not trachoma. He congratulated the author of the paper upon his success with the new remedy, but thought the number of cases so treated too small to base definite conclusions upon. GIFFORD (Omaha) spoke of the difficulty of securing the drug. The few cases in which he had tried it were in line with the results obtained by Dr. Wright. HARLAN (Baltimore) reported the case of three Russians detained in Baltimore for trachoma, in which the symptoms subsided and disappeared entirely after an attack of measles; the father, who had had measles before, having to undergo a protracted course of treatment.

Experimental Study on Some Methods of Combating Postoperative Infection of the Anterior Segment of the Globe.—E. C. ELLET (Memphis, Tenn.) referred to the experiments of Ostwalt in introducing iodoform into the anterior chamber of the rabbit's eye and later injecting a culture of the staphylococcus, by which purulent inflammation was prevented, and to Romer's report of its use in three cases. The author carried out a series of seven experiments along these lines, using iodoform rods made with gelatin, containing 50% iodoform, and came to the following conclusions: Iodoform used in three cases of streptococcus infection; one failure, two successes. In two cases of staphylococcus infection, two successes. He also referred to one clinical case, cataract extraction followed by infection, in which the iodoform was introduced in the form of powder, no cones being available, result being failure. Method: peripheral incision made in cornea, the rod caught at one end with forceps and pushed into the chamber completely. The author concludes that the method has a field of usefulness, with no possibility of harm. Must be used early, certainly not later than the second day.

Discussion.—EDW. A. SHUMWAY (Philadelphia) thought the best way of introducing the iodoform was by means of these rods and that the best results might perhaps be secured by cauterizing the wound and then introducing them. It was not possible to keep the powdered drug from being washed away out of the anterior chamber. He thought it of great importance to first evacuate the opaque lens center and to use vigorous internal medication, sodium salicylate in large doses having proved of great value. FRANK ALLPORT (Chicago) had experienced great difficulty in securing the discs or rods. He had used some left him by Dr. Haab last year, but had been unable to have them properly made. One difficulty was to make the rods aseptic. Efforts to sterilize them resulted in making them difficult to handle. He had used them a number of times and obtained good results. GEO. E. DE SCHWEINITZ (Philadelphia) said the sterilization of the iodoform, which, of course, was not a sterile product, could be accomplished by washing the powder in sterile solutions of mercuric chloride. He spoke of the pain, severe in character, on the night following the introduction of the rods, necessitating the use of hypodermics of morphia. CLAIBORNE (New York) referred to some experiments which Dr. Colburn and himself were carrying out with the use of formalin. They had experimented upon rabbits, using formalin 1 to 5,000. One injected in the capsule of Tenon recovered; one with injection into vitreous went straight to destruction. In order to secure a very virulent growth of the streptococci they passed it through a second growth. With injections of this growth the eyes went to rapid destruction. He thought if any light could be thrown upon the subject it was greatly to be commended. HALE (Chicago) thought the use of the cautery with the introduction of the

iodoform would be contraindicated, as it would not tend to the preservation of the eyeball. He was not convinced that much had been accomplished practically when the eyeball had been saved but without vision. It was a successful surgical procedure, but of little benefit to the patient.

Ocular Complications of Bright's Disease.—LOUIS STRICKER (Cincinnati) thought the eyes became involved as a result of the general systemic conditions of Bright's disease, which conditions were the result of faulty kidney excretion, leading to retention of urea and other excrementitious substances in the blood, which substances are either poisons or lead to the formation of toxins, producing degenerative changes in the vessels. In the eye it was the vascular system, the choroidal and retinal vessels and its nervous expansion, the optic nerve and retina most frequently involved. The hemorrhages were due to the combined influence of arterial degeneration and increased arterial pressure. Of 16 cases, 5 were optic neuritis; 3 neuroretinitis; 2 neuroretinitis hemorrhagica; 2 of neuroretinitis and choroiditis; 1 venous thrombosis; 2 uremic amaurosis; 1 keratitis, in all probability a general uveitis. The writer concludes that the ocular complications of Bright's should lead to systemic examination; that the idea that one must find the characteristic picture is a mistake; only a small percentage of cases develop ocular symptoms, but if larger number of cases were examined more would be found to have ocular lesions; the complications are the result of altered nutrition, or toxemia, and chronic uremia; that disease of the eye coming on in the course of Bright's is of the gravest import; in acute Bright's the condition is of a more hopeful character; estimate of the urea quantity is the barometer; in the Bright's of pregnancy with ocular complications a low urea quantity should be the sign for immediate interference; that excrementitious substances retained are responsible for the inflammatory changes.

Albuminuric Retinitis and Decapsulation of the Kidney.—GEO. F. SUKER (Chicago) said the object of the paper was to elicit the interest of the members in determining whether or not decapsulation could be accepted as a curative measure for the intraocular complications. The conclusions to be drawn from the operations were not encouraging. The death rate for nephritis with fundus complications is very high. The writer concludes: that the operation so far offers no hope in cases of bilateral interstitial nephritis with retinal complications; that any improvement in the eye ground is temporary; that the operation may be of service in unilateral nephritis with fundus lesions; that the mortality rate for albuminuric retinitis has not been lessened by the operation; the retinal complications are an index to the severity of the kidney involvement; in nearly all cases of chronic nephritis cardiac involvement is present; as yet the medical treatment yields as good results as the operative.

Discussion.—HENRY BRUNS (New Orleans) agreed with Dr. Stricker that the proportion of urea excreted is of greater significance than the presence of albumin. He thought the general practitioner somewhat slow in recognizing this fact and making use of it. That whether the urea is the offending agent or not we can not say positively, but when there is a lessened excretion of this element the patient suffers. GREENWOOD (Boston) thought the cases should be considered from the standpoint of arterial degeneration rather than from the standpoint of kidney disease. JACKSON (Denver) said there could be no question of agreement with Dr. Stricker that albumin is not the factor, but that defective elimination of urea is much more important. The ocular lesions depended upon the condition of the general vascular system. He had never seen a typical case without involvement of the vessels generally. DE SCHWEINITZ (Philadelphia) believed there were two varieties: one depending upon toxic influences, whatever they may be; and the other not a complication of nephritis, but of degeneration of the vascular system. There were types, however, of retinal lesions associated with diffuse nephritis when the vessels throughout the general system were not yet in a state of degeneration. GRIFFIN (Ann Arbor) reported a case occurring in a patient whose only symptom was reduced vision, and who died in six months after the examination.

[To be continued.]

Section on Stomatology.

FIRST SESSION.

Chairman's Address.—M. L. RHEIN (New York) called the attention of the dentists to the fact that a very small minority of them practise preventive dentistry, which is the only means of guaranteeing the preservation of sound teeth. He made the recommendation that there be established in connection with training-schools for nurses schools for dental nurses, whose duty it should be to do the ordinary cleansing of the teeth under the direction of the dentist himself. There was great need of such women in hospitals and infirmaries, where the teaching of cleanliness of the mouth would be of great service in the lifting up of the unfortunate classes where these were the only means of health at their disposal.

The Vasomotor System of the Pulp.—EUGENE S. TALBOT (Chicago) said that Stephen Hale discovered in 1733 that small arteries changed their caliber; that the action of drugs on some caused them to contract, while others dilated them.

Talbot has collected 4,000 teeth, of which number 2,000 were selected and cracked in such a manner as to show the pulp. He then showed different slides taken from different pulps of teeth which were placed in Mueller's fluid and stained.

Discussion.—W. H. FLETCHER (Cincinnati) commended the paper particularly because the study of nerve distribution in the pulp has been neglected. He hopes that the reason why it is so delicate in its sensitive tendency may be discovered. T. CONSTANT (Scarborough, Eng.) was principally impressed by the large number of nonmedullated fibers shown in the slides. From clinical reasons the so-called odontoblasts have very little to do with the formation of dentine. G. S. EAMES (Boston) said the exhaustion of the nervous system controls the blood supply, therefore in a subacute inflammatory condition with one whose nervous system has been exhausted we may reach a chronic inflammatory condition of the pulp. TALBOT: Decay of teeth takes place much quicker in degenerates. I have worked for 30 years in this line and my paper covers four years of work. Modern stains enable the terminal branches of nerves to be well shown, which could not have been demonstrated 20 years ago.

SECOND SESSION.

Orthodontic Facial Orthomorphia.—W. E. WALKER (New Orleans) detailed an entirely new treatment of protrusion of the lower jaw, whereby he effected some remarkable cures. The lecture was illustrated by some 10 plaster casts of his patients in various stages of treatment. The first was that of a youth of 19 who had been always informed that the only remedy for the defect was a surgical operation removing a section from each side of the jaw. Walker diagnosed the case not so much protrusion of the lower jaw as arrested development of the upper jaw. He showed casts of the face taken before regulating and presented cast representing the patient as he appears today. The result is remarkably good. The treatment in this case consisted largely in the use of an appliance much resembling a baseball mask, and which is to be worn at night. Its object is to move the teeth forward, using the chin and forehead as anchorage. The molars form sufficient anchorage to place an appliance to hold during the day what was gained at night.

Discussion.—E. S. TALBOT said that Aristotle first clearly defined the principle of sacrifice of the part for the benefit of the whole. Some parts of the human body illustrate this truth. They are passing away for the benefit of the whole. The little toe, the floating ribs and the appendix are evidences of this fact, but chief instances occur in the face, jaws, and teeth, which are becoming smaller to allow for development of the brain. Charles V of Spain, the worst of all the monarchs of that ill-ruled country, owed his disposition to dyspepsia. Two hundred years after his death his skeleton was examined and it was found that the teeth of his lower jaw protruded beyond those of the upper jaw so that he could not properly masticate his food.

THIRD SESSION.

The symposium on the dental pulp was completed by essays by Dr. T. E. Constant, of England; Dr. J. Choquet, of Paris; Dr. Causch, of Brighton, England, and Dr. Talbot, secretary of the section.

Some histologic facts contradictory to the theory of odontoblasts, by Dr. Michael Morgenstein, of Strasburg, Germany; an article by Dr. Oskar Romer, of Strasburg, entitled pulp hypertrophy of the teeth, and by Dr. Fletcher, on the tolerance of foreign bodies by the tissues, were read by title.

Officers Elected.—George F. Eames, of Boston, chairman; E. S. Talbot, secretary; M. L. Rhein, of New York; R. R. Andrews, of Harvard University, and A. H. Peck, of Chicago, executive committee.

Therapeutic Use of the Röntgen Rays in the Oral Cavity.—GEORGE F. EAMES (Boston) illustrated his paper by exhibiting a novel apparatus of his own design which allowed the use of the rays in the mouth. He stated that the therapeutic and chemical effects were accidentally discovered. He believes that they act by the decomposition of the tissues and the liberation of oxygen. The essayist has used it extensively in treating neuralgia to good effect, but has found that when applied to the human body an excess of uric acid is produced. The x-rays do not destroy germ life by direct action any more than does the sun's rays; the bactericidal effect of both is due to ionization or electrolysis. The factors to be considered in x-raying are: The potential of the ray; the resistance of the tissue to the ray; the intensity of the radiation. The effect of the x-rays on malignant growths is summarized as follows: Relief from excruciating pain; establishment of the process of repair; reduction in size of newgrowth; removal of odor if present; cessation of discharge; softening and disintegration of lymphatic nodes; disappearance of lymphatic enlargements not submitted to treatment and often quite distant; improvement in the general health; cure up to date of a certain number of malignant growths. These changes suggest that x-ray vibration acting on cancer cells tends to stimulate many to maturity at the same time breaking down the weaker ones, which are absorbed by the lymphatics and enter the circulation, producing the autointoxication so frequently observed; the number of cells reaching maturity and those undergoing destruction depending upon the intensity of the reaction established.

ORIGINAL ARTICLES

THE SURGICAL TREATMENT OF PRURITUS VULVÆ, WITH THE REPORT OF A CASE CURED BY RESECTION OF THE GENITOCRURAL, ILIOINGUINAL, INFERIOR PUDENDAL AND SUPERFICIAL PERINEAL NERVES.¹

BY

BARTON COOKE HIRST, M.D.,

of Philadelphia.

The treatment of idiopathic pruritus vulvæ is among the unsolved problems of gynecology. The number and variety of remedial measures suggested attest the unsatisfactory results of the treatment heretofore employed. The surgical treatment seems to promise better than the application of drugs, electricity, subcutaneous normal salt solution injections, the x-rays, and general systemic treatment, which are the remedies ordinarily prescribed.

There are two surgical procedures available for the treatment of pruritus vulvæ. One is the operation first proposed by Schroeder, exsecting the portion of the labia affected, by an inverted V-shaped incision, bringing the elastic skin of the vulva over the denuded area and joining it to the mucous membrane of the introitus. This operation has not invariably been successful. The pruritus has reappeared in the same position as before, which was really to be expected, if idiopathic pruritus is a functional disease of the sensory nerves supplying the part. A resection of the nerves supplying the vulva is the other of the two operations for pruritus vulvæ. Priority for this operation is often ascribed to Sir James Y. Simpson, but he himself credits Dr. Burns, of Glasgow, with being the first to recognize "neuralgia and hyperesthesia of the vulva," and to cut the pudic nerve for it. Burns' incision for this purpose could not possibly have touched the pudic nerve. The Simpson modification of the Burns operation by a subcutaneous section of the nerve was even less likely to injure it. This proposition of Burns and Simpson has been revived from time to time, but it cannot yet be said to be a well-defined procedure with a well-considered and effectual technic. The pudic nerve has really been resected in some of the later operations, but the disadvantages of this resection are that there is danger of depriving the sphincter ani of its innervation, and so producing incontinence of gas and feces, and of not depriving the vulva of its sensory nerve supply which is contributed by the inferior pudendal, the ilioinguinal and the genital branch of the genitocrural nerve, as well as by the two perineal branches of the pudic and the nerve of the dorsum of the clitoris. The mere resection of the pudic nerve, therefore, cannot be expected to remedy a pruritus vulvæ. The only method certain to accomplish the desired result is to cut off all the sensory nerve supply to the part. This can be accomplished by making four incisions: two in the groins as for an Alexander operation, and two on the buttocks parallel with the ascending ramus of the ischium beginning just above the tuberosity and extending upward about two inches. By the groin incision the genital branch of the genitocrural and the ilioinguinal nerves can readily be exposed by a careful dissection. It may be necessary to open the inguinal canal by incising the deep fascia. After the nerves are isolated they are divided and as long a distal piece as possible is extracted by catching the nerve in the grip of a hemostat or a tissue forceps, making traction on it and twisting it.

The inferior pudendal nerve is readily isolated where it crosses the ramus of the ischium, about an inch above the tuberosity. The perineal branches of the pudic are not so easy to discover, but a careful dissection should

display them in the upper outer portion of the ischio-rectal fossa; or, in the case of the posterior superficial perineal branch, on the fascia to the inner side of the ischiac ramus. If the clitoris is involved, its dorsal nerve must be resected just above the bifurcation of the pudic nerve into its two branches, the perineal and the nerve of the dorsum of the clitoris. It is found under the inferior layer of the triangular ligament, alongside the inner surface of the ascending ramus of the ischium to the outer side of the pudic artery.

After their exposure the nerves are treated in the same way as the ilioinguinal and the genitocrural, by resection and extraction of their distal portions.

It is too early as yet to decide what the ultimate outcome of this operation will be in a number of cases, but it seems reasonable to expect a greater certainty in results than has hitherto been obtainable by any treatment for pruritus.

The writer has recently cured an intractable case with the characteristic history of having consulted several specialists and general practitioners without relief.¹

In addition to the question as to the success of this treatment in curing pruritus, it is important to obtain information as to the effect of the anesthesia of the vulva upon the future condition of the parts. There is some reason to fear atrophic changes and the development of kraurosis vulvæ as a secondary result of the resection of the nerves for pruritus. If this disadvantage is found to attach to the operation in the future, one must hesitate to recommend it unreservedly. It will be interesting also to observe the frequency of epithelioma after this surgical procedure. If kraurosis should be a consequence, and epithelioma develop in association with it, as it occasionally does, there will be still graver reason for hesitating to resort to it.

These are questions for the future to decide, and it was in the hope of eliciting an expression of opinion and of hearing the results of experience from our fellow members that this paper was presented to the Society. The writer hopes to hear an expression of opinion on four interesting points in connection with the subject:

1. Which is the better of the two surgical treatments of pruritus vulvæ, exsection of the affected skin, or resection of the sensory nerve supply?
2. What is the best surgical technic for isolating and resecting the sensory nerves supplying the vulva?
3. What has been the permanent result of this operative procedure in the experience of the members who have performed it or have had the opportunity of watching cases afterward?
4. If a cure of the pruritus can be expected, is there a likelihood, or has any one clinical evidence to present, of the development of kraurosis vulvæ, and possibly of an associated epithelioma?

Yellow Fever in Mexico.—For the second time the yellow fever invaded the city of Orizaba, commencing at the end of August last, but notwithstanding the virulence of the first cases the epidemic terminated at the beginning of December, thanks to the experience acquired during the first irruption of the disease and the firm and timely measures taken by the authorities of the State of Vera Cruz, the efficacy of isolation and disinfection being once more demonstrated. The Executive sent to Orizaba a delegate, who, in concert with the local authorities, enforced the necessary measures to prevent the epidemic from spreading beyond the city in question.

Standard for Admission to Medical Colleges.—The endowed medical colleges of the North won a victory at the Association of American Medical Colleges held recently in New Orleans, La., in the adoption of an amended report of the committee to which the matter of requirements for admission had been referred. The report as adopted requires four full years of work in the high school, or its equivalent, for eligibility to admission in a medical college. This is believed to mean the final exclusion from admission in the medical colleges of all applicants who have not had a college education. Two-thirds of the medical colleges in the country are not endowed.—[*Press report.*]

¹Since writing the above another patient has been operated on. In this patient the nerve of the dorsum of the clitoris was resected.

¹Read before the Philadelphia County Medical Society, April 8.

CONGENITAL DISLOCATION OF THE HIP: REPORT OF A BLOODLESS REPOSITION, FOLLOWED BY DEATH, WITH AN ANALYSIS OF TWENTY-THREE CASES IN PROCESS OF TREATMENT.

BY

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Clinical Professor of Orthopedic Surgery in the Jefferson Medical College.

AND

J. TORRANCE RUGH, A.B., M.D.,
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PATHOLOGIC REPORT BY

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The clinics held by Professor Adolf Lorenz on December 11 and 12, 1902, at the Jefferson Medical College Hospital and the widespread accounts of his methods and skill naturally attracted many people to his bloodless methods of reduction of congenital dislocation of the hip. Many patients were brought for treatment by the noncutting method that were beyond the age limit set by Lorenz and often positively refused to have even subcutaneous tenotomy performed. This will explain the fact that patients beyond the age of 7 were operated upon by the bloodless method that were considered too old for that method, and yet at least three cases were found to present conditions that rendered the reduction much easier than in some of the younger children.

All of the patients that have been operated upon at the Jefferson Hospital during and since the Lorenz clinics are in process of treatment, as six months from the time of operation have not yet elapsed. It is proper to speak of them at this time only as to the reduction and later when their plaster casts are removed the results can be determined.

Case No.	Name.	Sex.	Age.	Date.	Operator.
1 and 2.	R. C. Boy.	Girl.	21 months.	Dec. 11.	Double. Left.
3.	R. E. C. Boy.	20	"	"	Left.
4.	A. P. Girl.	9 years.	"	"	"
5 and 6.	M. I. " "	4	"	"	Double
7 and 8.	M. G. " "	4	"	Dec. 12	"
9.	G. R. " "	2	"	Mar. 3.	Left.
10 and 11.	H. L. " "	7	"	Feb. 6.	Double.
12.	K. C. " "	7	"	Jan. 7.	Left.
13.	A. H. Boy.	4	"	Mar. 2.	Right.
14 and 15.	E. K. " "	10	"	Feb. 11.	Double.
16.	M. H. Girl.	8	"	Mar. 21.	Right.
17.	E. M. " "	7	"	Mar. 3.	Left.
18 and 19.	B. D. " "	7	"	Mar. 18.	Double.
20.	E. R. Boy.	9½	"	Apr. 15.	Left.
21.	R. M. Girl.	3½	"	Apr. 20	"
22.	K. McF " "	3	"	Feb. 1.	"
23.	J. S. Boy.	18 months.	"	Mar. 8.	"

12 girls	{ 5 double 7 single	{ 5 left. 2 right.	5 boys	{ 1 double 4 single	{ 3 left. 1 right.
Total		{ 6 double 11 single	{ 8 left. 3 right.		
6 cases	..... 2 years and under.				
2 cases	..... 2 to 3 years of age.				
5 cases	..... 3 to 4 years of age.				
5 cases	..... 6 to 7 years of age.				
3 cases	..... 8 to 9 years of age.				
2 cases	..... 10 years of age.				

The members of the orthopedic department who assisted Dr. Lorenz on December 11 and 12 were H. Augustus Wilson, J. Torrance Rugh, F. E. Dolson, T. D. Taggart, with G. J. Schwartz etherizer, supplemented by Dr. Frederick Müller and D. D. Ashley. The 23 hips operated upon include 8 done by Lorenz and the above-named assistants, 13 done conjointly by the staff

of the orthopedic department, and 2 done outside of the hospital by Dr. Rugh. The details as practised by Lorenz have been most critically carried out. It was deemed unwise to attempt the least departure from the methods which Lorenz with his vast experience and consummate skill had demonstrated before a most critical audience of 700 medical men. That we lacked his ability was, of course, to be expected, but each of us became more and more convinced with each case that in suitable cases great force was unnecessary when skilful manipulations were employed. The very great force that is sometimes spoken of in connection with this method is employed only in those older patients in whom use has developed strong and resistant muscles and fibrous materials in relations with the hip or when unsuccessful attempts have been made at reduction.

Professor Lorenz found the reduction to be accomplished with ease in the first four hips, notwithstanding that one of the patients was 9 years of age. The next one, aged 4, proved to be extremely difficult, and taxed Dr. Lorenz's skill and strength almost to the limit, but finally yielded and demonstrated a satisfactory reduction.

The last patient, aged 4, with double dislocation, had been placed under ether to be in readiness, but could not be operated upon because of the difficulties encountered in the former case. The child had been under ether for 35 minutes before it was decided to postpone reduction in her case. She made a satisfactory return to consciousness. The day following she was again etherized, and Dr. Lorenz reduced both hips. She went to the ward in good condition at 6 p.m.

The following notes are given by Dr. P. H. Moore, the house surgeon. The phenomena were also witnessed by Dr. Wilson:

At 9.15 p.m. the right hand was observed to begin to move in an indefinite, convulsive manner, and the patient rapidly passed into a state of stupor; the eyes became fixed, pupils dilated and did not respond to light; the tongue protruded, and froth-like saliva dribbled from the mouth. The face was markedly pallid and cold. Breathing was somewhat slower than normal and labored. Occasionally the lower jaw moved slightly, but there was no biting of the tongue. The pulse was not rapid, but decidedly weak. Later it became rapid, and could not be counted owing to arm movements. The right leg was several degrees lower in temperature than the left, and offered almost no resistance to manipulation. In three-quarters of an hour the stupor began to lessen; respiration became more nearly normal. A slight flush came to the cheeks, the tongue retracted, and the muscles of the face showed some twitching movements. The right hand underwent convulsive movements, the head was turned violently from side to side; there were mild clonic convulsions of the muscles of the back, and speech, slowly restored, became coherent. In about 1½ hours the condition was practically the same as before the attack. The child did not sleep. At 12.30 (same night) there was a much briefer attack, showing some of the above phenomena in modified form. Restless sleep until morning. There was no recurrence, and no resulting paralysis. The child was languid.

Professor Lorenz, in a personal communication, said (after reading the above record of the phenomena) that he had never had a case in which convulsions followed the operation, and he considered shock and trauma as the cause of this case.

K. C. The radiograph was relied upon, and it showed the condition of the acetabulum and the head of the femur to be favorable. There had been a cutting operation performed two years previously, and it was stated that this was for the evacuation of an abscess. The head of the bone seemed to be easily pulled down to Nélaton's line before the reduction was attempted. It was discovered later, during the manipulations, that there was no head to the femur, and we inferred that it had been removed at the operation referred to. It was found to be impossible to obtain any information as to what was really done, although careful inquiries were instituted. The hospital where the child was operated upon was under a staff that was not in affiliation with members of the American Medical Association.

M. H. Some considerable edema of the right labium

majus developed about 10 hours after reduction of the hip, which necessitated catheterization for 24 hours, but it then subsided and normal functions were reestablished.

With these few exceptions the patients all progressed favorably, and after remaining quietly in bed for from three to four days, were permitted to sit up, and were usually sent out of the hospital within a week from the time of operation. They were kept under observation by physicians in attendance upon the families and reports were made to the Jefferson Hospital from time to time.

In not one case has there been any evidence of paralysis or other nerve disturbance. Pain on attempting to use the leg operated upon has generally persisted for two to four days, and after that was only present when the hamstring tendons were stretched in those cases in which some flexion of the knee persisted. This, however, soon subsided, and freedom from pain or annoyances of any kind has been the condition in all cases excepting only the inconvenience of the plaster cast and the position in which it held the leg. It was a matter of great interest to see how quickly the children learned to adapt themselves to the posture of the affected leg, and to use it in walking where only one hip had been replaced.

We were surprised to see how little attention Lorenz paid to the very carefully prepared skiagrams that accompanied each of the 20 cases submitted to his inspection and selection for his clinics on December 11 and 12. His reliance on clinical inspection of the case, the thorough manner in which he determined the existing conditions and the prospects for reduction, impressed every one with his rapidity and certainty of action and decision.

Subsequent experience has convinced us that the well recognized possibility of variously interpreting radiograms renders their use of much less real value than would naturally be supposed.

It cannot be disputed that aid can be obtained from a careful study of a radiogram in direct connection with the analysis of the clinical phenomena, but the latter are to be relied upon for definite facts as to the condition of those factors about the joint other than bone which play equally important parts in resistance to reduction. In the case of M. I., which Professor Lorenz found the most difficult of all to reduce, the radiograph showed a most favorable condition, and was therefore most misleading. The same thing has been found in several other cases, notably in E. K., age 10 years, and the radiograph indicated unfavorable conditions for the bloodless method, which was attempted only as a preliminary measure in order to prepare him for a cutting operation to be performed later in accordance with the teaching of Lorenz. Reduction, however, was accomplished by us with far greater ease and certainty than in many of the other cases.

[To be continued.]

HEART SHOWING CHRONIC TUBERCULOSIS OF THE PERICARDIUM, WITH INVOLVEMENT OF THE MYOCARDIUM.¹

BY

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of Philadelphia.

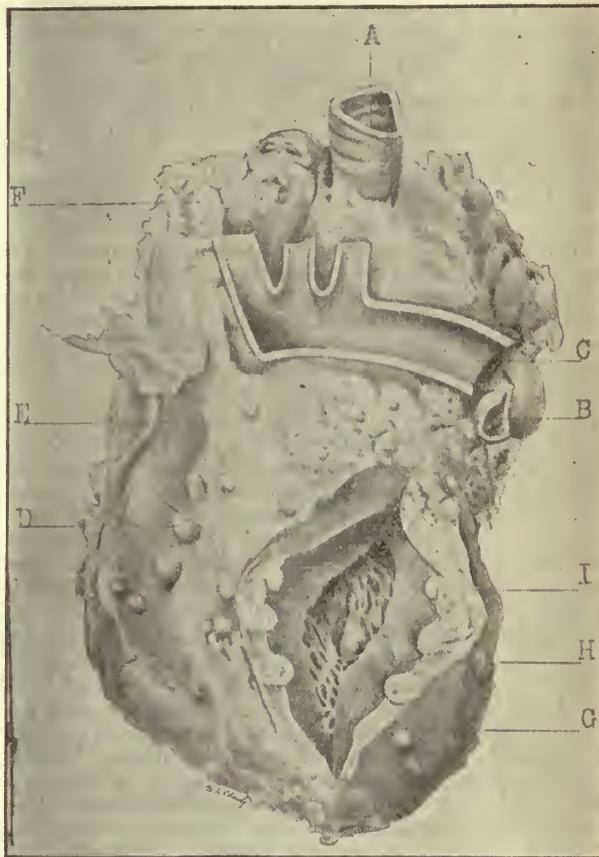
Demonstrator of Morbid Anatomy, Jefferson Medical College, Philadelphia; Director of Laboratory, Friends' Asylum for the Insane, Frankford; Assistant Pathologist, Philadelphia Hospital.

(From the Laboratories of the Jefferson Medical College Hospital.)

The specimen was obtained at autopsy from the body of a male negro, aged 24, who died in October, 1902. In March of that year he had an attack of pneumonia, from which he never fully recovered, the succeeding symptoms being pain in the chest, cough, copious expectoration, night sweats, and progressive weakness. He was admitted to the hospital August 15, 1902. The

notes state that the action of the heart was then rapid, but there was no murmur. The pulse was weak. The upper portion of the left lung was flat on percussion, this flatness changing on August 25 to high-pitched tympanitic resonance. Repeated examinations of the sputum for tubercle bacilli were negative until August 27, when they were demonstrated to be present. A note on October 6 states that the heart was not displaced and that the sounds were normal. On October 14 the patient died suddenly while in the dining-room.

Autopsy showed the mediastinal tissues to be studded with variously-sized grayish or yellowish nodules, some



Chronic, adhesive, indurative and caseous tuberculous mediastino-pericarditis. Heart and adjacent mediastinal structures. (Four-ninths natural size.) A, trachea slightly distorted by pressure; B, left bronchus, compressed by enlarged peribronchial lymph-nodes; C, aorta; the arch is displaced to the right; the middle of the arch is elongated largely at the expense of the descending portion; it is probable that a large part, but certainly not all, of this distortion is postmortem. D, one of several caseous lymph-nodes on the mediastinal aspect of the pericardium; some of these nodules are indistinguishable from caseous masses that have arisen in the pericardial synechia. E, area of caseous tuberculosis occupying fissure between the left auricle and corresponding ventricle. F, caseous mediastinal (peritracheal) lymph-nodes. G, thickened and adherent parietal layer of the pericardium; H, thickened visceral layer of the pericardium (epicardium); the space between F and G is occupied by firm, greyish, slightly hyaline fibrous tissue in which are embedded many caseous areas. I, caseous mass extending into the myocardium; even in this short incision, through the lateral wall of the left ventricle, several points of myocardial invasion can be seen.

of which had caseous centers. The heart and the mediastinal tissues formed practically one large adherent nodular mass. Both pleuras were universally adherent. In freeing adhesions upon the left side, the lung, which was markedly caseous and contained many cavities, was extensively torn. The pericardium is universally adherent, the external surface being studded with yellowish nodules, varying from 0.2 to 2 cm. in diameter. In a number of places these nodules extend into the heart muscle, in some instances to a depth of more than a centimeter. The involvement of the heart is greatest in the left ventricle, but is quite extensive in

¹Read at the Philadelphia Pathological Society, March 12, 1903.

the right. The liver, spleen, pancreas and kidneys contain miliary tubercles.

Microscopic examination shows the adhesions uniting the two layers of the pericardium to be formed of granulation and fibrous tissues in which are disseminated areas of caseation. At many points the visceral pericardium has disappeared, and the heart muscle shows invasion by lymphoid cells or even granulation and fibrous tissues. Sections from a dozen blocks have been examined, but in none of them have structures bearing any resemblance to an anatomic tubercle or a giant cell been found. A very few tubercle bacilli were found in one section.

Tuberculous pericarditis is not a notably infrequent condition, this specimen being presented because of the extent rather than the nature of the lesion. In 1,048 autopsies Wells¹ found tuberculous pericarditis ten times and Baginsky reports fifteen cases in 4,500 autopsies. Robinson² reports two cases, and fully discusses diagnosis and treatment. Riesman³ reports a case of primary tuberculosis of the pericardium, and states that the primary form is rare, the most frequent source of infection being a tuberculous mediastinal or bronchial lymph gland, which was in all probability the source in this instance. To Riesman's article is appended a full bibliography. Sabin⁴ reports a case in which recovery followed repeatedappings of the pericardium and the right pleura. Tubercle bacilli were found in the pericardial, but not in the pleural, effusion. Robinson states that tuberculosis as found in the pericardium is generally either of the miliary form or cheesy masses, though in certain instances there is no evidence of tuberculous deposit in the adhesions present. The myocardium may be affected at the same time as the pericardium, the former coming primarily, as a rule, from the latter. The caseous form penetrates deeper and may perforate the cardiac wall. Myocardial tuberculosis, however, is rare, Anders⁵ collecting from literature but 71 cases, to which he adds one of his own. He states that Valentin found 7 cases of myocardial tuberculosis in 3,203 autopsies, and Sangalli 2 cases in autopsies upon 796 tuberculous patients. With the statement of Wells, corroborated by Osler, that "tubercular pericarditis is generally unaccompanied by any symptoms referable to the heart, and is almost always an autopsy finding," Robinson is inclined to differ. It may be of interest to note in this connection that Ferrand and Rathery⁶ report a case of tuberculous vegetative endocarditis following primary tuberculosis of the spleen. Tubercle bacilli were found in the vegetations and in clotted blood in the heart. The question of adhesive mediastinopericarditis arises in this connection, but its consideration is beyond the scope of this brief paper. A careful clinical study of a case in which this condition, presumably tuberculous in origin, was diagnosed, has been recently published by Gibson, Bullmore, and Conder.⁷ They compare their case with those of Harris,⁸ whose exhaustive work is based on a study of 25 cases.

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American Pork Admitted to Turkey.—Minister Leishman, at Pera, has cabled the State Department that the prohibition of American pork in Turkey, which has been in effect for five years, has been removed, and orders have been issued permitting entry, after the customary inspection.

Cholera in Manila.—The disease is reported to be steadily increasing throughout the Philippine Islands. The deaths in Manila average 20 weekly. The health authorities are taking every precaution against the spread of the disease, giving special attention to preventing a contamination of the water-supply.

SARCOMA OF THE THUMB: REPORT OF TWO CASES.

BY

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With Pathologic Examination

BY

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Because of the comparative rarity as regards location, I desire to report two cases of sarcoma of the thumb, the two patients having presented themselves within an interval of but four days.

In searching for information on the subject, a perfect sea of literature on sarcoma was encountered, and finally, after continued investigation, three cases of thumb sarcoma were found recorded in Mr. J. Bland Sutton's excellent and latest work on tumors; one case reported by Ferguson,¹ in a man aged 36; one by Hutchinson,² in a woman of 60; one by Bowlby,³ in a woman of 55.

Nunn has reported a case of sarcoma of the fifth finger in a woman, and Lediard, one of the index finger also in a woman. In this country Dr. W. B. Coley had a patient with a sarcoma of the hand⁴ and Dr. A. G. Gerster one of fibrosarcoma of the finger.⁵ Sutherland, of London, has a case on record of epithelioma involving the metacarpal bone of the thumb; and several cases of cysts, lipomas, etc., of the fingers have also been recorded by Stabb Duboy and others, but in the language of Mr. Kipling, "that's another story."

The diagnosis was made chiefly by exclusion. On first inspection it seemed probable that the trouble might be either the ravages of syphilis or tuberculosis, or a malignant growth. The first was excluded by the therapeutic test, the second by the history of the patient and by close observation of the clinical appearance of the condition. This left the diagnosis one of malignant growth, which was afterward confirmed by the microscope. The result of the microscopic examination proved one case to be a giant-celled sarcoma, which is said to be the least malignant form, and the other a melanosarcoma, probably the most malignant kind.

CASE I.—A female, aged 39, presented herself about July 17, 1901. Family history negative; specific history negative. While washing windows two months previous she run a splinter under the thumb nail. A part of it was removed at the time by a neighboring druggist, a portion of the decayed wood remaining; suppuration followed and the nail came away, exhibiting a small ulcerated surface; the ulceration becoming gradually worse, and finding no relief, she sought medical advice. When first seen the thumb presented the appearance of a miniature bass-drum stick, the growth on the end being about the size of an English walnut. It was fungoid in appearance, greatly resembling exuberant granulation tissue. On the palmar surface of the distal phalanx the skin was healthy, the tumor being confined, in the main, to the dorsum. The tissues seemed to have proliferated very rapidly; so much so that the fungous mass turned on itself and overlapped the healthy skin on the dorsum, extending a little beyond the first joint. The tumor was about one inch and a quarter in length and one inch broad. The thumb was dressed antiseptically and the patient put on mercury and the iodids for four weeks, after which period no beneficial result was perceptible. Microscopic examination proved the case one of giant-celled sarcoma.

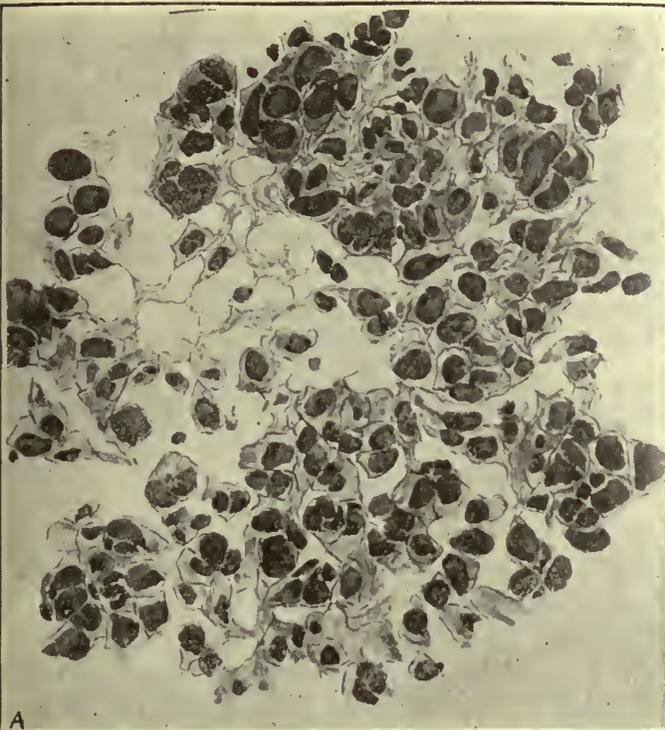
Amputation was advised and consented to. The operation was done under ether, and the ordinary oval or racket incision employed. The head of the metacarpal bone was removed to make the hand look better. The recovery was uneventful. A longitudinal section was made through the amputated thumb, which shows the growth coming from the periosteum.

Microscopic Examination.—The sections removed before and after amputation show the same picture; both were removed from the dorsum of the tumor.

Sections are made up of large round-cells; they contain proportionately large nuclei and are separated from each other by a scant amount of stroma. About the periphery are a number of round or oblong cells of large size which contain several

nuclei situated at the center of each cell. These cells are found only along the borders of the growth. The tissue is abundantly supplied with newly-formed bloodvessels. Pigmentation is absent. (See Fig. 1, Case I.)

vious to the present visit he noticed that his nail split slightly to one side of its middle, and in a short time it came off altogether. A small spot slightly pigmented was noticed in the film of skin over the nail-bed, which soon ulcerated through,



Case I.

Fig. 1.

Case II.

The tumor is a giant-celled sarcoma, probably less malignant than that in Case II.

Three weeks later microscopic examination of exuberant granulation tissue which had formed on the stump of the amputation wound showed no evidence of malignancy. [G.R.S.]

encroaching upon the adjacent skin. At the first examination the thumb showed a large fungous, spongy mass involving the whole of the distal phalanx, and extending beyond the first joint on the dorsum, in fact, half way to the second joint. The growth was about three inches long by two inches broad. It was exceedingly vascular, the removal of the dressings causing profuse hemorrhage. Here and there on the ulcerated surface were little patches of epidermis, as if they had been grafted on. On the dorsum the appearance was one of sloughing exuberant granulation, but on the palmar surface the ulcerated part was very dark, a deep black in some parts. The line between the diseased and healthy skin was of a dirty yellow color and the healthy part was excoriated from the discharge. A number of skin lesions were also observed on the back of both hands, dark red and scaly in character, which were probably specific in nature.

The thumb was dressed antiseptically and the patient put on syphilitic treatment for four weeks, during which time all the cutaneous lesions disappeared.

Microscopic examination revealed the fact that the growth was a melanosarcoma. Amputation was advised and the patient disappeared for fully a month. He afterward returned and consented to operation. In the meanwhile the growth had extended considerably, more on the dorsal than on the palmar surface. Operation was performed with the same incision as in Case I, only about one-third of the metacarpal had to be sacrificed to get healthy flaps. The lower end of the incision suppurated and two stitches were removed for drainage; for several days a dirty, pinkish sanious discharge exuded through this opening. It ceased finally, and the patient went on to recovery without further hindrance.

Microscopic Examination.—Section taken from the center of the tumor before operation.

At first sight the growth resembles carcinoma of the alveolar type. At the periphery there are numerous newly-formed bloodvessels and the tissue is infiltrated with leukocytes. Trabeculae of fibrous tissue extend down from the granulation tissue on the outside. Between the trabeculae are numerous large round cells, the nuclei of which fill up most of the cell body. In some places the nuclei contain pigment. Among the cells is a moderate amount of connective tissue stroma and a few leukocytes. Near the periphery are a few large cells which contain several irregularly arranged nuclei. The sections removed from the sloughing ulcerations on dorsum after amputation show a condition similar to the one previously described. Sections removed from the blackened area on the palmar surface show a mixed cell-growth with a considerable amount of pigment and high vascularity.

In Fig. 1, Case II, which is a sketch of sections from the first

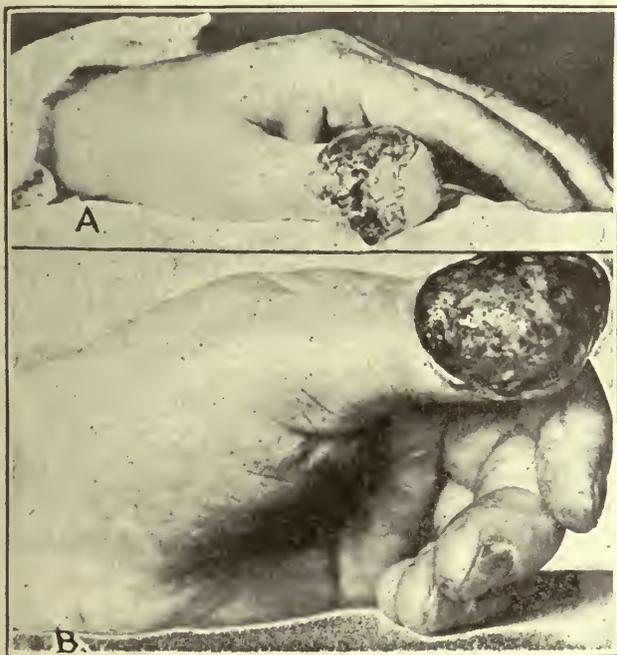


Fig. 2. A.—Case I. B.—Case II.

CASE II.—A male, aged 43, presented himself about July 19, 1901. Family history negative. His wife died of "cancer of breast." He gives a history of a chancre 25 years ago, but does not remember any eruption following. Six months pre-

piece, some of the cells have fallen out in the manipulation of the specimen.

The tumor is a giant-celled melanosarcoma, probably originating from the bone, although none of the sections examined showed this definitely. It is a growth of great malignancy and of rapid formation. [G.R.S.]

In order to be sure of careful investigation both patients were put on increasing doses of "mixed treatment" for a month, during which time two microscopic examinations were made of each thumb. The specific treatment had no appreciable effect, and every report from the laboratory said unmistakably sarcoma.

A point to be taken into consideration is that both specimens showed giant cells; and as giant-cell sarcomas are frequently maroon colored on section it occurred to me that the second case might be only an ordinary giant-celled sarcoma. More proof in this direction is the fact that the man's urine contained no pigment, and his lymphatics were not implicated. Be that as it may, Dr. Satterlee assures me, after repeated examinations, that the growth is undoubtedly one of the melanotic variety. No section was made of the man's thumb, in order to have the tumor intact for inspection.

According to Bland-Sutton, primary melanosarcoma of the skin happens most frequently in pigmented moles, next in frequency comes the pigmented skin of the genitals, and the rarest form of all occurs in or near the nail of a finger or toe. These growths began as a pigmented spot in the nail matrix. In neither of the patients were the lymphatics involved at or previous to the time of operation. I removed the man's thumb under very adverse circumstances, and as said before in this history, a certain amount of suppuration took place, and two of the stitches were removed to secure proper drainage. This point may awaken some interest and possibly may be of some benefit to the man, as Dr. Wyeth of this city has reported a case in which a large sarcoma of the abdominal wall was only partially removed, suppuration ensued, and the patient made a good recovery, no recurrence having taken place after 10 years.

A photograph of each thumb has been made and a microscopic drawing from each case is also shown.

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SERIOUS INFECTION FOLLOWING PUNCTURE, LACERATION, OR CONTUSION OF THE FINGER OR TOE.

BY

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I have been peculiarly struck by the large number of very grave cases of "white erysipelas" or widespread and intensely acute phlegmonous inflammation, following comparatively trivial injury in all instances, which came under my observation in dispensary and hospital practice during last December and January. The infection was of a most virulent type, spreading rapidly up the forearm from wounds of the fingers.

In one instance a hearty, vigorous man sustained a puncture in the pulp of his index finger from a penknife. He gave the matter little attention until four days later, when inflammatory changes extended up into the hand; four days subsequent to this he declined the drastic resources of surgery appropriate for less dangerous cases. A week later when septicemia was present an amputation at the shoulder-joint was offered as his only hope, but he died the same night with nothing being done.

An important question in connection with this class of cases relates to the causes in operation which initiate

these grave pathologic changes. Are they purely local and solely dependent on the virulence of some specific germ or toxic substance forced into the tissues at the time of accident? They evidently are not; the microbe is certainly on the ground, but the way must be prepared for it.

We note that this class of cases occurs, by all odds, more frequently in the winter and spring seasons, and that in some years such cases occur in greater numbers than others, at about the time when carbuncle, felon, and their next of kin, erysipelas, are most in evidence.

The late Sir James Paget, in writing on infection at autopsies, expressed his belief that the state of the system of the poisoned individual was, without doubt, a factor; that the degree of tolerance or immunity from time to time varied. Early and active treatment can stamp out the lethal element in operation, in every instance, as delay, or lack of skill or nerve, means very serious consequences to the afflicted.

Let us first fasten the fact in our mind that the early changes are always local, that the lymph ganglions constitute powerful defenses against systemic invasion, and that when toxic absorption, by the circulation, is in small doses it will be neutralized by the plasma or oxidized in the pulmonary organs.

The first tissues seized on by the lethal elements in operation here, are the cutaneous and connective, precisely the same as we find in genuine erysipelas; and clinically, it only differs from it in the absence of the lobster redness and metastatic invasion. Lymphangitis is always well pronounced; but the real mischief only begins when the vascular supply is compromised. Vasomotor paralysis is always an early phenomenon, and however a case may terminate, the pathologic feature is slow to yield.

The surface and subcutaneous veins are the seat of inflammatory changes, and hence there is a widespread stasis in the capillaries and vesicles. This stagnant state permits of serous effusion and widespread edema. The tissues are in a condition of incipient asphyxia; the agonizing distress of the patient at this stage is nature's monitor of danger; it is the cry of the terminal nerve filaments for fresh blood. Let us beware, then, of the free use of narcotics at this juncture. From the capillaries there is a propagation backward into the arteries of septic invasion, and once their intima is seized on marked changes spread rapidly toward the body, embolic occlusion of the main trunks preceding. The enormously distended, engorged limb, in advanced cases, is supersaturated by a most virulent substance; the blood-vessels, notably the veins, are overcharged with the putrid products of infective changes. By a salutary provision of the economy their walls are paralyzed and their contents motionless, still, and stagnant.

An insight into the pathology clearly suggests the line of attack: it must be local, *i. e.*, applied to the limb involved, or its appendage when we are only assured that its vitality is intact. Nothing less than the free use of the scalpel will suffice; the limb must be freely exsanguinated in the areas of the greatest distention; the tissues must be disinfected; and here, in my opinion, comes in one of the most valuable discoveries of modern times, the Powell-Phelps mode of directly charging the tissues with pure carbolic acid, to be displaced and neutralized by strong alcohol.

In one of my own cases that seemed to carry a forlorn hope, through two very large incisions, carried down to the bone shafts, and after freely dividing the muscle-sheaths, four ounces of pure phenic acid was injected; then, after a moment, squeezed out and followed by pure alcohol. The local and systemic changes resulting were most salutary. After this is done, the very warm emollient dressings, heat and moisture, free drainage, and rest are ordered.

After operation—for this is a radical surgical procedure—the patient is in a state bordering on collapse.

For this opium is invaluable, the pure resin, in pill or powder; hot drinks, coffee, tea, fresh beef juice, soups, milk and eggs. After the temperature falls small doses of calomel, quinin, Huxham's tincture of cinchona, or other bitter tonic may be given with advantage.

Recovery is slow; in some cases there has been most destructive waste of muscle, with widespread, intermuscular deposits of inflammation, so that in various groups of muscles there follows diminished contractile energy. The appendages—the fingers, the hand and wrist—over a long period remain stiff and weak; in some rare instances this impairment in the function of the limb remains permanent.

THE USES AND ABUSES OF THE URETHRAL SOUND.

BY

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Considering the steady advancement made in all branches of medical science during the past few years it may seem a loss of time to write of such a trivial matter as the use of the male urethral sound. At the outset it may be stated that it is not my intention to bring out anything new or startling regarding an instrument that has been used for centuries, but rather by some undisputed facts to try and convince my readers that many of the sought for but unobtained results, also the complications which so frequently follow, are not due directly to the use of the sound, but to the condition of the mucous membrane at the time the instrument was used. No other instrument known to surgery will give the same happy results as will the sound when it is used at the proper time and in cases indicating it. It cannot be denied that no matter how intelligently used irritation will follow, more or less in degree with the already existing pathologic condition present. From this it must be evident that the use of the sound when there is a general inflammation from the meatus to the internal sphincter, even though it be of a chronic nature, must surely be followed by more disturbance than if the condition was localized. The steel sound is the very best instrument for promoting absorption of inflammatory deposit impinging upon and surrounding a dilatable tube, but the great question why do not more favorable results follow its use may be answered: It is not used at a time when it and nothing else will give the desired results. For instance, in the case of acute urethritis, if the discharge has not ceased in from four to six weeks, even though it be the first infection, the patient is told he has a stricture and treatment by sound is begun, resulting in 99% of the cases in exaggerating the condition and in a goodly number being the direct cause of epididymitis, prostatitis, vesiculitis, etc., often becoming chronic and making an invalid of the patient for months or years, and in some instances the patients never recover.

When the prostate is involved the inflammation is usually of the follicular variety and there is no doubt that at this time we have the first seed of hypertrophy. When dilation of the urethra is necessary, except in those cases in which there has never been infection, either simple or specific, pus is always present. Although the patient may urinate just previous to sounding, if the canal were examined pus would be found adhering to the walls; this is especially true when the inflammation is of a very chronic nature such as exists in front of or behind a stricture, or when granulations are present. When such a condition is present it must be evident that when a sound, or for that matter any instrument, is passed through the canal that has not been previously flushed, the adherent debris will be carried forward, being forced into the numerous follicles along the canal and in the prostate. Gonococci may not be found in the pus, but streptococci and staphylococci are demonstrable

in every case, and these are capable of producing inflammation, although it will be of a milder character than by the former.

Some general rules for use of the steel sound follow:

1. When the urethra has been involved by inflammation, specific, or otherwise, no instrument, and especially the steel sound, should be used until the urine is clear excepting for shreds or floating particles. (Prostatic plugs.)
2. The urethra should in all cases be flushed with an antiseptic solution (formaldehyd, 1-3,000) before the passage of any instrument. Following its withdrawal an astringent should be used, preferably silver nitrate 1-10,000.
3. A sound should never be passed for at least three months following acute gonorrhoeal infection, and then only when the urine is as in No. 1.
4. When dilation of a stricture will answer, sounds are increased in size according to the tissue forming the pathologic growth and its location. True gonorrhoeal strictures of the deep urethra may be dilated five or six numbers at each sitting, up to 18 or 20 F.; following this two or three numbers should be the rule.
5. In case of traumatic or gonorrhoeal stricture in the pendulous urethra, or when the sound is followed by marked irritation, etc., cutting gives the best result.
6. When the contraction seems not to dilate without too much force, weekly treatments being followed by considerable irritation, making the interval 10 to 14 days is generally followed by the most gratifying results.
7. Stricture can be permanently eradicated. This occurs when after dilating the circular muscles of the canal to their fullest extent, without rupturing, no bloody string is found in the washings after four to six dilations which have varied from one to four months apart.

SPECIAL ARTICLES

THE DUTIES AND RESPONSIBILITIES OF TRUSTEES OF PUBLIC MEDICAL INSTITUTIONS.

The Presidential Address at the Sixth Congress of American Physicians and Surgeons, Washington, May 12, 1903.

BY

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The value of occasional and stated gatherings of the principal leaders of medical thought in the various special departments is acknowledged by all. Certainly those who have attended this Congress, now held for the sixth time, have felt its broadening influence. We are all apt to become narrow when we are devoted heart and soul to one specialty, be it medicine, surgery, physiology, ophthalmology, or any other. When we meet nearly all of the more prominent men in cognate interrelated branches of medicine in Washington every third year, we are sure to find that there are as interesting and as important questions in other specialties as there are in our own; and, moreover, we are sure to find that there are men of as acute intelligence, wide reading, and original thought in other than our own departments whom it is our pleasure to meet, and whose acquaintance becomes not only valuable for what we find them to be, but because of the stimulus that they give to our own thoughts.

Ordinarily the Presidential address has been devoted to some special professional topic. My first idea was to select such a subject for tonight, but as I was absent from the country when I received the very highly appreciated notice of my selection, I asked the members of the executive committee for suggestions, being sure that their united judgment would be better than my own. I was very glad when they proposed

the topic upon which I shall address you, partly because it is different from the usual type of such addresses, and partly because it seems to me appropriate to the present time. I shall, therefore, give the time at my disposal to presenting to you some thoughts on "The Duties and Responsibilities of Trustees of Public Medical Institutions."

Before entering upon my topic I beg to state explicitly that what I may say is offered in no spirit of unfriendly criticism, but only by way of friendly suggestion. I have been too long and too intimately associated with scores of such trustees not to know that they are almost without exception generous, self-sacrificing, giving of their time and money and thoughtful care without stint and often sacrificing personal convenience and comfort for the good of the college or hospital which they so faithfully serve. Anxious to discharge their trust to the best of their ability, I am sure they will accept these suggestions, the fruit of 40 years of personal service as a teacher and a hospital surgeon, in the same friendly spirit in which they are offered.

There are two such classes of institutions to be considered: (1) Medical colleges, and (2) Hospitals, whether they be connected with medical schools or not.

There is, it is true, a third class of trustees for a wholly new kind of medical institution which has arisen as a modern Minerva Medica, born full-armed for the fray. Of this class we have as yet but a single example—the Rockefeller Institute for Medical Research. Akin to it are laboratories for special investigations such as the two Cancer Laboratories in Buffalo and Boston. But the Rockefeller Institute is so recent, and its scope at present necessarily so undetermined, that I would not venture to consider the duties of these trustees, and I am sure their responsibilities are adequately felt by them. Moreover, their admirable selection of a Director for the institution is the best pledge of a future wise administration. I heartily congratulate the Profession and America upon the establishment of so peculiarly useful an institution. Its founder has wisely left its work unhampered saving as to its general purpose, and the whole world, and especially the United States, will soon be his debtor for researches and discoveries that will abridge or even abolish some diseases, shorten sickness, prolong life, and add enormously to the sum of human happiness. Could any man of wealth by any possible earthly gift win for himself a higher reward or a happier recollection when he faces the future world?

Though not a medical institution, I cannot refrain also at this point from expressing not only for myself, but for you, our hearty appreciation of what the Carnegie Institution has done for medicine in the reestablishment of the *Index Medicus*. This publication is essentially and peculiarly American in origin, but its usefulness is worldwide. It aids alike an author in Japan or in India, in Europe or America. It is one of the best and wisest undertakings of this lusty educational giant. But to ensure the permanent publication of the *Index Medicus* the profession must show that it really values this generous gift. Unless the *Index* finds a hearty support in the profession abroad and especially at home, we can hardly expect the continued publication of this unique and invaluable publication. May I earnestly ask, therefore, of this audience of the chief medical authors of the United States that each one will demonstrate his appreciation by an immediate subscription to the *Index Medicus*.

There are some matters common both to the medical college and the hospital which may be considered together. The most important of all these is the cordial and hearty cooperation of the medical men connected with the college or hospital and the boards of trustees. In order to ensure this the members of each body must be acquainted with each other. I have known of instances in which if a professor in the medical school ventured to suggest any changes as to its management, or even to state his opinion as to the qualifications of a candidate for a vacant professorship, his suggestions were resented as an interference instead of being welcomed as a means of valuable information. I take it for granted that we should not offer such suggestions after the fashion of a partisan either of a man or a measure, for the advancement of a friend or to the disadvantage of an enemy, but solely for the good of the institution with which we are connected. He who would endeavor to foist a friend

upon an institution *because* he is his friend, and in spite of the fact that a rival is the abler man and better fitted for the position, is just as false to his duty, to his college, or to his hospital, as the trustee who would vote for the less desirable man on the ground of personal friendship, or of association in some society, church or other similar body. Of all these influences that arising from membership in the same religious body is, I fear, the most frequent and yet most absolutely indefensible. What one's theological opinions are has no more to do with his qualifications for a professional or hospital appointment than his opinions on protection as against free trade, or whether Bacon or Shakespeare wrote Hamlet.

I have always honored one of a board of trustees, who was an old personal friend of my father's and who had known me from boyhood, yet who in my early professional career, when I asked for his vote for an important hospital appointment, had the manly courage to tell me that he thought a rival, who was older and more experienced, was the better man for the place and that he should, accordingly, vote for him and not for me. I confess it was at the time a bitter disappointment to me, but I never had so high an opinion of my father's friend as after he denied me his vote.

There should be in my opinion but two questions asked in considering the election of either a professor or a hospital physician or surgeon. First, which one of the candidates for the place has the best qualifications from the medical point of view? This should include not only his scientific knowledge, but his ability practically to impart or to apply that knowledge. Secondly, are his personal qualifications and character such as to make him a desirable incumbent of the position. It must be remembered that a man may be scientifically and practically an extremely able man, but of such a quarrelsome disposition or the unfortunate possessor of some other similar personal disqualification as to make him a most undesirable member of a staff. The personal equation may be quite as important as the scientific qualification. Of course his personal moral character should be above reproach. To place a drunkard or a libertine in a position of so much responsibility and influence is to abuse a trust. No patient should be confided to the care of such a man and still more no such man should be made an instructor of young men, upon whom his influence would be most disastrous.

It is often extremely difficult for a layman to reach a correct conclusion as to the qualifications of medical men for college or hospital appointments, because of the confident, yet conflicting statements of their friends. But there is apt to be a certain clear partisanship in such statements which betrays the purpose of the speaker. Especially will this be so if he advocates the election of A or B on the lower grounds of friendship, social position, or for other similar motives. The man who is advocating the best man because he is the best man has the stamp of sincerity upon every word.

Perhaps the most striking example I can adduce of such an unfortunate misjudgment is Dr. S. Weir Mitchell, who was denied a professorship in both the medical institutions of his native city, thus depriving them of the most brilliant medical genius that America has produced within my personal recollection. For him it is now a matter of indifference, and for American literature it has been a gain. But for medicine, and especially for physiology, it was an immense loss. Both of his rivals were estimable, worthy gentlemen who held an honorable position in the profession, it is true, but Mitchell is a genius. "Eclipse was first; the rest were nowhere."

One of the best methods of bringing the medical board and the board of trustees into more intimate contact would be to have the dean or a committee of the faculty, or, in a hospital, if the staff is not too large, the whole staff invited to the meetings of the board. Here I can speak from personal experience. At the Orthopedic Hospital and Infirmary for Nervous Diseases in Philadelphia there are three surgeons and three physicians. These members of the medical staff are invited to meet with the board of managers at each monthly meeting, excepting the annual meeting, when the medical staff is elected. They are free to express their opinions on any topic relating to the management of the hospital to which their judgment may contribute something of value, but when a decision is taken they have no vote. It is purely in an advisory

capacity and for the purpose of giving and receiving information that they are present. The plan works exceedingly well. When economy is necessary in the hospital the staff is fully acquainted with the fact and can cooperate with the trustees; when expenses have run up from carelessness in the wasteful use of dressings or appliances, a halt is called; when, alas, very rarely, the treasurer is all smiles, and plans for the extension of the hospital, or the installation of some new addition to the plant is contemplated, their knowledge as to the necessity, for instance, of a hydrotherapeutic or an x-ray plant, or a new operating-room is of the greatest possible value. Nothing but good, in my opinion, can come from such personal cooperation.

One of the difficult questions which boards of trustees have to face is whether there shall be a fixed age at which a college professor or a hospital physician or surgeon shall retire from the active duties of his post. I firmly believe that they should fix such a retiring age in the interest of the students and the patients. As age advances a man's opinions and his practice become "as petrified as his arteries." He is incapable of constant study, of adding to his knowledge or of keeping up with the feverish strides of medicine. He ought then to be relieved of his cares and his duties. If no rule exists he is allowed to continue his inefficient or even disastrous work, or by some harsh suggestion is compelled to give place to another more competent man. A rule is a condition accepted when he is appointed, and just as in the army and navy, when an officer reaches 64 or 62 years of age he is retired on reduced pay, and because it is a rule he does not feel hurt or humiliated; so in a college or a hospital, when time and the rule bring us to the period when we must gracefully retire, no one's reputation is injured or his feelings lacerated.

I have ascertained that the following rules are in force in some of the larger institutions:

At Harvard the age when a professor may request to be retired is 60, provided he has been in the service of the university for 20 years, with a reduced pay ranging from one-third to two-thirds of his salary. At 66 he may be retired by the President and Fellows partly or wholly. The details of the plan are admirably arranged.

At Chicago, while no plan is yet in force, largely, I presume, because of its recent establishment on the present basis, such a plan will soon be made operative.

At Columbia the retiring age, after 15 years of service, is 65, either at the request of the professor or upon motion of the trustees, and on half pay.

At Yale the retiring age is 65 after 25 years of service and on half pay, but the retirement is not compulsory. It will probably be made compulsory before long.

At Cornell the retiring age is 70, but the Pension Fund will not be available until 1914. The retiring pension will then be \$1,500.

At the University of Pennsylvania and at Johns Hopkins no retiring age is fixed.

The only hospitals I know of in which a retiring age is fixed are the Massachusetts General Hospital and the Boston City Hospital. At the former the compulsory retiring age of the surgeons is 63, and of the physicians 65. At the Boston City Hospital the visiting surgeons are retired at 65, but the physicians, gynecologists, and all the other medical officers continue in service indefinitely—a very curious anomaly.

These varying, but in the main identical provisions when any exist, show the trend of thought and practice. They generally apply to the medical department, except that in case a professor is engaged in the practice of his profession and so has a private income the provision for continuing a portion of his salary does not apply. This is right and fair. Of course, in all hospitals where there are no salaries, no provision as to reduced salary would obtain.

The point I wish to emphasize is, however, that the age limit (which in my opinion should be 65) should be compulsory and so not be invidious in any given case. It will be objected that not a few men are in full intellectual and physical vigor at 65, and it will be a detriment to the institution to lose their services when their ripe experience and admirable teaching are most desirable. I admit it. But for every one

such case of harm done by compelling a man to stop, there are a score of instances of men who are doing vast injury by their inefficiency. Moreover, in the very few cases in which it might be allowable, as boards of trustees make rules they can unmake them, and in special cases they could pay a graceful compliment and preserve to the institution their exceptional men by extending the limit to 70. In no case can I think it wise to go beyond this limit.

In some of the universities I have quoted a sabbatical year of rest or study is allowed a professor. He is put upon half pay and his place is filled by a temporary substitute, who receives the other half of his salary. I believe that in present conditions this should not be applied to medical faculties, for nearly all of the professors are in active practice and take sufficiently long summer holidays. These latter are often spent in observation and study abroad—a most useful and remunerative employment of a holiday—and serve the purpose of the sabbatical year for men whose entire time is given to their teaching. In hospitals it certainly should not apply.

One of the recurring questions in hospital and college management is whether there should be a certain number of doctors on the board. I know that there is a wide diversity of opinion upon this point. My own belief is that a small proportion of well chosen medical men is a distinct advantage in such boards of trustees. I have said a "small proportion," for it should not be, I think, larger than probably 20%; and I also said "well chosen;" that is, they should be men of large mental caliber and executive ability. It should be distinctly understood, if not indeed absolutely expressed, in institutions in large cities at least, that any physician or surgeon placed upon such a board should never be eligible, even by resignation from the board, for a position on the faculty or the medical staff. In small towns the lack of suitable persons for hospital trustees and members of the hospital staff might make it desirable not to institute such a rule.

Moreover, such medical men should be selected for trustees as by their mental training, social relations, and personal character would be, so far as it is possible for human nature to realize such a position, absolutely free from influences arising from personal jealousy or professional bias. If it were a social club it would be perfectly proper to vote against a man because he is personally distasteful, but where it is a scientific body responsible for the education of large numbers of young men and for the care of still larger numbers of hospital patients among the poor, even if a candidate were personally unfriendly I should vote for his election if he were the man best fitted for the place.

Turning now to the duties and responsibilities peculiar to trustees of hospitals, let me point out the objects of a hospital.

First, the care and the cure of the sick and injured; secondly, the education of medical men and medical students; and thirdly, the promotion of knowledge, which, in turn, will inure all over the world to the more speedy and certain cure of the sick and injured, and so be of the greatest benefit to humanity.

In order to accomplish these three purposes, it is necessary that the hospital shall have sufficient funds to purchase ground, erect buildings, and provide a thorough material equipment. It is a great pleasure to me, as to you also, to note that throughout the length and breadth of the land the medical and surgical staff never tax the always inadequate resources of hospitals for any remuneration. They serve without pay, they give ungrudgingly and freely day and night, to the poor often for many years, their time and skill, without ever a thought of any money reward. Their reward comes from increased knowledge and skill, and the daily blessing invoked of heaven, often lisped in children's prayers or breathed in mothers' benisons which pass not unheeded by the Recording Angel.

But, as I have pointed out elsewhere, instead of receiving any pay, they give to hospitals. The mere money value of this daily gift of the profession to the poor amounts to an enormous sum. The value of the professional services of the staff of the Jefferson Medical College Hospital, a single hospital in a single city, on a moderate basis of fees, I found was more than half a million dollars annually. The millions upon millions of money given in that most self-sacrificing form—personal service—by the entire profession all over the United

States, and I might add with still further pride, all over the world, is simply incalculable. The Gideon Grays and Weellum MacLures are not found only in Scotland or at the countryside. They are even more plentiful in the slums of our great cities giving of their time, their skill, and what is more, their hearts, their lives, themselves to the service of humanity.

Trustees sometimes seem to take it for granted that their duties are ended when they have done two things: begged or given and safely invested the necessary funds, and then elected the staff. To my mind their duties do not by any means end at this point. They should see to it that the resources of the hospital are utilized to the utmost in doing the largest good.

Let us see now how the objects of a hospital, as I have stated them, can be realized. The first object is the care and cure of the patients. But the cure of any individual patient is not the "be all and the end all" of a hospital. His cure must be a means of larger vision to the doctor, who will thus be better fitted to care for future similar cases. Even his death, if he cannot be cured, should minister to the increasing knowledge and skill of the doctor so that he may be able to snatch future victory from present defeat.

The second—the training of doctors and students—is frequently carried out, but sometimes even objected to. There are three classes of doctors who are trained by a hospital: first, the staff of the hospital itself. I have lived through the period of the establishment of hospitals in many of the smaller cities and towns, and in some cases even villages in this country, for it was a rare thing in my early professional life for any except the larger cities to have hospitals. The moment that a hospital is established with its medical and surgical staff, that moment a new era has dawned on the *community* in which the hospital is established. More careful methods are introduced, greater cleanliness is observed, hygienic conditions are bettered, laboratory methods are inevitably introduced in time. Even if the old timers who graduated years before our modern laboratory methods were adopted do not care for them or cannot use them, the young fellows who come fresh from our medical schools and serve as residents, and even the nurses graduated from our training-schools, finally shame the older ones into better ways and greater exactness, not only in the hospital, but in their private work as well.

As a consequence of the establishment of these hospitals and the added skill and training of the local physicians and surgeons the character of the consultations of the physicians and surgeons of our great medical centers has been greatly modified. The really simple cases, such as hydrocele and small tumors (and even large ones), clubfoot, harelip, etc., which used to be sent to city consultants, are now successfully operated on by the local surgeons and only the more difficult, serious, or complicated cases are sent to the cities. This is a great advantage to the patient, whose good is the first consideration, and to the local medical men; and though seemingly a serious loss to the city consultant, it is in the end an advantage, as he must prove his better metal in the higher scientific fields and be, as well as seem to be, the better man.

Moreover, the trustees of every hospital should see to it that a good library and laboratory are provided. Insensibly the staff will read more and more. A single restless progressive spirit, even though it be a young interne, calling attention to this case and to that, in one journal or another, will compel the rest of the staff to read in spite of themselves. It is absolutely clear that a laboratory with modern equipment for bacteriological, pathological, and chemical research in its examination of tumors, of the urine, the sputum, the feces, the blood, the pus, and other fluids from wounds, etc., is a necessity in every hospital. Even many of our smaller hospitals are equipped with microscope and reagents if not with a complete bacteriological outfit, which nowadays is inexpensive and imperative. All of this raises the intellectual and professional standard of the staff. I venture to say that no town of 20,000 people can afford to be without its hospital for the sake of its *own citizens*, utterly irrespective of the good it does to the poor who are treated in its wards. It must be established in the interest of the *well-to-do citizens* and their families so that they may secure better equipped doctors for themselves as well as for the patients in their hospital. Self-interest, therefore, will

compel every community to establish its hospital, even if charitable motives had no influence.

Again, the trustees of all hospitals of any size should establish a training-school for nurses. Only those who, like myself, have lived in the period before such training-schools were established, can appreciate the vast improvement effected in a hospital by this change. To replace the former ignorant, untrained attendants by "trained nurses whose jaunty caps and pretty uniforms and often winsome faces almost make one half wish to be sick, and when one is sick, half loath to be well," is not only a boon to the patients but to the doctors as well. The intelligent, well-trained nurse, who is on the alert to observe every important change of symptoms and who will keep accurate bedside notes, is the doctor's right hand. Not a few patients who would otherwise lose heart and hope are, one may say, lured back to health and happiness by the tactful attentions and restful but efficient care of such a nurse. The community of the well-to-do also are benefited, because the hospital provides them with skilled nurses in their homes when they are so unfortunate as to be compelled to remain there instead of going to the hospital.

The old repugnance to entering a hospital when sick or when an operation is demanded is rapidly fading away. The immense advantages of a good hospital over the most luxurious home are now acknowledged on all hands. The poorest patient in a hospital is better cared for, his case more carefully investigated by bacteriological, chemical, and clinical methods in a hospital than are the well-to-do in their own homes. Indeed, wise surgeons, except in cases of emergency, now very properly refuse to do operations in homes instead of in hospitals. In many instances lives that would be lost in homes are saved in hospitals, where the many and complex modern appliances for every surgical emergency are provided.

The hospitals in direct or indirect connection with medical schools, however, do a far larger work than merely the training of its own staff of doctors. They train three other classes of doctors: First, the undergraduates who are aspiring to the degree; secondly, graduate physicians who spend a certain amount of time in the hospitals either as internes or as temporary students refurbishing their professional knowledge; and thirdly, experts in certain branches of medicine and surgery.

The undergraduates are taught first in the general clinics, where to some extent they learn both by didactic instruction and by seeing the patients, hearing their histories, and witnessing the institution of proper treatment by prescription, by regimen, or if necessary, by surgical operation. This is of great value, particularly in the more important cases, and especially, for I speak now as a surgeon, in important operations. It is often objected that students see nothing in large clinics. To some extent this holds good; but no student can look on at an operation when the jugular vein or the lateral sinus is torn, the pleural cavity opened, the bowel lacerated, or other of the great emergencies of surgery occur and fail to be impressed by the coolness of the operator, the carefully explained methods adopted for remedying the mischief, and the various devices used by him to save life, all of which hereafter will be used when similar emergencies may occur.

Yet far more important than the public clinics are the smaller clinics held with classes of 10 to 20 men each, when under an experienced teacher the absolute work of the clinic is divided among the various students in turn, watching the pulse and the respiration, giving an anesthetic, assisting actively at operations, percussing the chest, palpating the abdomen, determining inequalities of the surface or the varying density of underlying organs. Here is the real forum in which our modern medical student acquires his skill. In many cases visits in the ward itself are made, and to a small group around the bedside the physician or surgeon will point out the phenomena to be recorded, the need for the examination of the blood, the results of bacteriological cultures, the facts discovered by the microscope, or the chemical reagent. By the Socratic method also he will reveal to the student the imperfection of his knowledge, call out—educate—his powers of observation, of reasoning; stimulate his thought, and give him an impetus which will last throughout life. Who that has "walked the hospitals" with a Skoda, a Trousseau, a Nélaton, a Da Costa, or a Mitchell can ever forget their teaching?

It is sometimes objected by those who are not familiar with the actual facts, and especially by trustees, that this method of actual bedside instruction does harm to the sick. I speak after an experience of nearly 40 years as a surgeon to a half dozen hospitals and can confidently say that I have never known a *single patient* injured or his chances of recovery lessened by such teaching. Of course, the physician or surgeon uses common sense. He would not allow a number of men to palpate the abdomen of a patient with peritonitis, or move an acutely inflamed joint, nor would the physician allow a patient with pneumonia to have the chest unduly exposed, or a typhoid fever patient disturbed if his condition was such that it would be inadvisable. But such cases are the exception. In fact, many of you are familiar with patients who have responded to repeated percussion by members of such a class by prompt recovery, attributed by the patient to the supposed medication of percussion. Moreover, it is by this actual practice only that the student acquires the necessary skill in the use of modern instruments of precision, such as the stethoscope, the laryngoscope, the esthesiometer, the sphygmomanometer, the various specula. Here he learns when to make blood counts, how to take histories, arrive at the actual facts by skilful cross-questioning, note the varying symptoms and physical signs of a case, determine the need for laboratory investigations, all under the guidance of skilled observers, who will point out his errors, encourage his queries, and stimulate his thought.

Moreover, trustees may overlook one important advantage of a teaching hospital. Who will be least slovenly and careless in his duties, he who prescribes in the solitude of the sick chamber, and operates with two or three assistants only, or he whose every movement is eagerly watched by hundreds of eyes, alert to detect every false step, the omission of an important clinical laboratory investigation, the neglect of the careful examination of the back as well as of the front of the chest, the failure to detect any important physical sign or symptom? Who will be most certain to keep up with the progress of medical science, he who works alone with no one to discover his ignorance; or he who is surrounded by a lot of bright young fellows who have read the last *Lancet*, or the newest *Annals of Surgery*, and can trip him up if he is not abreast of the times? I always feel at the Jefferson Hospital as if I were on the run with a pack of lively dogs at my heels. I cannot afford to have the youngsters familiar with operations, means of investigations or newer methods of treatment of which I am ignorant. I must perforce study, read, catalogue, and remember; or give place to others who will. Students are the best whip and spur I know.

Of the value of training graduates in postgraduate work I need scarcely speak to this audience at least. The doctor who graduated 5, 10, or 15 years ago comes to our great centers of medical education and renews his youth at the fountain of knowledge. He learns the use of all the new instruments, sees new methods of operation, new methods of treatment, new means of diagnosis, and goes home an enormously better equipped man.

The trustees should see that the staff does not become fossilized by following the same ancient local methods from year to year, but should encourage them to visit other hospitals, see other men operate, hear other men discourse on the latest methods of investigation, and then import into their own hospitals all the good found elsewhere. I learn a deal by such frequent visits to the clinics of my brother surgeons, and if one who has grown gray in the service can thus learn, surely the younger men can do so. When we are too old to learn we are too old to remain on a hospital staff.

I do not know anything which has more impressed upon me the enormously rapid progress which surgery is making than a recent experience. I was absent from this country for almost a year and a half. In that time circumstances were such that I saw almost no medical journals and but few doctors. I have been home now eight months and even with incessant work I have not yet caught up, so rapid has been the progress of surgery in this short time. Had I been absent for five years verily I should have been a "back number," and never could have caught up at all.

In his very excellent Presidential address before the Asso-

ciation of American Physicians in 1901, Professor Welch made a plea for hospitals to afford "the requisite opportunities to young men who aim at the higher careers in clinical medicine and surgery." He called attention to the fact that in our bacteriological, pathological, and anatomical laboratories the opportunities, though still too few, were reasonably good, and in a few places exceptionally good, for the training of young men for positions as teachers of anatomy, pathology, and bacteriology. Any young man in these departments who by good hard work makes for himself a name is fairly sure, before long, of being called to some important post as a professor, director of a laboratory, or some similar position. But the opportunities for work in clinical medicine and clinical surgery are far more restricted, since opportunities for both the exercise of their clinical skill are less frequently open to them and the opportunities of combined physiological, pathological, bacteriological and anatomical research along with their clinical work is but scantily provided for. This plea is reinforced by the recent paper of Sir Michael Foster (*Nineteenth Century*, January, 1901, p. 57). These special graduates, bright young men, determined to devote themselves to one or another department of medicine or surgery, are the men who bring honor to the school at which they obtain their training, and are invaluable to the community. They are the future Jenners, Pasteurs, Virchows, Listers, DaCostas and Grosses, and our hospitals should provide for these exceptional men exceptional facilities.

The third object of a hospital is the promotion of knowledge, and so, fourthly, the good of humanity. Physicians and surgeons engaged only in private practice do not generally keep notes of their cases, and rarely publish important contributions to knowledge. I find in 100 books taken consecutively in my library that 85 were written by hospital men and only 15 by authors not connected with any hospital so far as was indicated on the title page.

In order that proper investigations may go on, trustees should enforce a permanent record of all the cases treated in the hospital, properly indexed, from which the staff may derive their data for papers and books. Each large hospital should have its pathological resident as well as the clinical residents in the various wards, so that postmortem records shall be well kept, pathological, bacteriological and chemical investigations of the various secretions, or blood counts, etc., shall be properly made and permanently recorded in such a manner as to be accessible.

It is too often the case that trustees, as I have said, regard their duties and responsibilities at an end when they have taken care of the funds and elected the staff. They may say that after all this is their real duty, and that all that I have advocated is medical and surgical, and the responsibility for it should devolve on the staff and not on the trustees. I do not take so narrow a view of the duties of trustees. When they have elected a physician or surgeon, if he neglects his duty, it is their business to displace him and fill his place with another man who will attend to his duty, and the duties that I have indicated pertaining to the increase of knowledge as well as of its diffusion are quite as much within their province as it is to see that the funds are invested to the best advantage. The intellectual funds as well as the invested funds must bring in good dividends.

If trustees and staff work together for such a purpose and in such a manner, they will create an ideal hospital which will do more good to the patients than any other type of hospital. It will attract the best physicians and surgeons in every community, will acquire the best reputation, not only local, but it well may be national, and do the most for the good of science and the benefit of humanity.

It may be said that this is an unduly strenuous view of the duties of trustees, that in our father's day and in our own earlier lives no such conditions existed or were contemplated. "I need hardly ask a body like this," said President Roosevelt in addressing the Methodists assembled in council, "to remember that the greatness of the fathers becomes to the children a shameful thing if they use it only as an excuse for inaction instead of as a spur to effort for noble aims. . . . The instruments with which, and the surroundings in which we work have changed immeasurably from what they were in the

days when the rough backwoods preachers ministered to the moral and spiritual needs of their rough backwoods congregations. But if we are to succeed, the spirit in which we do our work must be the same as the spirit in which they did theirs."

Moreover, we must remember that "the world-field into which all nations are coming in free competition by the historical movement to which all narrower policies must sooner or later yield, will be commanded by those races which, in addition to native energy and sagacity, bring the resources of scientific investigation and of thorough education." The international race for the leadership of the world is just as strenuous and intense in medicine as it is in commerce. If we are going to join the race and win the prize there must be the highest development of American education at the top. The best men must be pushed to the front, and ample opportunities for growth, for investigation and for original research must be provided. Never has there been so large an opportunity for the man of large ideas, complete education and indomitable energy and purpose as there is today. The world is waiting, looking, longing for him, and will cry "Make room" for him when he is found.

In the hands of the trustees of our colleges and hospitals are the money and the opportunity for developing such men. If the right spirit pervades both trustees and medical faculties and hospital staffs, then it will be but a short time before America will lead the world in medicine as well as she now does in commerce.

Will the profession rise to the level of their great opportunity? Yea, verily they will! Never yet have they been wanting when the emergency arose; not only the emergency of labor, but also the emergency of danger.

In Russia the common soldier counts for little. Yet in Vladikavkaz (where the Dariel Pass—the old *Portæ Caspiæ* of Herodotus—leading from the Caucasus joins the railroad from Baku on the Caspian to Moscow) is a monument to a common soldier. At the last battle in which the Russians won the victory over Schamyl which gave them undisputed sway over the Caucasus, this soldier blew up a mine and won the day at the cost of his own life. It was ordered that his name should never be erased from the list of his company. At every roll-call when his name is reached, the solemn answer is given, "Died in the service of his country."

In our hospitals lurk the deadly breath of diphtheria, the fatal virus of bubonic plague, of cholera, of yellow fever, of typhus fever, and the ever present danger of blood poisoning. I have known of brother physicians who have died victims to each one of these scourges. Yet who has ever known one of our guild to shrink when danger smote him on the right hand and the left and death barred the way? As brave as the Russian soldier, ready to risk life, and, if need be, to lose it, these martyrs to duty shall never have their names stricken off the honor list, and at the last roll-call the solemn reply shall be, "Died in the service of humanity."

PRINCIPLES OF MEDICAL ETHICS OF THE AMERICAN MEDICAL ASSOCIATION.

The American Medical Association promulgates, as a suggestion and advisory document, the following:

Chapter I.—The Duties of Physicians to Their Patients.

SECTION 1.—Physicians should not only be ever ready to obey the calls of the sick and injured, but should be mindful of the high character of their mission and of the responsibilities they must incur in the discharge of momentous duties. In their ministrations they should never forget that the comfort, the health, and the lives of those entrusted to their care depend on skill, attention, and fidelity. In deportment they should unite tenderness, cheerfulness, and firmness, and thus inspire all sufferers with gratitude, respect, and confidence. These observances are the more sacred because, generally, the only tribunal to adjudge penalties for unkindness, carelessness or neglect is their own conscience.

SEC. 2.—Every patient committed to the charge of a physician should be treated with attention and humanity, and reasonable indulgence should be granted to the caprices of the sick.

Secrecy and delicacy should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted in their professional visits should be guarded with the most scrupulous fidelity and honor.

SEC. 3.—The obligation of secrecy extends beyond the period of professional services; none of the privacies of individual or domestic life, no infirmity of disposition or flaw of character observed during medical attendance should ever be divulged by physicians, except when imperatively required by the laws of the State. The force of the obligation of secrecy is so great that physicians have been protected in its observance by courts of justice.

SEC. 4.—Frequent visits to the sick are often requisite, since they enable the physician to arrive at a more perfect knowledge of the disease and to meet promptly every change which may occur. Unnecessary visits are to be avoided, as they give undue anxiety to the patient; but to secure the patient against irritating suspense and disappointment the regular and periodical visits of the physician should be made as nearly as possible at the hour when they may be reasonably expected by the patient.

SEC. 5.—Ordinarily, the physician should not be forward to make gloomy prognostications, but should not fail on proper occasions to give timely notice of dangerous manifestations to the friends of the patient, and even to the patient if absolutely necessary. This notice, however, is at times so peculiarly alarming when given by the physician that its deliverance may often be preferably assigned to another person of good judgment.

SEC. 6.—The physician should be a minister of hope and comfort to the sick, since life may be lengthened or shortened not only by the acts, but by the words or manner of the physician, whose solemn duty is to avoid all utterances and actions having a tendency to discourage and depress the patient.

SEC. 7.—The medical attendant ought not to abandon a patient because deemed incurable, for continued attention may be highly useful to the sufferer and comforting to the relatives, even in the last period of the fatal malady by alleviating pain and by soothing mental anguish.

SEC. 8.—The opportunity which a physician has of promoting and strengthening the good resolutions of patients suffering under the consequences of evil conduct ought never to be neglected. Good counsels, or even remonstrances, will give satisfaction, not offense, if they be tactfully proffered and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

Chapter II.—The Duties of Physicians to Each Other and to the Profession at Large.

ARTICLE I.—DUTIES FOR THE SUPPORT OF PROFESSIONAL CHARACTER.

SECTION 1.—Every one on entering the profession, and thereby becoming entitled to full professional fellowship, incur an obligation to uphold its dignity and honor, to exalt its standing and to extend the bounds of its usefulness. It is inconsistent with the principles of medical science, and it is incompatible with honorable standing in the profession for physicians to designate their practice as based upon an exclusive dogma or a sectarian system of medicine.

SEC. 2.—The physician should observe strictly such laws as are instituted for the government of the members of the profession; should honor the fraternity as a body; should endeavor to promote the science and art of medicine and should entertain a due respect for those seniors who by their labors have contributed to its advancement.

SEC. 3.—Every physician should identify himself with the organized body of his profession as represented in the community in which he resides. The organization of local or county medical societies where they do not exist should be effected so far as practicable. Such county societies constituting, as they do, the chief element of strength in the organization of the profession, should have the active support of their members, and should be made instruments for the cultivation of fellowship, for the exchange of professional experience, for the advancement of medical knowledge, for the maintenance of ethical standards, and for the promotion in general of the interests of the profession and the welfare of the public.

SEC. 4.—All county medical societies thus organized ought to place themselves in affiliation with their respective State associations, and these in turn with the American Medical Association.

SEC. 5.—There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical; and to attain such eminence is a duty every physician owes alike to the profession and to patients. It is due to the patients, as without it their respect and confidence cannot be commanded; and to the profession because no scientific attainments can compensate for the want of correct moral principles.

SEC. 6.—It is incumbent on physicians to be temperate in all things, for the practice of medicine requires the unremitting exercise of a clear and vigorous understanding; and in emergencies—for which no physician should be unprepared—a steady hand, an acute eye, and an unclouded mind are essential to the welfare, and even to the life, of a human being.

SEC. 7.—It is incompatible with honorable standing in the profession to resort to public advertisements or private cards inviting the attention of persons affected with particular diseases; to promise radical cures; to publish cases or operations in the daily prints, or to suffer such publications to be made; to invite laymen (other than relatives who may desire to be at hand) to be present at operations; to boast of cures and remedies; to adduce certificates of skill and success, or to employ any of the other methods of charlatans.

SEC. 8.—It is equally derogatory to professional character for physicians to hold patents for any surgical instruments or medicines; to accept rebates on prescriptions or surgical appliances; to assist unqualified persons to evade legal restrictions governing the practice of medicine; to dispense or promote the use of secret medicines, for if such nostrums are of real efficacy any concealment regarding them is inconsistent with beneficence and professional liberality, and if mystery alone give them public notoriety, such craft implies either disgraceful ignorance or fraudulent avarice. It is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines, or other substances used therapeutically.

ARTICLE II.—PROFESSIONAL SERVICES OF PHYSICIANS TO EACH OTHER.

SECTION 1.—Physicians should not, as a general rule, undertake the treatment of themselves, nor of members of their family. In such circumstances they are peculiarly dependent on each other; therefore, kind offices and professional aid should always be cheerfully and gratuitously afforded. These visits ought not, however, to be obtrusively made, as they may give rise to embarrassment or interfere with that free choice on which such confidence depends.

SEC. 2.—All practising physicians and their immediate family dependents are entitled to the gratuitous services of any one or more of the physicians residing near them.

SEC. 3.—When a physician is summoned, from a distance, to the bedside of a colleague in easy financial circumstances, a compensation proportionate to traveling expenses and to the pecuniary loss entailed by absence from the accustomed field of professional labor should be made by the patient or relatives.

SEC. 4.—When more than one physician is attending another, one of the number should take charge of the case, otherwise the concert of thought and action so essential to wise treatment cannot be assured.

SEC. 5.—The affairs of life, the pursuit of health and the various accidents and contingencies to which a physician is peculiarly exposed sometimes require the temporary withdrawal of this physician from daily professional labor and the appointment of a colleague to act for a specified time. The colleague's compliance is an act of courtesy which should always be performed with the utmost consideration for the interest and character of the family physician.

ARTICLE III.—THE DUTIES OF PHYSICIANS IN REGARD TO CONSULTATIONS.

SECTION 1.—The broadest dictates of humanity should be obeyed by physicians whenever and wherever their services are needed to meet the emergencies of disease or accident.

SEC. 2.—Consultations should be promoted in difficult cases, as they contribute to confidence and more enlarged views of practice.

SEC. 3.—The utmost punctuality should be observed in the visits of physicians when they are to hold consultations, and this is generally practicable, for society has been so considerate as to allow the plea of a professional engagement to take precedence over all others.

SEC. 4.—As professional engagements may sometimes cause delay in attendance the physician who first arrives should wait for a reasonable time, after which the consultation should be considered as postponed to a new appointment.

SEC. 5.—In consultations no insincerity, rivalry, or envy should be indulged; candor, probity and all due respect should be observed toward the physician in charge of the case.

SEC. 6.—No statement or discussion of the case should take place before the patient or friends, except in the presence of all the physicians attending, or by their common consent; and no opinions or prognostications should be delivered which are not the result of previous deliberation and concurrence.

SEC. 7.—No decision should restrain the attending physician from making such subsequent variations in the mode of treatment as any unexpected change in the character of the case may demand. But at the next consultation reasons for the variations should be stated. The same privilege, with its obligation, belongs to the consultant when sent for in an emergency during the absence of the family physician.

SEC. 8.—The attending physician, at any time, may prescribe for the patient; not so the consultant, when alone, except in a case of emergency or when called from a considerable distance. In the first instance the consultant should do what is needed, and in the second should do no more than make an examination of the patient and leave a written opinion, under seal, to be delivered to the attending physician.

SEC. 9.—All discussions in consultation should be held as confidential. Neither by words nor by manner should any of the participants in a consultation assert or intimate that any part of the treatment pursued did not receive his assent.

SEC. 10.—It may happen that two physicians cannot agree in their views of the nature of a case and of the treatment to be pursued. In the event of such disagreement, a third physician should, if practicable, be called in. None but the rarest and most exceptional circumstances would justify the consultant in taking charge of the case. He should not do so merely upon the solicitation of the patient or friends.

SEC. 11.—A physician who is called in consultation should observe the most honorable and scrupulous regard for the character and standing of the attending physician, whose conduct of the case should be justified so far as can be, consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in the attending physician.

ARTICLE IV.—DUTIES OF PHYSICIANS IN CASES OF INTERFERENCE.

SECTION 1.—Medicine being a liberal profession, those admitted to its ranks should found their expectations of practice especially on the character and the extent of their medical education.

SEC. 2.—The physician, in his intercourse with a patient, under the care of another physician, should observe the strictest caution and reserve; should give no disingenuous hints relative to the nature and treatment of the patient's disorder, nor should the course of conduct of the physician directly or indirectly tend to diminish the trust reposed in the attending physician.

SEC. 3.—The same circumspection should be observed when, from motives of business or friendship, a physician is prompted to visit a person who is under the direction of another physician. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made, no inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

SEC. 4.—A physician ought not to take charge of, or prescribe for, a patient who has recently been under the care of another physician, in the same illness, except in case of a sud-

den emergency, or in consultation with the physician previously in attendance, or when that physician has relinquished the case or has been dismissed in due form.

SEC. 5.—The physician acting in conformity with the preceding section should not make damaging insinuations regarding the practice previously adopted, and indeed should justify it if consistent with truth and probity; for it often happens that patients become dissatisfied when they are not immediately relieved, and as many diseases are naturally protracted, the seeming want of success in the first stage of treatment affords no evidence of a lack of professional knowledge or skill.

SEC. 6.—When a physician is called to an urgent case, because the family attendant is not at hand, unless assistance in consultation is desired the former should resign the care of the patient immediately on the arrival of the family physician.

SEC. 7.—It often happens, in cases of sudden illness, and of accidents and injuries, owing to the alarm and anxiety of friends, that several physicians are simultaneously summoned. Under these circumstances, courtesy should assign the patient to the first who arrives and who, if necessary, may invoke the aid of some of those present. In such a case, however, the acting physician should request that the family physician be called, and should withdraw unless requested to continue in attendance.

SEC. 8.—Whenever a physician is called to the patient of another physician during the enforced absence of that physician, the case should be relinquished on the return of the other.

SEC. 9.—A physician, while visiting a sick person in the country, may be asked to see another physician's patient because of a sudden aggravation of the disease. On such an occasion the immediate needs of the patient should be attended to and the case relinquished on the arrival of the attending physician.

SEC. 10.—When a physician who has been engaged to attend an obstetric case is absent and another is sent for, delivery being accomplished during the vicarious attendance, the acting physician is entitled to the professional fee, but must resign the case on the arrival of the physician first engaged.

ARTICLE V.—DIFFERENCES BETWEEN PHYSICIANS.

SECTION 1.—Diversity of opinion and opposition of interest may, in the medical as in other professions, sometimes occasion controversy and even contention. Whenever such unfortunate cases occur and can not be immediately adjusted, they should be referred to the arbitration of a sufficient number of impartial physicians.

SEC. 2.—A peculiar reserve must be maintained by physicians toward the public in regard to some professional questions, and as there exist many points in medical ethics and etiquette through which the feelings of physicians may be painfully assailed in their intercourse, and which can not be understood or appreciated by general society, neither the subject-matter of their differences nor the adjudication of the arbitrators should be made public.

ARTICLE VI.—COMPENSATION.

SECTION 1.—By the members of no profession are eleemosynary services more freely dispensed than by the medical, but justice requires that some limits should be placed to their performance. Poverty, mutual professional obligations, and certain of the public duties named in Sections 1 and 2 of Chapter III, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by the rich, or by societies for mutual benefit, for life insurance or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege.

SEC. 2.—It can not be justly expected of physicians to furnish certificates of inability to serve on juries, or to perform militia duty; or to testify to the state of health of persons wishing to insure their lives, obtain pensions or the like, without a pecuniary acknowledgment. But to persons in indigent circumstances such services should always be cheerfully and freely accorded.

SEC. 3.—Some general rules should be adopted by the physicians in every town or district relative to the minimum pecuniary acknowledgment from their patients; and it should be

deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

SEC. 4.—It is derogatory to professional character for physicians to pay or offer to pay commissions to any person whatsoever who may recommend to them patients requiring general or special treatment or surgical operations. It is equally derogatory to professional character for physicians to solicit or to receive such commissions.

Chapter III.—The Duties of the Profession to the Public.

SECTION 1.—As good citizens it is the duty of physicians to be very vigilant for the welfare of the community, and to bear their part in sustaining its laws, institutions and burdens; especially should they be ready to cooperate with the proper authorities in the administration and the observance of sanitary laws and regulations, and they should also be ever ready to give counsel to the public in relation to subjects especially appertaining to their profession, as on questions of sanitary policy, public hygiene and legal medicine.

SEC. 2.—It is the province of physicians to enlighten the public in regard to quarantine regulations; to the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions; in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails it is their duty to face the danger, and to continue their labors for the alleviation of the suffering people, even at the risk of their own lives.

SEC. 3.—Physicians, when called on by legally constituted authorities, should always be ready to enlighten inquests and courts of justice on subjects strictly medical, such as involve questions relating to sanity, legitimacy, murder by poison or other violent means, and various other subjects embraced in the science of medical jurisprudence. It is but just, however, for them to expect due compensation for their services.

SEC. 4.—It is the duty of physicians, who are frequent witnesses of the great wrongs committed by charlatans, and of the injury to health and even destruction of life caused by the use of their treatment, to enlighten the public on these subjects, and to make known the injuries sustained by the unwary from the devices and pretensions of artful impostors.

SEC. 5.—It is the duty of physicians to recognize and by legitimate patronage to promote the profession of pharmacy, upon the skill and efficiency of which depends the reliability of remedies, but any pharmacist, who, although educated in his own profession, is not a qualified physician, and who assumes to prescribe for the sick, ought not to receive such countenance and support. Any druggist or pharmacist who dispenses deteriorated or sophisticated drugs or who substitutes one remedy for another designated in a prescription, ought thereby to forfeit the recognition and influence of physicians.

Pure Water for Buffalo.—The New York Legislature has passed a bill granting to the city of Buffalo the privilege of issuing bonds to the value of \$500,000 for the purpose of improving the water-supply.

Site Chosen for Tuberculosis Camp.—President Lederle, of the New York City Board of Health, has announced that he will establish the tuberculosis camp on North Brother's Island. Efforts to make a selection from other localities have met violent opposition from those living in the neighborhood. An examination of the atmospheric conditions of North Brother's Island has shown that it is suitable for such a camp.

Uniform Disinfection.—A uniform plan of disinfection has been established by the State Boards of Health of Louisiana and Texas governing quarantine matters in New Orleans and Galveston. The resolutions were adopted at a meeting of the boards recently and read: "The Galveston regulations governing disinfection at Havana and other Cuban ports are hereby reconsidered and rescinded and the following substituted: 'Pyrethrum powder shall be burned in the living quarters at Havana immediately before the departure of the vessel. Baggage of passengers shall be sealed and signed in Havana by joint medical inspectors, and each passenger to have a certificate signed by the inspectors. Certificate to show temperature at time of inspection, hour to be noted. Thorough disinfection of living quarters, baggage (and holds when no perishable cargo) upon arrival at quarantine station. Noninfected vessels from Cuban ports other than Havana (so long as reported free of yellow fever) shall be given pratique after thorough disinfection at quarantine station.'"

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

[May 9, 1903. Vol. XL, No. 19.]

1. Medical Education in the United States. FRANK BILLINGS.
2. Cancer and Immunity. A. F. JONAS.
3. Social Conditions in America in Their Relation to Medical Progress and Disease. J. M. ANDERS.
4. Diagnostic Value of Blood-pressure Determinations in the Diagnosis of Typhoid Perforation. GEORGE W. CRILE.

1, 2, 3.—See *American Medicine*, Vol. V, No. 19.

4.—**Blood-pressure in Typhoid Perforation.**—G. W. Crile reports five cases in which there was a marked rise after perforation, these cases assuming the level attending peritonitis from other causes. The highest point reached was 208 mm. [H.M.]

Boston Medical and Surgical Journal.

[May 7, 1903. [Vol. CXLVIII, No. 19.]

1. Brachial Paralysis; Post-narcotic. F. J. COTTON and S. W. ALLEN.
2. Pyronin-methyl Green: A Brilliant Double Stain for Cells and Bacteria. WILLIAM F. WHITNEY.
3. X-light in Anthropometrical Signalment. WILLIAM ROLLINS.

1.—**Post-anesthetic Brachial Paralysis.**—F. J. Cotton and S. W. Allen report four cases which have come under their observation. All were typical cases of post-anesthetic paralysis. The writers believe such cases to be much more frequent than the scanty literature would suggest. They were able to find but 30 cases reported. The type they would define is that in which paralysis of a part or the whole of the brachial plexus has evidently resulted during anesthesia. They excluded those cases in which the paralysis is of central or referred origin, or those due to direct pressure on the peripheral nerve-trunks, from pressure of the body on the arm in lateral postures, from pressure of the edge of a table on the musculospinal nerve, from the pressure of leg-holders or the edge of a Trendelenburg table on the perifeal nerves, or from too efficient application of a tourniquet. They emphasize the following points: Paralysis of part or all the muscles supplied by the brachial plexus with some sensory involvement is not very uncommon after narcosis, though rarely mentioned. Its cause is not toxic but mechanic. It occurs only when the arms are long held above the head or lie in abduction—never if they lie flexed on the chest. The mechanism is a pressure on the nerve-roots, probably between the clavicle and the muscles over the transverse processes of the cervical vertebrae, or from stretching over the head of the humerus in abduction. The trouble is essentially functional without known lesions. The lost function returns in part very early. Total recovery is often long delayed, but apparently is to be counted on. The possibility of the accident should be impressed on students, on house officers, and on all of us. [A.B.C.]

2.—**Pyronin-methyl Green.**—W. F. Whitney emphasizes the great general utility of this stain, which was first brought forward by Pappenheim. One percent solutions of pyronin and methyl green in distilled water are made separately and mixed, four parts of the former to one of the latter. This stains nuclei bluish green, the bodies of the neutrophile leukocytes are unstained, while those of the lymphocytes, mast cells, endothelial and epithelial cells have varying shades of purple by which they can be distinguished from each other. Bacteria contrast with these by their brilliant red. He describes also methods of bringing out the red corpuscles, of examining fresh cells and frozen sections. [H.M.]

3.—**X-light in Anthropometric Signalment.**—W. Rollins believes the time will come when law will require every adult to be signalized. Value attaches only to accuracy, and x-light photographs of the bones double the accuracy with which measurements can be taken and make more measurements possible, thus allowing at least four times as many persons to be identified as at present. The writer alludes to an apparatus for the work which he designed and has described elsewhere. [H.M.]

Medical Record.

[May 9, 1903. [Vol. 63, No. 19.]

1. Medical Education in the United States. FRANK BILLINGS.
2. Social Conditions in America in Their Relation to Medical Progress and Disease. J. M. ANDERS.
3. Cancer and Immunity. A. F. JONAS.

1, 2, 3.—See *American Medicine*, Vol. V, No. 19.

New York Medical Journal.

[May 2, 1903. [Vol. LXXVII, No. 18.]

1. The Tendo-Achillis Shortened for the Restoration of the Function of the Calf: Lost as the Result of a Previous Tenotomy. RUSSELL A. HIBBS.
2. A Case of Nevus of the Scalp and Nose Treated by Hot Water Injections. FREDERIC GRIFFITH.
3. The Treatment of Gastric and Duodenal Hemorrhages. MAX EINHORN.
4. The Uses of Suprarenal Extract in Nose and Throat Diseases. BEAMAN DOUGLASS.
5. The Operative Treatment of Stenosis of the Larynx Following Intubation and Tracheotomy: Report and Exhibition of Cases. ARTHUR B. DUEL.
6. An Anastomosis Ring. WILLIAM L. KELLER.
7. Suprascrotal Operation for Varicocele, with Ligature of the Spermatic Artery. E. STYLES POTTER.

1.—**Shortening of the Tendo-Achillis.**—R. A. Hibbs reports three cases in which the tendo-Achillis was shortened for the restoration of the function of the calf, lost as a result of a previous tenotomy. In the first case the action of the calf group of muscles has been so remarkably restored that it can be safely expected eventually to perform practically its normal function. In the second case the action of the calf has been restored to some extent. In the third case there has been no appreciable improvement. In these three cases the structure filling in the gap between the ends of the old tendon had elongated, and was dissimilar to the normal tendon in every important particular, especially in not being nonstretchable. The author says that the facts revealed by the operation for shortening the tendon in these cases may be considered unmistakable evidence that the subcutaneous division of the tendo-Achillis is not always so successful as it has long been considered to be; that while in some cases the healing process seems to reproduce a structure sufficiently strong to perform the function of tendon, in others exactly similar it does not do so. He believes that the conditions necessary in order that the healing process may be entirely satisfactory are: 1. The preservation of the sheath. 2. The preservation of the continuity of the tendon. [C.A.O.]

2.—**Hot Water Injections for Nevus.**—Frederic Griffith reports a case of nevus of the scalp and nose in a child of 7 months, successfully treated by hot water injections. From 10 to 60 drops at a temperature of from 180° F. to 200° F. was injected at intervals of three or four days. Further growth ceased after the first injection, and shrinkage, with flattening of the surface of the mark to the level of the surrounding skin took place. [C.A.O.]

3.—**Gastric and Duodenal Hemorrhages.**—Absolute rest in bed, total abstinence from food and drink, and the administration of opiates (subcutaneously or per rectum), will serve to lessen the peristalsis of the stomach and small intestine and favor the healing process. During the first three to five days following the hemorrhage rectal alimentation must be the only mode of nourishing the patient. Saline solution will supplement the amount of fluid required. An ice-bag over the upper part of the abdomen is of service and ergot is a useful remedy. Gelatin may be employed per os, or subcutaneously. In the latter instance a 2% gelatin solution may be used, injecting about 100 cc. at a time, preferably in the gluteal region. Max Einhorn prefers this method in order to avoid gastric peristalsis. In giving gelatin by the mouth, simple calf's foot jelly may be administered. Adrenalin has been used by some authors with good results. The author also reports some experiments on rabbits to show the value of adrenalin in checking hemorrhage. [C.A.O.]

4.—**Suprarenal Extract.**—Beaman Douglass gives a review of the uses of suprarenal extract in nose and throat diseases. It is of inestimable value in reducing hemorrhage during nasal operations. The nose should be packed after the operation to guard against hemorrhage. In acute catarrhal con-

ditions of the respiratory tract, when there is much congestion, soreness and the general accompanying symptoms of this condition, suprarenal gland is of great use. Here it should be used not only locally, but also internally, either alone or in combination with other remedies, for the purpose of combating constitutional symptoms. It may be given with phenacetin, Dover's powder, quinin, and aconite, and should be taken each hour until the effect is produced, after which every two or three hours will maintain the condition which has been established. Used in this way it is valuable in the treatment of acute catarrhal laryngitis, hay-fever, hay-asthma, coryza, conditions of relaxation of the erectile tissue of the turbinates, chronic nasal congestion, and in some cases it seems to modify the quantity and quality of nasal discharge. Considerable diminution in the size of newgrowths may be obtained by the use of suprarenal locally or by injection into the tumor. The author prefers to use the simple dried suprarenal gland of the pig. The most convenient solution is made by adding 30 grams of dried suprarenal gland to 1 ounce of water that has just been freshly boiled and allowed to cool until it is just warm. It may then be filtered. The most reliable preparation of suprarenal gland is adrenalin chlorid. To each half ounce of a 4% solution of cocain about 20 minims of solution of adrenalin chlorid 1-1,000 are added. For septal work a 7% cocain solution is used, and the suprarenal strength doubled. [C.A.O.]

5.—**Stenosis of the Larynx.**—A. B. Duell discusses the operative treatment of stenosis of the larynx following intubation and tracheotomy, and reports three cases. He finds that about 1% of all patients intubated for acute laryngeal stenosis will "retain" the tube. The cause of the retention is due, in the majority of cases, to chronic inflammation of the intralaryngeal mucous membrane and hypertrophy of the subglottic tissues, and is not, as has been generally supposed, the result of granulation, ulceration, or cicatricial bands. Autoextubation in these cases is the rule, and adds greatly to the danger when an experienced intubator is not at hand. As a result of this a large number of such patients are tracheotomized for safety. When high tracheotomies are done cicatricial bands are almost certain to form in the trachea or lower part of the larynx above the tracheotomy wounds. The points in treatment emphasized are: (1) The largest sized tube possible should be inserted, under an anesthetic. In case of contraction rapid dilation should be done by beginning with the small sizes and working up to the large special tube, which is to be left in place. This special tube should be as large as can be inserted, and the constriction below the neck only $\frac{1}{32}$ inch smaller than the retaining swell; (2) this tube should be left in, undisturbed, for six weeks at least. It should then be removed, and if a cure has not been accomplished it should be replaced for six weeks longer. [C.A.O.]

6.—**An anastomosis ring** is described and graphically presented by W. L. Keller. It is made of aluminum and is divided into three segments and grooved externally to accommodate the ends of the divided intestine. In this groove is placed a spring which holds the serous coats of the intestinal ends in apposition. The three segments are held together by catgut sutures, which, after intestinal union has taken place, absorb or disintegrate, allowing the ring to fall apart. As the segments become free from the bowel by pressure necrosis and sloughing they pass out in the intestinal stream. Almost the normal lumen of the bowel is maintained when the ring is in position. [C.A.O.]

7.—**Suprascrotal Operation for Varicocele.**—In the operation described by E. S. Potter the incision begins at the external abdominal ring and proceeds downward for about $1\frac{1}{2}$ inches, directly over the course of the cord, ending just above the scrotal tissue. The tissues are divided down to the cord, then the cord, the vas, artery, nerves, and pampiniform plexus are drawn through the incision, and the vas and nerve separated, the veins, artery, and connective tissue ligated above and below, and the intervening portion removed. The ligatures are left long, then a ligature is passed through the stumps and tied, which brings the two stumps in perfect apposition. Then the remaining long ends of the ligatures are tied, which brings the point of contact in perfect end-to-end apposition and acts as a natural suspensory for the previously dragging testis.

The cord is then returned and the external wound closed. Excellent results are claimed for this operation. Three cases are reported. [C.A.O.]

Medical News.

May 9, 1903. [Vol. 82, No. 19.]

1. On the Resemblances of Malignant Endocarditis to Typhoid and Paratyphoid Infections. HENRY L. ELSNER.
2. Nephrorrhaphy in Intermittent Hydronephrosis. J. WESLEY BOVÉE.
3. Extraperitoneal Ligation of External Iliac for Femoral Aneurysm. WILLIAM B. CRAWFORD.
4. Intussusception: Report of a Case Reduced by Operation. GEORGE TULLY VAUGHAN.

1.—**Resemblances of Malignant Endocarditis to Typhoid and Paratyphoid Infections.**—H. L. Elsner finds that the typhoid type of infectious malignant endocarditis has rarely been diagnosticated during life, and that the detection of the focus from which infection sprang presents great difficulties. Infection is probably secondary, the organism not always the same, and can be determined only by painstaking bacteriologic study of the blood. Because paracolon infections are associated with typhoid symptoms, together with absence of the Widal reaction, the resemblances between them and malignant endocarditis offer many obstacles to positive early differentiation. The latter is almost always fatal. Endocarditis is rare as a complication of typhoid fever, and with evidences of the former we may assume the case is not typhoid. In the presence of murmurs with infection, petechiæ, disturbed circulation, infarcts, leukocytosis and negative Widal reaction, we may strongly suspect malignant endocarditis. For positive diagnosis we must have physical signs referable to the heart, and these generally appear before death, although the endocardium may be plastered with vegetations without giving rise to any symptoms. Transitory or even lasting paralyses in the midst of acute general infections are exceptional save in those diseases associated with embolic detachment and consecutive tissue change. Typhoid may be excluded if there are repeated chills; also if with a chill there are leukocytosis and symptoms of infection. In primary typhoid we may be sure of secondary infection if chills persist. Malignant endocarditis has less morning remission of temperature, the pulse is more rapid and softer, and is more likely to become irregular than in typhoid. [H.M.]

2.—**Nephrorrhaphy for Intermittent Hydronephrosis.**—J. W. Bovée, after a general review of the literature on the subject and a discussion of the causes of hydronephrosis, states that in the way of treatment nothing can be more rational than the employment of some means to prevent renal displacement. Various bandages have been used for this purpose, with but little success. Nephrorrhaphy is the remedy which should be employed in nearly all cases. In many cases this affords permanent relief. Two cases are reported: One was a widow of 46 who had suffered at various intervals for the past nine years with attacks of intense pain in the right side, lasting for a number of hours, and showing every evidence of hydronephrosis. Examination revealed the right kidney movable and at the pelvic brim. Operation was performed, the kidney delivered through an incision in the loin, its capsule split and sutured to the muscles of the back. The patient made a good recovery and has had no return of the symptoms. The second case was a married woman of 21. Since the birth of her only child three years ago she had suffered from intermittent severe pain in the right side, and at such times a pyramidal mass could be felt slightly to the right and above the umbilicus. She was examined in one of these attacks and mobility of the kidney could be definitely made out. The mass was elevated and held in position with a bandage, with almost immediate relief from pain, and on the following day no tumor formation could be made out, though by this time the mobility of the kidney was perfectly apparent. Nephrorrhaphy was performed as in the preceding case, with entire relief of the symptoms. The author states that the principle underlying the indication for nephropexy is simply a mechanical one. By fixing the kidney the ureter is straightened and prevented from gland-kinking and thus producing obstruction to the outflow of the kidney's secretion. [A.B.C.]

3.—**Extraperitoneal Ligation of External Iliac for**

Femoral Aneurysm.—Wm. B. Crawford reports the case. A negro man of 38, with alcoholic and syphilitic history, fell and struck the left thigh on the upright end of a heavy piece of timber. He suffered from slight pain, but 12 days later the injured thigh began to swell, and there was intermittent pain. Relief was obtained by assuming the recumbent posture. A physician was called, who found a tumefaction in the region of the injury, and believing there was an abscess, made a slight incision, but encountering a free flow of blood he applied a compress and bandage and sent the patient to a hospital. Examined by the author, aneurysm was diagnosed. The pulsating tumor extended from Poupart's ligament to the junction of the upper and middle thirds of the thigh. The usual physical signs of aneurysm were present, and the patient's arteries were thickened and sclerosed. Operation was performed. An incision $3\frac{1}{2}$ inches long was made at the usual site for appendiceal operation. The peritoneum was retracted, the artery exposed and ligated with silk. The after-treatment consisted in elevation of the thigh, continuous application of heat with the Tufnell treatment. Pulsation was felt in the posterior tibial artery on the third day, and the foot and leg remained cold for five days, and not until 12 days had elapsed was the temperature of the left leg equal to that of the right. Three weeks after operation the tumor had decreased one-half, and no pulsation could be felt. The patient was discharged but with instructions to remain in bed for two weeks and continue potassium iodid. The tumor mass gradually and almost completely subsided, and the patient is otherwise well. [A.B.C.]

4.—Intussusception.—G. T. Vaughan states that in his study of 1,000 operations for acute intestinal obstruction Gibson found that intussusception was the cause in 187 cases, thus holding a place second only in point of frequency to hernia, which occurred in 354 of the cases. It is estimated that more than one-half of the cases occur in children under 10 years and more than one-third in infants under one year, and Wiggins found it three times as frequent in males as in females. The rational treatment of intussusception is laparotomy. The earlier the better. Hydrostatic pressure may be tried during the first 12 hours, but this method failed in three-fourths of the cases reported by Wiggins. Without operation the mortality is variously estimated at from 60% to 90%; with operation only 32%, and the author is of opinion that if operation is performed within the first 12 hours the mortality will not exceed 5%. He reports a case occurring in a white male, aged 5. Owing to the uncertainty of the symptom-complex operation was not performed until the third day, and intussusception of the ileocecal variety was found, but this was reduced without difficulty and the child made an uneventful recovery. [A.B.C.]

Philadelphia Medical Journal.

May 9, 1903. [Vol. XI, No. 19.]

1. Report of a Case of Suturing the Omentum to the Abdominal Wall (Talma) for the Relief of Ascites Due to Cirrhosis of the Liver, 21 Months After Operation. THOMAS R. NEILSON.
2. A Case of Cirrhosis of the Liver With Ascites. W. W. KEEN and H. M. FISHER.
3. Novelties in the Physical Treatment of Skin Diseases. L. FREUND.
4. The Importance of Repair of Small Cervical Lacerations. JAMES HAWLEY BURTENSHAW.
5. Toxic Amblyopia from Wood Alcohol. J. W. SHERER.
6. A Note on Traumatic Syringomyelia, With Report of a Case Presenting Sensory Disturbances Affecting One Limb, and Trophic Changes of the Subcutaneous Tissue of the Entire Limb. ALFRED GORDON.

1.—Talma's Operation.—Thomas R. Neilson details the case of a man of 51, in whom the omentum was sutured to the abdominal wall for the relief of ascites due to cirrhosis of the liver. During the past ten years the patient has imbibed freely of alcohol. Tapping had been resorted to on three occasions previous to operating. There was complete freedom from abdominal symptoms following the operation which was performed 21 months ago, and at no time since has there been the slightest evidence of return of the ascites. In addition to the operation the patient received tincture of digitalis in small doses, infusion of juniper for a few days, a mixture of sodium phosphate, sodium sulfate and sodium bicarbonate, and lastly Basham's mixture with strychnin. [F.C.H.]

2.—A Case of Cirrhosis of the Liver with Ascites.—W. W. Keen and H. M. Fisher detail the case of a man of 32, in

whom operation was performed eight weeks after the first occurrence of ascites, with subsidence of the ascites six months after the operation, and nonrecurrence in two years. At the time of operation two gallons of fluid were removed from the abdominal cavity. The omentum was shrunken, but showed no evidence of malignant disease. The upper surfaces of the liver and diaphragm were rubbed with a gauze sponge, the spleen and its corresponding parietal peritoneum were treated in the same manner, also the anterior surface of the omentum and the corresponding portion of the anterior abdominal wall. The omentum was sutured to the anterior abdominal wall with celluloid thread, and four of the silkwormgut sutures used to close the abdominal incision "picked up" the omentum as further security. For a few months after the operation the ascites was very little influenced; about five months subsequent to the surgical procedure the collateral circulation was established and since then there has been no recurrence. [F.C.H.]

3.—Novelties in the Physical Treatment of Skin Diseases.—L. Freund believes that the dermatologists have taken precedence over the other branches of physical therapy, and that dermatology may look back with pride upon the excellent results achieved. He details some experiments to show the inaccuracies of some of the claims made by a few French observers for the radiochromometer and spintometer. Other experiments of interest to x-ray workers are detailed. [F.C.H.]

4.—The Importance of Repair of Small Cervical Lacerations.—J. H. Burtenshaw details a series of cases to prove that not every cervical laceration requires a surgical operation for its cure, but that due significance is not attached to the smaller lacerations which, in many instances, are the unrecognized causes not only of local morbid conditions, but of general systemic ones as well. An additional reason, and a most important one for the repair of a torn cervix, lies in the fact that, beyond question, malignant degeneration is much more liable to occur in such a cervix than one that is normal. There can be no difference of opinion as to the necessity of repair of a laceration, whether unilateral or bilateral, of such degree as to cause eversion of the lips of the cervix. [F.C.H.]

5.—Toxic Amblyopia from Wood Alcohol.—J. W. Sherer details the case of a Swede of 32, with a reference to four others who drank a mixture, the basis of which was wood alcohol. Two of the patients died, one within 48 hours, the other within 72 hours. He firmly believes that the earliest lesion in toxic amblyopia is to be found in the ganglion cells of the retina, and that consecutively the nerve-fibers break down. The fact that the vision in chronic toxic amblyopia may be markedly improved by amyl nitrite, rest, good hygiene, etc., to decline just as markedly under reversed conditions, points decisively to a nuclear, not to a neuritic, source of the trouble. Reasoning deductively from the treatment which has been proposed for toxic amblyopia in general, he would suggest strychnin, potassium iodid, mercury bichlorid, and nitroglycerin for the treatment of amblyopia due to wood alcohol. [F.C.H.]

6.—A Note on Traumatic Syringomyelia.—Alfred Gordon details the case of a woman of 40, suffering from a traumatic syringomyelia presenting sensory disturbances affecting one limb (the left), and trophic changes of the subcutaneous tissue of the entire limb. He believes that all the cases presenting the classic dissociation with or without muscular atrophy should be classed as syringomyelia, provided they do not present symptoms of other systemic diseases of the cord. Whether there is a gliosis or a cavity formed in place of an old hemorrhagic focus, or only a disintegration of the nervous tissue in the cord, affecting the sensory fibers so that either of these affections give rise to the sensory dissociation, all of them should be called syringomyelia. He concludes as follow: In view of the fact that the sensory disturbances in the case are those of syringomyelia in its most typical form, that the trophic changes are in the strictest relation with the area of distribution of the sensory dissociation, that the affection is in the upper extremity, that hematolytic foci after trauma in a number of cases were followed by cavity formation or only by a stage of necrosis, and that the symptoms in the patient made their appearance shortly after the trauma, for all these reasons it is justifiable to classify this case as one of a posttraumatic syringomyelia.

The peculiarity of the case consists in the fact that the symptoms are unilateral and limited to one extremity, and that the trophic changes of the subcutaneous tissue cover the entire affected extremity. The latter condition makes the case unique, as all the cases reported with similar condition presented trophic disturbances only of one portion of the limb. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

REVIEW OF LITERATURE

Socalled Functional Aortic Insufficiency in the Atheroma of Hodgson's Disease.—M. Barjon¹ reports two cases. Each patient exhibited during life a double aortic murmur, with all the symptoms of insufficiency of the aortic valves. Autopsy showed that these valves were healthy and closed perfectly. The aorta in each case, however, was found to be highly atheromatous, with its ascending part cylindrically dilated to an extraordinary extent, exhibiting the condition described under the name of Hodgson's disease. In previously reported cases the murmurs have been explained in various ways to be due to a functional insufficiency of the aortic valves. This appears to Barjon to be unnecessary. The systolic murmur is produced by the blood passing through a comparatively narrow orifice into the enormous cavity beyond. The diastolic murmur is due to a reflux of blood from the large arteries into the aneurysmal sac. The clinical diagnosis between this condition and true aortic insufficiency seems difficult, if not impossible. [B.K.]

Congenital Defect of the Pectoral Muscle.—Lengsfelder² reports the case of a man in whom the costosternal and abdominal portions of the pectoralis major were absent; the clavicular portion was hypertrophied. Concerning the pectoralis minor nothing could be definitely made out. The condition was evidently congenital. The clinical interest of this and other similar cases is that such patients usually on account of deficient ventilation of the right lung are predisposed to pulmonary disease. The patient in question suffered repeatedly with inflammation of pleura and lungs, which had led to formation of pleural adhesions and pulmonary sclerosis. [E.L.]

Undulant Fever.—An unusually interesting and readable article on the above subject is contributed by F. J. A. Dalton,³ who prefers this name to the more common one of Malta, or Mediterranean fever, because the disease undoubtedly occurs in other localities. Among the latter are India, North and South Africa, South America, and China. Dalton has reached the conclusions that the disease is air-borne, that the organism is very widely diffused in the localities where the fever is endemic, and that it has to be taken into the healthy individual in large numbers to produce its characteristic effects. Under ordinary circumstances the disease is not infectious. Of the symptoms the most important is pyrexia, after which is placed affections of the nervous system. The importance and frequency of the neuritis has not been sufficiently noted in the literature of the disease. On the other hand, Dalton takes exception to the statements of most writers, particularly Hughes, regarding the high frequency of joint effusion. In his experience this complication has occurred in less than 1% of the cases. Cardiac failure is the great complication to be guarded against. The agglutination test is the reliable means of diagnosis. The real treatment of undulant fever consists in keeping the patient in such a condition that he will avoid many of the symptoms of the disease, especially the anemia, the cardiac weakness, and the neuritis. [A.G.E.]

Value of Functional Diagnosis.—Krauss⁴ discusses the recent methods of studying the functions of the heart, lungs, kidneys and general metabolism. He passes upon the value of orthodlography, tachography, cyrtometry, stethography, sphygmography, sphygmochromography, cryoscopy, relationship between electrolytes and nonelectrolytes of the urine, the determination of sulfur excretions, etc. [E.L.]

GENERAL SURGERY

A. B. CRAIG

MARTIN B. TINKER

C. A. ORR

REVIEW OF LITERATURE

Radical Cure of Inguinal Hernia in Early Infancy.—B. H. Nicholson¹ is of the opinion that the factor which militates most strongly against operation for inguinal hernia during infancy is the difficulty of preserving an aseptic condition of the wound. He advocates operation, and prefers the method used by Bassini, the two points of chief importance in the operation being that the scrotum shall not be opened and that the aponeurosis of the external oblique shall be cut through, thus exposing the whole length of the inguinal canal and making it easy to ligate and sever the sac flush with the peritoneal cavity. In congenital hernia it is best to isolate the vas at the neck of the sac only for a short distance, sufficient for the sac to be divided or transected. It is better not to meddle with the distal end of the sac in the scrotum, as the testicle is easily damaged, and a twist in the vas, which is but feebly vascular, is sufficient to cause death of the organ. Hemorrhage must be absolutely controlled. The wound is closed in the usual way. A collodion dressing is applied, and over this a dressing of sterile gauze. Then a plaster-of-paris spica is applied, beginning below the knee. The spica is removed on the sixth day. The important part of the operation is to prevent the dressings from being saturated with urine. The penis is therefore inserted in a wide rubber tube, the tubing being attached by four interrupted stitches to the skin at the base of the organ, and is then carried into a receptacle in the cot, and thus the urine is conveyed entirely away from the dressing. In hospital practice he believes dressings are of little use. [A.B.C.]

Concerning the Socalled Physiologic Salt Solution.—F. Engelmann's² investigations demonstrate that neither the 0.6% nor any other salt solution except the 0.9% solution must be considered as isotonic with human blood-serum. In all cases in which formerly on account of false suppositions the use of solutions varying from 0.5% to 0.75% have been recommended (whether at the sick bed as infusion, or in the laboratory as preserving fluid) the 0.9% solution should be employed. [E.L.]

Fat Embolism Following Straightening of the Limbs.—J. Preindsberger³ reports a case occurring in a girl of 17, with bilateral genu valgum. The knees were straightened, under anesthesia, by means of Lorenz's osteoclasts, the operation being accomplished with very little difficulty. Two days later the patient was suddenly seized with dyspnea, pain in the epigastrium, nausea, and rapid pulse. There was slightly impaired resonance at the base of both lungs, with weakened breath sounds and fine rales. A few hours later she suddenly collapsed and died. Autopsy showed some signs of traumatism in the bones around the left knee-joint, and also fat emboli in the pulmonary arteries and capillaries. Death is attributed to the latter lesions. [B.K.]

Experiences Concerning Bülow's Aspiration Drainage in the Treatment of Empyema.—Oloff⁴ operated on 15 children with empyema according to Bülow's method. This consists in the introduction of a small trocar into the pleural cavity through one of the intercostal spaces. A rubber drainage tube is passed into the abscess cavity through a canula, and fastened to the chest wall. The syphon tube, one end of which is in a vessel containing an antiseptic fluid, is connected with the drain by means of a glass link, and the pus drawn off in this manner. About the fifteenth day the condition is usually so far improved as to permit the substitution of a simple drain. Of the 15 patients, 7 were cured, 1 improved, 2 unimproved, and 5 died of lung or heart complications. It is important to study carefully the cases before deciding on the method of operation. Old sacculated empyemas, multiple and gangrenous abscesses, cavities containing tough, stringy pus or such as require rapid evacuation should be treated by resection, but in all other cases Bülow's procedure is preferable to the graver operation. [E.L.]

¹ Lyon Médical, April 12, 1903.

² Wiener klinische Wochenschrift, December 4, 1902.

³ The Practitioner, April, 1903.

⁴ Deutsche medicinische Wochenschrift, December 4, 1902.

¹ British Medical Journal, April 11, 1903.

² Deutsche medicinische Wochenschrift, January 22, 1903.

³ Zeitschrift für Heilkunde, Bd. xxiv, 1903, Heft. III.

⁴ Jahrbuch für Kinderheilkunde, 1902, Vol. lvi, p. 156.

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN _____ FRANK C. HAMMOND

REVIEW OF LITERATURE

Ovariectomy During Pregnancy.—Willi Thomass¹ performed ovariectomy in the fourth month of pregnancy upon a patient wishing the operation because of severe pains and great suffering. There was no "strict" indication for undertaking the operation, and previous to it there was not the slightest sign of impending abortion. Since the existence of the tumor the patient had passed through four normal deliveries and one abortion. Two days after the ovariectomy abortion followed, though the fetus was completely normal in form and constitution. The operation was abdominal celiotomy and presented unforeseen difficulties in the way of numerous and strong adhesions only separable by knife or scissors. However, all manipulation of the uterus was avoided by the abdominal method. The woman passed through the abortion and its results in great danger, but her recovery was rapid and complete. [w.k.]

Parotitis Following Operations on the Female Genital Organs.—M. Condamin² has reported to the Société de Chirurgie de Lyon a case in which parotitis followed a curetment of the uterus. The operation was done for persistent hemorrhage after the expulsion of a hydatidiform mole. The patient complained of dryness of the mouth for several days after the operation. On the fourth day the temperature began to rise, and the left parotid gland began to swell. The genital tract was normal. The swelling increased for five days and then subsided. The right gland was not at all affected. The complication is explained by a close nervous connection, through the sympathetic system, between the genital organs and the salivary glands. The reverse process to that occurring in this case is a wellknown phenomenon. A diminution of salivary secretion was produced reflexly by the operation, and this condition favored the penetration of microorganisms from the mouth to the interior of the gland. [b.k.]

Congenital Goiter.—W. E. Fothergill³ reports a case of fetal hyperplasia of the thyroid. This was based upon a case in which the mother had been given potassium chlorate during pregnancy. The child was born alive, but death occurred within an hour. The thyroid gland was uniformly enlarged, and weighed 25 grams, the normal weight being 1½ grams. The author mentions the fact that Hewetson and MacDonald have each reported cases of congenital goiter after potassium chlorate had been administered to the mother during gestation. [A.B.C.]

Operative Treatment of Uterine Carcinoma.—Gustav Klein⁴ gives a concise review of this subject. He states the three fundamental bases of cancer are hereditary disposition, local disposition of the tissues, and the unknown quantity or exciting cause. Since the cause is unknown, there is no general prophylaxis; but as carcinoma of the portio or cervix may result from old lacerations, the early repair of lacerations may be considered a preventive measure. All irritation from pessaries should be avoided as contributing causes. Klein does not believe in hereditary carcinoma, but thinks the infection may be facilitated by endemic conditions, individual predisposition, or deficiency of resisting power. In discussing results of treatment, three things must be considered: whether operable, operation mortality, and absolute healing statistics. He gives the proportion of operable cancer by various methods as varying from about 30% to 50%. The percentage depends largely upon the primary situation of the cancer, being highest in primary carcinoma of the body. The operation mortality he summarizes as varying from 7% in simple vaginal total extirpation to 20% in abdominal total extirpation. Absolute healing, that is freedom from recurrence for five years after operation, is about 10% to 13%. Klein claims that uterine cancer can be cured in practice only by operation and not by any temporizing measures. [w.k.]

¹ Münchener med. Woch., March 10, 1903.

² Lyon Medical, April 12, 1903, p. 621.

³ British Medical Journal, April 11, 1903.

⁴ Münchener medicinische Wochenschrift, March 17 and 24, 1903.

TREATMENT

SOLOMON SOLIS COHEN _____
H. C. WOOD, JR. _____ L. F. APPLEMAN

EDITORIAL COMMENT

On the Value of Pepsin.—Among the delusions which interested manufacturers encourage among physicians there is perhaps none to which we cling with a more pathetic credulity than that of the value of pepsin as a digestant in cases of gastric dyspepsia. It is in vain that it has been pointed out that it is the fermenting starches, which are not at all affected by pepsin, that give rise to the unpleasant symptoms; it is in vain that it has been shown that pepsin is almost never absent from the stomach, the digestive failure being due to lack of hydrochloric acid. If a "pepsinite" is asked how he expects two grains of pepsin to do any great amount of digestion he points with a childlike pride to the fact that the United States Pharmacopeia requires that pepsin shall digest 3,000 times its weight of egg albumen, ignoring entirely the fact that the test allows six hours for the digestion, and that just about one specimen in a thousand comes up to the pharmacopeial standard. Recently it has been pointed out by the Laboratory of the Delaware State Board of Health¹ that the solution of the precipitated albumen, as required by the United States Pharmacopeia, does not necessarily indicate the complete digestion of the egg, since the acid albumen produced by the HCl is soluble. Assays made of various brands of pepsin show that there is no uniformity in strength, even of different samples from the same firm. The investigation is so instructive that we give a few results obtained by this method of assay upon four of the best known brands of pepsin, marked 1:3,000:

Pepsin A	1:560
Pepsin B	1:1,052
Pepsin C	1:1,209
Pepsin D	1:1,253

If pepsin is of value in the treatment of diseases of the stomach, and we believe that in many cases it is, it probably is not by virtue of any digestive power, but perhaps through some sedative effect on irritated mucous membranes.

REVIEW OF LITERATURE

The Influence of Drugs on the Glycosuria of Diabetes.—M. Kaufmann² gives an exhaustive study of the literature and his own investigations concerning the various drugs used in diabetes mellitus. He finds the following drugs worthless, or nearly so: Chloral, piperazin, iodine preparations, arsenic, quinin, methylene-blue, myrtillus, linseed tea, bean-shell tea, alkalies, calcium salts, uranium salts, ammonium salts, pancreas extract, liver extract, cocain, pilocarpin, ergotin. The secret preparations—glycosolvol, saccharosolvol, and antimellin—are also of no value. Antipyrin, carbolic acid, and corrosive sublimate have some influence, but should not be used on account of deleterious effects on the human body, especially with prolonged use. Potassium bromid and the Carlsbad waters are of value in a few cases. The drugs having definite influence on the intensity of the glycosuria are opium, salicylic acid and its derivatives, salol and aspirin, and to a limited extent, jambul. Opium should be employed only in severe cases when diet alone has no effect on the progress of the disease. The salicylic acid preparations are of value only in mild or moderately severe cases of glycosuria, especially when treatment by diet still allows a small residue of sugar in the urine. Jambul is also useful in some mild cases, but fails altogether in others. [b.k.]

Dangers in Anesthesia.—Cardie³ believes that fear can exercise a great effect on the way in which an anesthetic is borne. The effect it produces is comparable that of violent exertion. Under these circumstances chloroform is very dangerous, especially in the early part of the anesthesia. He

¹ American Journal of Pharmacy, 1903, lxxv, 42.

² Zeitschrift für klin. Med., Bd. xlviii, pp. 260 and 436.

³ Treatment, March, 1903, No. vii, page 1.

regards this fear as a potent factor in the production of shock. Another condition increasing the danger of anesthesia is the lymphatic diathesis, which is characterized by persistent thymus, enlarged lymph-glands, adenoid growths in the nasopharynx and sometimes by enlarged spleen. [H.C.W.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 9, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
Alabama:	Mobile.....Apr. 25-May 2.....	4	
California:	San Francisco.....Apr. 19-26.....	8	
District of Columbia:	Washington.....Apr. 25-May 2.....	1	
Illinois:	Belleville.....Apr. 24-May 1.....	15	
	Chicago.....Apr. 25-May 2.....	15	2
	Galesburg.....Apr. 25-May 2.....	4	
	Joliet.....Dec. 29-Mar. 2.....	30	2
Indiana:	Elwood.....Apr. 16-May 3.....	7	
	Indianapolis.....Apr. 27-May 2.....	5	2
	Kokomo.....Apr. 27-May 2.....	1	
Iowa:	Des Moines.....Apr. 27-May 4.....	2	
	Dubuque.....Apr. 26-May 2.....	1	
Kentucky:	Lexington.....Apr. 26-May 2.....	1	
	Louisville.....Apr. 1-30.....	55	4
Louisiana:	New Orleans.....Apr. 18-May 2.....	14	
Maine:	Biddeford.....Apr. 26-May 2.....	2	imported.
	Franklin County.....May 7.....	20	
	Rumford Falls.....May 3.....	1	
Maryland:	Baltimore.....Apr. 26-May 2.....	2	
Massachusetts:	Fall River.....Apr. 26-May 2.....	2	
Michigan:	Detroit.....Apr. 26-May 2.....	12	
	Flint.....Apr. 26-May 2.....	1	
	Grand Rapids.....Apr. 26-May 2.....	2	
	Port Huron.....Apr. 26-May 2.....	2	
Minnesota:	Winona.....Apr. 26-May 2.....	1	1
Nebraska:	Omaha.....Apr. 26-May 2.....	1	
	South Omaha.....Apr. 1-30.....	7	
New Hampshire:	Manchester.....Apr. 25-May 2.....	11	
	Nashua.....Apr. 25-May 2.....	3	
New York:	Buffalo.....Apr. 25-May 2.....	1	
	Elmira.....Apr. 25-May 2.....	1	imp't'd.
Ohio:	Cincinnati.....Apr. 24-May 1.....	5	
	Cleveland.....Apr. 25-May 2.....	1	
	Dayton.....Apr. 25-May 2.....	3	2
Pennsylvania:	Carbondale.....Apr. 23-30.....	1	
	Dunmore.....Apr. 1-30.....	5	
	McKeesport.....Apr. 25-May 2.....	6	
	Philadelphia.....Apr. 25-May 2.....	16	4
	Pittsburg.....Apr. 11-18.....	24	7
	Pittsburg.....Apr. 25-May 2.....	2	5
	Pittsville.....Apr. 1-30.....	2	
South Carolina:	Charleston.....Apr. 25-May 2.....	4	
Tennessee:	Memphis.....Apr. 25-May 2.....	2	
Utah:	Salt Lake City.....Apr. 25-May 2.....	11	
Wisconsin:	Green Bay.....Apr. 16-May 3.....	1	
	Milwaukee.....Apr. 25-May 2.....	3	

SMALLPOX—FOREIGN.

Austria:	Prague.....Apr. 4-18.....	8	
Belgium:	Brussels.....Apr. 11-18.....	1	5
Canada:	Halifax.....Apr. 25-May 2.....	1	
	Owen Sound.....Apr. 29.....	1	Present.
	Quebec.....Apr. 25-May 2.....	1	
China:	Hongkong.....Mar. 14-21.....	1	1
Colombia:	Barranquilla.....Apr. 19-26.....	1	1
France:	Marseilles.....Mar. 1-31.....	1	32
Great Britain:	Birmingham.....Apr. 11-18.....	50	
	Bristol.....Apr. 11-18.....	2	
	Dublin.....Apr. 4-18.....	34	2
	Dundee.....Apr. 11-18.....	2	
	Leeds.....Apr. 18-25.....	19	
	Leith.....Apr. 4-11.....	1	
	Liverpool.....Apr. 11-18.....	94	7
	London.....Apr. 4-11.....	5	
	Manchester.....Apr. 11-18.....	5	1
	Newcastle-on-Tyne.....Apr. 11-18.....	4	
	Nottingham.....Apr. 11-18.....	2	
	Sheffield.....Apr. 4-18.....	6	
	South Shields.....Apr. 11-18.....	2	
India:	Bombay.....Mar. 31-Apr. 7.....	89	
Netherlands:	Amsterdam.....Apr. 18-25.....	1	
Russia:	Rotterdam.....Apr. 18-25.....	1	
	St. Petersburg.....Mar. 28-Apr. 11.....	43	7
	Warsaw.....Mar. 28-Apr. 4.....	3	

YELLOW FEVER.

Colombia:	Panama.....Apr. 23-30.....	2	1
Ecuador:	Guayaquil.....Apr. 4-11.....	2	2
Mexico:	Tampico.....May 4.....	1	1
	Vera Cruz.....Apr. 25-May 2.....	9	3

CHOLERA—INSULAR.

Philippines:	Manila.....Mar. 14-21.....	4	3
	Provinces.....Mar. 14-21.....	203	130
	Not previously reported	421	231

PLAGUE.

China:	Hongkong.....Mar. 14-21.....	28	28
India:	Bombay.....Mar. 31-Apr. 7.....	1,827	
	Karachi.....Mar. 22-29.....	192	152

Changes in the Medical Corps of the U. S. Army for the week ended May 9, 1903:

KIRKPATRICK, Captain THOMAS J., assistant surgeon, will report to the commanding general, department of Luzon, for assignment to duty.

LEWIS, Captain WILLIAM F., assistant surgeon, will proceed to Zamboanga, Island of Mindanao, for assignment to duty.

MUNSON, Captain EDWARD L., assistant surgeon, will report to the civil governor of the Philippine Islands for duty to assist the commissioner of public health.

SPILMAN, ROBERT S., contract surgeon, now in Manila, P. I., is relieved from duty in the department of Luzon, and will proceed to Zamboanga, Island of Mindanao, for duty.

HANSEN, MORRIS J., contract surgeon, is granted leave for two months with permission to visit Japan, to become available about May 1.

O'NEIL, JOSEPH A., contract surgeon, will report to the commanding general, department of Luzon, for assignment to duty.

MCODORY, ROBERT J., contract surgeon, leave granted April 10 is extended one month.

WHEELER, LEWIS H., contract surgeon, leave granted March 19 is extended one month.

SMITH, CHARLES F., contract surgeon, is granted leave for ten days.

PERLEY, Major HARRY O., is granted leave for four months, from about June 1, with permission to go beyond sea.

CRAMPTON, Major LOUIS W., surgeon, is relieved from duty at Fort Adams and will proceed to St. Louis, Mo., and assume charge of the medical supply depot in that city, relieving Major Harry O. Perley, surgeon, to enable him to take advantage of leave.

A board of officers to consist of Major Charles F. Mason, surgeon; Captain Francis A. Winter, assistant surgeon; Captain Frederick P. Reynolds, assistant surgeon, is appointed to meet at the office of the surgeon-general of the army May 13 for the following purposes: To revise the drill regulations and outline for first aid for the hospital corps; to recommend a course of instruction for the companies of instruction, hospital corps; to prepare a scheme of instruction for the hospital corps detachments; to consider the desirability of a side arm for members of the hospital corps, and to recommend one if found desirable.

CLAYTON, Captain JERE B., assistant surgeon, is relieved from duty at Vancouver Barracks and will, upon the opening of navigation on the Yukon River, proceed to Fort Egbert, Alaska, to relieve Contract Surgeon C. A. Treuholtz, who will proceed to Vancouver Barracks, Washington, for temporary duty.

MILLER, EDGAR W., contract surgeon, is granted leave for one month.

POWELL, DWIGHT C., contract surgeon, is granted leave for one month.

HARVEY, Lieutenant-Colonel PHILIP F., deputy surgeon-general, is granted leave for one month.

BROWN, HENRY L., contract surgeon, is granted leave for twenty-one days.

ENDERS, WILLIAM J., contract surgeon, is granted leave for ten days, from about May 17.

STONE, Captain JOHN H., and EDWARDS, First Lieutenant JAMES F., assistant surgeons, now on duty at Fort Leavenworth, are detailed as assistants to the instructor in the department of hygiene at the General Service and Staff College.

Changes in the Medical Corps of the U. S. Navy for the week ended May 9, 1903:

LEWIS, D. O., surgeon, detached from the Pensacola and granted sick leave for three months—May 2.

SHAW, H., assistant surgeon, ordered to the Yankee—May 2.

COCKE, P. L., acting assistant surgeon, detached from the Naval Academy and ordered to the Chesapeake—May 2.

MICHEL, R. H., assistant surgeon, ordered to the Wisconsin—May 4.

STRINE, H. F., TRAYNOR, P. J., NEILSON, J. L., MUNSON, F. M., BACHMAN, E. A., assistant surgeons, ordered to the Asiatic station, via Solace, May 15—May 4.

BERRYHILL, T. A., surgeon, detached from the navy yard, Pensacola, Fla., and ordered to the Baltimore—May 6.

ARNOLD, W. F., surgeon, detached from Port Isabela, P. I., and ordered to Naval Hospital, Yokohama, Japan—May 6.

MCCLANAHAN, E. K., assistant surgeon, detached from the naval station, Polloc, P. I., and ordered to the Oregon—May 6.

BACKUS, J. W., assistant surgeon, detached from the Princeton and ordered to the Helena—May 6.

DUNN, H. A., assistant surgeon, detached from the naval station, Cavite, P. I., and ordered to the naval station, Olongapo—May 6.

HOYT, R. E., assistant surgeon, ordered to the Texas—May 7.

JENNNESS, B. T., assistant surgeon, ordered to the Indiana—May 7.

Changes in the Public Health and Marine-Hospital Service for the week ended May 7, 1903:

NYDEGGER, J. A., passed assistant surgeon, bureau order of April 21, 1903, directing Passed Assistant Surgeon Nydegger to proceed to Gulf Quarantine and assume command of the service at that port, revoked—May 2, 1903.

FOSTER, M. H., passed assistant surgeon, granted leave of absence for two days—May 4, 1903.

KERR, J. W., assistant surgeon, granted leave of absence for two days from May 7—May 6, 1903.

BALLARD, J. C., acting assistant surgeon, granted leave of absence for twenty days from April 23—May 2, 1903.

FRARY, T. C., acting assistant surgeon, granted leave of absence for one day—May 5, 1903.

GRACE, J. G., acting assistant surgeon, granted leave of absence for nine weeks—May 2, 1903.

MARR, H., acting assistant surgeon, granted leave of absence for thirty days from May 10—May 2, 1903.

WOODS, C. H., pharmacist, department letter granting Pharmacist Woods leave of absence for twenty days, amended so as to be for nineteen days—May 2, 1903.

HOLT, E. M., pharmacist, granted leave of absence for thirty days from May 5—May 2, 1903.

Promotion.

C. W. STEPHENSON, pharmacist of the third class, promoted to be pharmacist of the second class, effective April 1, 1903.

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State Supervision of State-aided Private Charitable Institutions.—The Pennsylvania newspapers of the past week have been publishing the column-long lists of the millions parceled out to the private charitable institutions by the State Legislature. In one sense it is a demonstration of praiseworthy benevolence on the part of the people of the Commonwealth, but in another it is melancholy reading. For the indiscrimination and lack of control to which it bears even more striking witness is a sorry proof of the absence both of sound morality and clear business sense. The Pennsylvania plan—such is the name by which history will stigmatize it—wholly disregards the fundamental principles of State aid, viz., supervision and control over the disbursement of money given for charitable purposes, to see that the objects for which it is given are fulfilled, and the elimination of partisan politics from the management of the institutions and placing them on a scientific basis. The State that has no effective State Board of Control, nor any Advisory Board of State Charities, has no right to spend the taxpayers' money in the support of its charitable institutions.

The Extinction of Rabies.—A few years ago hundreds of cases of rabid dogs were annually reported in Great Britain. There is not a single case reported in the first three months of this year in the whole country. The government wisely took up the treatment by prevention, ordered all dogs to be muzzled, formulated drastic rules to prevent the importation of dogs with the disease, and saw to it that tramp, lost, and vagabond dogs were disposed of. Now that hydrophobia has disappeared the muzzle order has been withdrawn. In Norway, Sweden, Holland, Switzerland, and Denmark hydrophobia is now unknown. Why is it that in our country the disease is so common? In New York City there have been twelve fatal human cases in the last six months. The reason is believed to be threefold: First, because it is under local instead of Federal control, and an effective national quarantine is almost impossible. Second, three-quarters of the States in the Union have neither quarantine nor muzzle laws for dogs exposed to the contagion of rabies. Third, and most important of all, because the patient, who in nine cases out of ten is the victim of the community's carelessness and not his own, has to pay the fee for Pasteur treatment, instead of the

guilty community paying it. In New York City the dogs are at last to be restrained, and if the whole country could be brought under the same wise rules to prevent the spread of this infectious disease there would soon be no more need here of the Pasteur institutes and treatment by that method than there is in England. An incidental demonstration of the fallacy of the now extinct denier of the existence of the real disease is offered in the fact that panics and "pseudorabies" have also disappeared in England. The contention of the reactionaries, it will be remembered, was that rabies and hydrophobia was epilepsy or the disease was imagined, either by the dogs, the human patients, or by the spectators. The English method seems to have been as effective against the simulated as against the real disease. Hence the silence of the antihydrophobics.

Another diploma-selling and book-selling institution is flooding the profession with its literature. There are something less than a dozen enclosures in the envelope, not forgetting the half-filled-in postal order for the cash desired. It is a hospital which appeals to the diploma hunter, and the price is only \$15.00 for the certificate if it is of the quality on "heavy Royal linen paper," the imitation article costing \$20.00; but the genuine sheepskin can be had for \$25.00. Five dollars in advance is required with the application. In addition you will get a real Red Cross button for your coat lapel, and still another gratis inducement is the president's great book how to get half a million dollars by the practice of medicine, as the president himself has done. We came near forgetting the beautiful pocket membership ticket. And the president is also A.M., M.D., LL.D.—only outdone by the vice-president, who has a still longer tail to his name, being also D.D.S., and Ph.D. The *praefectus potestatis medicorum*, or "president of the staff," is also an LL.D. and a man of national fame. The capital stock is \$250,000 and Christianity is especially commended. The morals of this concern are illustrated by the following quotations:

The whole course of a successful professional career resolves itself into one of diplomacy, associated with indispensable professional capacity.

Our certificate of membership (see fac-simile) is artistically designed and executed in the highest style of the lithographers' art; neatly framed and hung on the walls of your reception-room, it imparts confidence to all visitors and patients, and is

a much stronger drawing card than an ordinary diploma, as it indicates a higher attainment.

We will agree to pay you a cash commission of 50% of all surgical fees, and 25% of all medical fees received from patients you bring or send to us. This, of course, will be held strictly private and confidential. Your professional interests as well as our own demand this.

We have a large number of the best Chicago surgeons and specialists in all branches on our staff; therefore, you are assured, etc.

The men who support and profit by this sort of thing are the worst enemies the profession has, because they encourage antimedicine, and both the justified and unjustified contempt of the lay world, bringing the whole profession into disgrace. The new substitute for the Code of Ethics says that the divider of fees should be denied all recognition and fellowship in the medical profession. Are these mere empty words?

Interstate Reciprocity.—In his otherwise most admirable presidential address before the American Medical Association, it seems surprising that Dr. Billings should have spoken favorably of the impossible scheme for a National Board of Medical Examiners, and that the feasible and actual plan of reciprocity between the States was not commended or even alluded to, and yet that is the only legal and practical method of meeting the difficulty. The profession should not only not ignore, but should heartily cooperate to put life into this method of bringing about reciprocity. There seems to be a strange disinclination to call the child by its right name. This may be due to a hidden and mistaken feeling that interstate reciprocity means somehow or other a lowering of the standard. Uniformity of educational qualification is the foundation of true reciprocity; equal qualification should alone entitle to reciprocity. The strength of the reciprocity term is in the fact that States not allowed the measure are under standard, and the sole cure lies in bringing them up to a proper grade. There is no improvement except by comparison, and true reciprocity not only invites but forces official comparison. The American Confederation of Reciprocating, Examining and Licensing Boards demands two wise qualifications:

I. That a certificate of registration showing that an examination has been made by the proper board of any State, on which an average grade of not less than 75% was awarded, the holder thereof having been at the time of said examination the legal possessor of a diploma from a medical college in good standing in the State where reciprocal registration is sought, may be accepted, in lieu of examination, as evidence of qualification. Provided, that in case the scope of the said examination was less than that prescribed by the State in which registration is sought, the applicant may be required to submit to a supplemental examination by the board thereof in such subjects as have not been covered.

II. That a certificate of registration, or license issued by the proper board of any State, may be accepted as evidence of qualification for reciprocal registration in any other State. Provided, that the holder thereof was, at the time of such registration, the legal possessor of a diploma issued by a medical college in good standing in the State in which reciprocal registration is sought, and that the date thereof was prior to the legal requirement of the examination test in such State.

“The Sanitary Regulation of Barber Shops” was the subject of an excellent paper by Dr. W. E.

Hart, of Elyria, Ohio, read at the January meeting of the local and State Boards of Health of Ohio.¹ The statement was made that in 1900 there were 3,400 children refused admission to the schools of New York City because of parasitic affections of the head, and of these over 800 were because of ringworm of the scalp. Dr. Hart had a lively personal interest in the subject, as he had contracted barbers' itch from the use by a barber of unsterilized “clippers.” Cases of syphilis have arisen from the application of alum stick by barbers. The barbers of Chicago have formed a union, raised prices, and petitioned to be placed under the protection of the City Health Department. They wished to abolish “the five-cent shop.” To ensure the requisite cleanliness of the barber shops, Dr. Hart recommends: 1. Education of the barber. 2. Protect him by suitable legislation. 3. Enforce the rules and regulations recommended by boards of health. Running hot water for sterilizing all instruments is the prime requisite. Successful water-heaters, and special formaldehyd cabinets are now on the market and their use should be made obligatory.

At a meeting of the Board of Health of Boston, in 1900, the following regulations were adopted, and posted in all the city barber shops:

The place of business, together with all furniture, shall be kept at all times in a cleanly condition.

Mugs, shaving brushes and razors shall be sterilized by immersion in boiling water after every use thereof.

A separate clean towel shall be used for each person.

Alum or other material used to stop the flow of blood shall be so used only in powdered form and applied on a towel.

The use of powder-puffs is prohibited.

The use of sponges is prohibited.

The barber shall cleanse his hands thoroughly immediately after serving every customer.

No person shall be allowed to use any barber shop as a dormitory.

Every barber shop shall be provided with running hot and cold water.

Medicine and pedagogics are inevitably becoming more and more interrelated and a good illustration is the appointment of a committee of the Section on Nervous and Mental Diseases of the American Medical Association to consider and report on the health of school children. Presented by Dr. William J. Herdman, the resolutions were as follow:

Resolved, That we, the members of the Section on Nervous and Mental Diseases of the American Medical Association, are deeply conscious of the vital importance of the methods of education and school environment on the development of youth, and are of the opinion that the time has arrived for the harmonious and helpful cooperation of educators and physicians in the work of education. In view of this belief on our part, be it further

Resolved, That we appoint a committee from our membership at this meeting whose duty it shall be:

First, to collect during the coming year such exact information as may be accumulated both in this country and in Europe upon the school methods in their relation to the physical and mental welfare of youth.

Second, to confer with leading educators everywhere with the view of eliciting information and opinions upon the subject and of securing cooperation in efforts for improvement of methods.

Third, to report to the section at its next annual meeting the results of their investigations, and formulate a plan for

¹ Ohio Sanitary Bulletin, February-March, 1903.

future and vigorous prosecution of such reforms as we may decide from their report are clearly needed.

The committee appointed is composed of W. J. Herdman, of Ann Arbor; T. A. Williams, of Texas; J. H. McBride, of Pasadena, Cal.; Hugh T. Patrick, of Chicago; F. Savary Pearce, of Philadelphia. This able committee have it in their power to do a great service, and their work should be prosecuted with zeal and thoroughness.

The requirements for admission to medical colleges adopted at the recent meeting of the Association of American Medical Colleges constitute a noteworthy advance. According to the accepted report of the committee, no college shall be a member of the association that does not require of each student for admission either a diploma from a high school or State normal school, obtained after attendance upon a four years' course of instruction, preceded by not less than a six years' course of study in primary and intermediate schools; or a degree of B.S. or B.A. or other equivalent from an approved university, college or academy; or examination upon (a) English grammar, rhetoric and composition, the equivalent of two years of high school work in this branch; (b) algebra, to quadratics; (c) Latin, one year high school work; (d) physics, one year of high school work; (e) United States history, one year of high school work, and seven additional branches of the students' choice from a large number of electives. A student may be allowed to enter upon his medical work conditioned in not more than two branches (one year's work in each), but these conditions must be removed by satisfactory examination before he is allowed to enter upon the second year of his medical course. Candidates for the degree of Doctor of Medicine shall have attended four years of study of not less than seven months each and at least twelve calendar months shall intervene between the beginning of any course and the beginning of the preceding course. Time credits may be given to students who have the necessary entrance requirements and who are graduates or students of recognized colleges of homeopathic or eclectic medicine for such courses of instruction of the required duration as they have successfully filled, excepting in the course of the fourth year, provided they pass satisfactory examinations in materia medica and therapeutics. No time credit or advanced standing shall be given to any student holding a baccalaureate degree or a degree in pharmacy, dentistry or veterinary surgery; but credit for work done may be given a student, he being then permitted to take equivalent electives, which the school shall provide. On and after July 1, 1905, each of the four years of the medical course shall be separate and distinct from the arts and scientific department of a university or college, and no student shall be permitted to be a matriculate in another department of a university or college. One year's work in any subject of a high school or academic course is defined to mean a series of daily recitations of forty-five minutes or more in time for each week of a school year of not less than thirty-six weeks. With this placing of the standard there will remain the long struggle to bring the members of the association up to an actual and not a

theoretic obedience, and the securing and retaining as members those colleges at present bound by history and policy to the lower grades of qualification.

Surgery Gone Clean Daft.—In a leading editorial of a prominent medical journal we read:

Who will say that Mayo, that master of American surgery, is not a true prophet when he proclaimed that "We as externists shall soon be able to say to the internist, 'Send to us your intractable cases of neurasthenia, of hysteria, of confirmed gastric irritability and dyspepsia and we will at the end of a simple and virtually safe operation hand you the excised ulcer which you were unable to cure, and which was the causative factor in the condition.'" When that time comes, and come it will, the surgery of the stomach will have reached its goal.

The corollary of all this for the general practitioner is that he should make up his mind that those of his patients who have vague gastric symptoms which do not respond to rational internal treatment may not be longer left to their own devices. Such people usually have ulcers of the stomach or duodenum. Unless the practitioner wishes to take upon himself the responsibility of leaving within that patient what is now recognized as the paramount cause of malignant disease as well as many other incurable conditions he will consult a surgeon and advise his patients to submit to a harmless exploratory investigation, which, in an increasing number of cases, will end in absolute relief by operation.

Amazed disgust cannot find words strong enough to designate properly the folly of such advice. If ever the general practitioner so far loses his head as to be guilty of such criminal nonsense, he will find an outraged professional and public sentiment which will give him and his crazy surgical colleague short shrift.

The Power for Good of City Health Boards.—The grand work of Dr. Munn, of Denver; Dr. Reynolds, of Chicago; Dr. Wende, of Buffalo, and others, has been followed by the most noteworthy reorganization of the service by Dr. Lederle, of New York City. In linking the profession with the public life, in educating the masses to help in the eradication and prevention of disease, boards of health have a vast power, equaled by no other, in uplifting and effecting the progress of civilization. Far behind other cities in this respect, Philadelphia has now at last an opportunity of revolutionizing her sanitary government, and physicians and public are eagerly looking forward to the grand possibility of realizing the long delayed measures for placing the city's health business on a scientific and unselfish basis. Director Martin has one of the grandest opportunities ever put before a man. He has appointed a splendid board of advisers, promises freedom from bad politics, and a crusade of education which, if zealously and thoroughly carried out, will reduce the deathrate and redeem the city from medical barbarism.

Badges for Opium Smokers and Others—A government monopoly and a factory for the preparation of opium has been established at Fukien, China. Hereafter all opium smokers who wish to purchase the drug must obtain from this establishment badges which are of three classes, viz.: (1) Brass badge, which is for the government officials; (2) paper badge, which is for the gentry, and (3) wooden badge, which is for the common people. On these badges are written the names of the

NEW YORK.

No Patent Medicines to Children.—Governor Odell, of New York, has signed a bill making it a misdemeanor to distribute samples of drugs or patent medicines in such a way that children may get them.

Public Safety Proclamation.—Governor Odell has signed a bill abolishing the requirement of public safety proclamation in case of epidemic or public emergency. This was done to avert the necessity of influencing the public mind in case of smallpox and other perils prejudicial to public health.

Pollution of Public Waters.—Governor Odell has signed a bill prohibiting the pollution of public waters by commercial establishments or others in a manner detrimental to public health. The State Health Department is given jurisdiction and is to issue permits for the discharge of materials from factories into streams.

To Disinter 10,000 Bodies.—The Aqueduct Commissioners of New York are carrying out the contract to remove 10,000 bodies from three cemeteries on the Croton division of the Croton reservoir. This is for the purpose of preventing pollution of New York City's watershed. The entire work must be completed by October 1, 1904.

Child Labor Bill Signed.—Governor Odell has signed the bill which limits the work of any child between the ages of 14 and 16 years employed in any mercantile or business office, restaurant or apartment house to nine hours a day. Such child must present an employment certificate issued by the health commissioner or the chief executive of the health department of the city or town in which the child lives. The bill will not become operative before October 1.

Appropriations.—Governor Odell, of New York, has signed bills providing for the following appropriations: \$2,000 for the expenses of a commission to confer with a New Jersey commission on the construction of a sewer from that State emptying into New York bay; \$870,000 for repairs and improvements to the State Insane Hospitals; \$50,000 for the purchase of a site for a new State hospital for the insane in the north-eastern part of the State; \$2,700 for improvement to the Syracuse Institution for Feeble-minded Children; \$115,000 for the construction of a tuberculosis hospital at Ray Brook.

Few Mosquitos on Vessels.—Assistant Surgeon Grubbs, in charge of the government quarantine station, has inspected 82 vessels arriving from ports where the stegomyia is prevalent, and of these vessels 65 had no mosquitos on board during the voyage. The doctor's conclusions are that mosquitos can come aboard a vessel under favorable conditions when the vessel is not more than 15 miles from shore; the stegomyia can be carried from Mexican or West Indian ports to those of our Gulf States; they can board a vessel lying at anchor for a mile or less from shore, being conveyed by the open lighters used or flying aboard, and that a vessel moored a short distance from land may become infected with yellow fever.

State Bacteriologist Publicly Censured.—Dr. Follen Cabot, New York City's bacteriologist, has been ordered publicly censured and a record thereof to be placed upon the minutes of the Department of Health, by Dr. Ernest J. Lederle, president of the board. Dr. Cabot's offense, it is stated, consisted in accepting a fee for treating a woman for rabies who had applied to him in his official capacity. It is stated that the victim came from the country and was informed by Dr. Cabot that the cost for the virus would be \$50 and that there would be an additional fee. The allegation is that the doctor presented a bill for \$105. The question arises whether Dr. Cabot could accept a fee for work done under the department, especially in view of the fact that he had not asked permission to treat the patient privately.

PHILADELPHIA, PENNSYLVANIA, ETC.

To Abate the Smoke Nuisance.—An ordinance which has been introduced in the Philadelphia Councils regulates the use of bituminous or soft coal in the city and prohibits the burning thereof unless the place where it is used is properly equipped with smoke consumers. The measure, which becomes effective July 1, provides that a fine of \$50 be imposed for violations.

Eddyites Refused a Charter.—The Supreme Court of Pennsylvania recently rendered a decision confirming the findings of the lower court in regard to its refusal to grant a charter to the eddyites. The Supreme Court held that the State regulates the practice of medicine, and requires certain qualifications in its practitioners, while according to the eddyite teaching, no knowledge of anatomy, physiology, or pathology is required to treat disease, the fundamental principle of the eddyite teaching being that disease has no real existence. It was, therefore, held that the courts cannot furnish a charter sanctioning methods and practice at variance with the statutes, with public welfare, and with sound common sense.

SOUTHERN STATES.

Olfactory Crusade.—The *Baltimore News* is authority for the following: "Unless Mayor Howell interferes by veto, Atlanta will soon have an ordinance which will bar from street cars persons who carry odors. By 'odors' the Council means those scents which emanate from persons who work in factories, especially those devoted to the manufacture of guano, of which there are many located in Atlanta. But the ordinance is so broadly framed that the car conductor will have power to eject any person from whom emanates a smell offensive to any other passenger. The working people are demanding that it be vetoed."

Progressive Pharmacists.—At a recent State convention of pharmacists in New Orleans a number of measures were instituted to place the pharmaceutical profession on a higher plane and to instil greater confidence on the part of the medical profession and the public in general. A committee was appointed to investigate the adulterations and deteriorations of drugs and the sale of the same. A resolution was passed authorizing the committee to notify offending druggists upon the first offense, reprimand upon the second offense, and to report to the police authorities upon the third offense. This will surely secure a higher standard of preparations and greater care on the part of pharmacists and inure to the benefit of the public and the physician. It was recommended by the association that no pharmacists be allowed to practise in the State without previously passing an examination and being officially registered by the Board of Pharmacy, the custom heretofore having been to allow a pharmacist to practise in the State without an examination in case the board should not be in session. A higher standard of pharmaceutical education was demanded.

WESTERN STATES.

The Smoke Nuisance.—It appears that Chicago will suffer from the smoke nuisance this year as it has done in the past, as the new ordinance cannot become operative for lack of funds. A petition has been made for \$1,200 for carrying out the provisions of the ordinance. It appears that this cannot be granted.

Illegal Butterin Factory.—It is stated that a factory which was manufacturing illegal butterin has been seized in Chicago, with the complete manufacturer's outfit and a thousand pounds of butterin. The seizure was made by the revenue agent. Men operating the factory had purchased uncolored oleomargarin, upon which there is a tax of $\frac{1}{2}$ cent a pound. They were selling the product as creamery butter at 25 cents a pound.

Nurses Attack Correspondence Schools.—At the closing session of the Illinois State Association of Graduate Nurses a righteous attack was made upon those so-called schools in nursing which profess to teach by correspondence and by any other means, except actual contact with patients in hospitals. Such institutions were condemned, and an appeal was made to the public and to physicians to sustain the graduate nurses in their position.

Separate Schools Demanded for Crippled Children.—The Board of Education of Chicago is contemplating a plan to build separate schools for crippled children, who under present conditions are obliged to climb stairs, and in many instances are subjected to the continual ridicule of their more fortunate playmates. The erection of three separate schools, one for each side of the city, is declared to be an imperative necessity. It is estimated that these buildings will cost \$45,000.

Health of Chicago.—According to the Bulletin of the Chicago Health Department there were 2,628 deaths recorded for the month of April. This represented only partly the amount of sickness during the month. It is announced that not since the year following the great fire of 1871, when the larger proportion of the population was crowded together in hastily improvised barracks, or in quarters far beyond their normal capacity, and when thousands came to the city bringing with them all manner of disease, has there been such a prevalence of the graver maladies. The 756 deaths for April, 1872, represented an annual mortality rate of 25.20 per 1,000, while the rate of the past April represents only 16.96 per 1,000. There were 604 deaths caused by pneumonia and only 233 by pulmonary tuberculosis. This is an excess of 113.4% of pneumonia over tuberculosis deaths, and although the deaths from tuberculosis have increased 30.4% over those of April, 1902, the deaths from pneumonia have increased 41.1%. The Health Commissioner again urges that the greatest care should be taken to collect and destroy the sputum of pneumonia patients. Four deaths are reported as due to the exertion of long standing in the taxpayers' line. During the two weeks ended May 2, there were 20 deaths from diphtheria, but only six cultures showing the diphtheria bacilli were sent to the laboratory. This indicates a neglect by physicians of an essential means of diagnosis. Investigation of these deaths shows that they were either due to mistaken diagnosis or to dilatory or imperfect administration of antitoxin. Only two typhoid reactions were found in the laboratory during the week. The bacillus of influenza still predominates in the cultures sent to the laboratory.

FOREIGN NEWS AND NOTES

GENERAL.

Widows of Doctors Remembered.—In his last will Dr. Ladislaus Jascinski, a leading physician of Lemberg, Galicia, bequeathed £13,000 to a fund for assisting widows of doctors, and ordained at the same time that not more than eight shillings should be spent on his funeral. His numerous orders and medals of distinction he had given away the day before his death to a hostler and a postman.

Many Die from Plague.—An exchange states that 33,000 persons are dying each week of plague in India, according to a report from Consul-General Patterson, at Calcutta. On account of the opposition of the native population to the enforcement of laws of sanitation, it is difficult to prevent the spread of the disease. In Calcutta the deaths have been confined to the native quarter, and no cases have occurred in the European quarters, where the laws of sanitation are enforced.

GREAT BRITAIN.

The Blind Receive Their Sight.—It is stated that a man 30 years old and blind from birth has had his sight restored by an operation for cataract at a Glasgow ophthalmic institution. The first thing the patient actually perceived was the face of the surgeon. The first time he saw yellow it made him feel sick; the first sight of red gave him pleasure.

Artists Poisoned.—Artists in London are making complaint that the new solid Rafaelli oil colors are deleterious to health. It is asserted that numerous cases of blood-poisoning have been due to this cause, and that the use of these paints caused W. Padgett's death. It is stated by way of explanation, however, that the Rafaelli paint contains neither more nor less poisonous material than the ordinary oil colors, and that the cases of poisoning have been due to neglect on the part of those using them. No painter should think of using his unprotected hands to rub the oil colors into the canvas, as has been done with the Rafaelli sticks.

CONTINENTAL EUROPE.

Adulteration of Wine.—A prominent manufacturer of wines in Berlin has been found guilty of adulterating his manufactured product and sentenced to pay a fine or be imprisoned. Witnesses from among his employes testified that he used tannic acid, gelatin, and isinglass mingled with Greek wines of the cheapest grade.

Rabies.—The Council of Hygiene for the Seine Department has made its report on rabies for the year 1902: 1,600 persons were treated in the Pasteur Institute against 1,321 in the previous year; but 3 deaths occurred as against 12 in 1901 and 10 in 1900; and 472 animals were reported as suffering from rabies in 1902 as against 846 in 1901. The Council states that the conditions with reference to rabies were never more favorable.

Germans to Combat the New Disease.—From Berlin comes the news that the investigations which have been carried on by the government relative to the tropical worm disease which has attacked 20,000 miners of Westphalia, have shown that only those who are shut out from the sunlight are affected. The disease frequently proves fatal. One hundred and fifty doctors especially trained have been appointed by the government to combat the condition.

OBITUARIES.

Eben J. Cutler, at Cleveland, Ohio, April 28, aged 65. He was graduated from the Cleveland Medical College in 1866. He was a lecturer on surgical pathology and minor surgery in the Cleveland Medical College, and he served two terms as a member of the health board.

Lucius C. Herrick, in Cleveland, Ohio, April 30, aged 63. He was graduated from the University of Vermont, Burlington, in 1864. He served as an assistant surgeon during the Civil war.

D. S. Chamberlain, of Lyons, N. Y., aged 65. He served as surgeon during the Civil war, and afterward assumed charge of the Soldiers' Hospital at Syracuse.

Samuel G. Dearborn, of Nashua, N. H., May 3, aged 76. He was graduated from the Dartmouth Medical College, Hanover, in 1850.

W. L. Funderburg, of Gadsden, Ala., May 12. He was graduated from the Southern Medical College, Atlanta, Ga., in 1883.

M. T. Alexander, of Apalachicola, Fla., May 8. He was graduated from the Jefferson Medical College, Philadelphia, in 1877.

Edwin Ellis, of Ashland, Wis., May 3, aged 78. He was graduated from the New York University in 1846.

Archibald Taylor, of New York City, died at Somerville, N. J., May 12, aged 42.

Samuel A. Gayley, of Philadelphia, died at Kensington, Md., May 15, aged 80.

William Johnstone, of Washington, D. C., May 7, aged 50.

Solomon H. Holbrook, of Salem, Mass., May 13, aged 70.

SOCIETY REPORTS

SIXTH TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Held in Washington, May 12, 13 and 14, 1903.

[Specially reported for *American Medicine*.]

Sessions of the Congress.

FIRST SESSION.

The president, W. W. Keen, was in the chair, and made an announcement in reference to the Major Reed memorial.

Symposium on the Pancreas and Pancreatic Diseases.

E. L. OPIE (Baltimore) read a paper on the anatomy and histology of the pancreas. This will appear in a future issue of *American Medicine*.

The Physiology and Physiologic Chemistry of the Pancreas.—R. H. CHITTENDEN (New Haven) referred to the many abnormalities that occur when the pancreas has been extirpated. Bodies more or less toxic are formed, and he believes that the cells of the pancreas had several more peculiarities of composition than one realized. He referred to the synthetic action of the pancreatic ferments upon glucose, and claims that diet had much to do with the formation of enzymes. He believes also that the pancreatic juices were very much modified by food, and that there were many deviations from the ordinary metabolic processes of the body when the pancreas was extirpated.

Etiology and Pathologic Anatomy of the Pancreas.—SIMON FLEXNER (Philadelphia) spoke of the relationship existing between inflammations and degenerations of the pancreas and diabetes. Commenting upon the production experimentally of hemorrhagic pancreatitis, he stated that certain forms of injury had been quite successful along this line. The nearest approach in the artificial production of hemorrhagic pancreatitis in man had been made by injections of natural gastric juice into the ducts of Santorini, inflammatory symptoms appearing with great rapidity. Demonstrable necrotic lesions appeared in the pancreatic cells in from four to six hours, but it is doubtful, in his opinion, whether the natural gastric juice of man ever gets into the pancreas and produces hemorrhagic pancreatitis. He did not believe that gangrenous pancreatitis is of itself a disease, but believed it to be a secondary condition grafted upon a hemorrhagic pancreatitis. He divided suppurative pancreatitis into two forms, first, where the abscesses are small and localized, and second, where they are large and diffuse. As regards spots of fat necrosis, they are frequently surrounded by a zone of hemorrhage, and their relation to the pancreas has long been suspected, although they probably depend upon the presence of pancreatic juice. He considers that fat necrosis occurs, not only where the pancreas is in a state of acute inflammation, but also in cases of chronic inflammation.

Symptomatology and Diagnosis of Pancreatic Diseases.—REGINALD H. FITZ (Boston). This paper will appear in a future issue of *American Medicine*.

Injuries and Inflammatory Processes of the Pancreas.—JOHN VON MIKULICZ-RADECKI (Breslau) laid considerable stress upon the topographic relations of this organ. He mentioned two methods of exposing the pancreas, first, transperitoneally, and secondly, retroperitoneally. He believed that operations upon the pancreas were more dangerous than those upon any other abdominal organ, due to the fact that the general condition of the patient is usually so low. He collected 80 cases of operations, of which 41 were fatal. Of the 80, 37 were drained. In operating he prefers to make the incision in the median line and showed by statistics that all cases of pancreatic injuries not operated upon died, while of those operated upon, many recovered. He urged early operation in these cases, claiming that far better results were secured than by waiting until abscesses formed. He believed that most cases die in the acute stage, and that the subacute is most favorable for operation. He mentioned four points in favor of early operation, but believed that the operation in all cases should begin as an exploratory incision.

Cysts, etc., of the Pancreas.—ROSWELL PARK (Buffalo) approved of Robson's six divisions of pancreatic disease. He mentioned two cases of obstruction of the pancreas by lumbricoid worms, and stated that he believed hydatid cysts of the pancreas were extremely rare. He believed also that injury has more to do with pseudocysts than with the true pancreatic cyst, the symptoms of the latter being mainly those of pressure. Fat in the stools and glycosuria in these cases is very suggestive. Differential diagnosis of pancreatic cysts must be made from at least 13 different kinds of cysts. The place of the incision depends upon where the tumor presents. Referring to drainage, he believed that this was often a life-saving remedy, and should be done posteriorly. In some cases he had observed that the discharge from the fistula increased when the patient became excited. He believed that cancer was most common at the head of the organ, and spoke of some which attained a great size. He considers that medicinal treatment must be sympto-

matic, but claimed to have gotten good results from operating, reporting eight recoveries out of 16 cases. He referred briefly to tuberculosis and syphilis of the pancreas, and advised operation when in doubt.

Discussion.—CHARLES C. STOCKTON (Buffalo) discussed these papers; he stated that the question of diabetes in association with pancreatitis did not seem to be by any means settled, as there still seemed some reason for believing that diabetes may exist without ascertainable disease of the pancreas. One point upon which he laid considerable stress was polyuria. In his experience there are many cases in which there is relatively a large amount of sugar without corresponding increase in the quantity of urine, while in other cases there will be considerable urine with very little sugar. He mentioned a case which had been operated upon for a cyst of the pancreas, in which glycosuria appeared a short time afterward. A year later this was considerably increased, and a few years afterward developed into a distinct diabetes. He mentioned the fact that physiologists have found that the secretion of the stomach acts as a normal stimulant to the secretion of pancreatic juice, and that if the stomach secretion is diminished the secretion of the pancreas will also be, but clinically this is not the case. Where there is a disturbance of gastric juice the intestinal digestion will be disturbed to some extent. He concluded by asking for a little delay in accepting the classification which had been suggested by Dr. Robson, although it had been favored by Professor Mikulicz and Dr. Park. HERBERT U. WILLIAMS agreed very largely with what Dr. Stockton had said, and commented upon the fact that in some respects our knowledge of pancreatitis and fat necrosis is very unique. He insisted upon the importance of fat necrosis in diagnosis, and considered that this information was easily obtained by the use of the microscope. He attached considerable importance to this information, and urged the wide circulation of its value. He dwelt briefly upon the experiments of Dr. Wells, and in referring to hemorrhagic pancreatitis mentioned the fact that it was long ago suggested that the action of the pancreatic juice upon the bloodvessels might account for the hemorrhage in at least some cases. He made reference to his recent experience in endeavoring to prepare the Kaiserling preparations for two specimens. His results were extremely poor, and the color did not materialize, which in his opinion may possibly have been due to the action of the pancreatic juice. He agreed with Dr. Flexner as to the causation of acute pancreatitis, and added traumatism to the list of causes, as well as catarrh extending from the duodenum or the bile ducts. He mentioned that one often finds areas of fat necrosis at autopsies, and that sometimes these areas are associated with areas of hemorrhage. MAURICE H. RICHARDSON (Boston) said that acute lesions of the pancreas are very unusual. In 7,000 laparotomies at the Massachusetts General Hospital but six cases have been operated upon for acute pancreatic lesions; all fatal. The disease is as fatal even though operated upon early as it ever was, though death ensues later. In Richardson's two acute cases death followed after four weeks' drainage, the pancreas sloughing and escaping piecemeal. The lesion seems essentially fatal in infections apparently total. Patients surviving long enough for well defined and protected abscesses have a better chance. Three hospital cases have survived. In several laparotomies Richardson has seen throughout the abdomen evidence of old healed, disseminated, fat necrosis without abnormalities in the pancreas. In operative wounds of the pancreas no bad results had followed. These wounds accompanied resection of the pylorus and operations involving the pancreas, but the number is small. The aseptic lesions of the pancreas have apparently a small mortality after operation. Five patients with cysts have all survived drainage, and one infant recovered from total extirpation of a large cyst supposed to be pancreatic. In the other cysts there was discharge of pancreatic fluid for years. Cancer of the pancreas has been the indirect cause of death in many explorations and cholecystotomies for jaundice. Patients with jaundice and cholelithiasis associated with benign enlargements of the pancreas have, after removal of gallstones and drainage through the gallbladder, wholly and permanently recovered. By far the larger number of operations affecting the pancreas have been of this kind in Dr. Richardson's experience. In none of these cases was there any evidence, except by palpation, of pancreatic disease, for all have recovered. To this condition the perhaps unjustified term "chronic pancreatitis" has been used. For the successful surgical treatment of acute pancreatic affections, if successful treatment is ever possible, much more must be known of the very earliest symptoms of these affections. B. S. A. MOYNIHAN (England) agreed with most of what the previous speakers had said, and claimed to have operated on 15 cases of chronic pancreatitis, of which all recovered. One of the cases was particularly interesting on account of the marked polyuria, amounting to 80 or 90 ounces daily—no sugar; more than half of the gland was affected. He drained the gallbladder for some time and then did a cholecystenterostomy. The patient progressed satisfactorily, but five months ago he developed glycosuria, and is now dying of diabetes. The second case was also very interesting, and was one in which the diagnosis had been made of chronic pancreatitis, and in which a calculus was found in the pancreatic duct. On opening the abdomen he removed the stone, which was found to be composed of calcium carbonate. He believed that this was the first occasion in which

pancreatic stone was diagnosed and found on operation. He admitted having had a small amount of experience with acute pancreatitis, and had only been able to find seven or eight cases, two of which were associated with cholelithiasis. One recovered without operation, but the other died.

[To be continued.]

AMERICAN SURGICAL ASSOCIATION.

[Specially reported for *American Medicine*.]

The Contributions of Surgery to Internal Medicine: The Presidential Address.—MAURICE H. RICHARDSON (Boston) spoke of the great opportunities which surgical exploration had afforded in the study of internal diseases, especially in their earliest stages. He had been impressed by the importance of noting accurately all variations from the normal, not only as shown in the lesion for which the operation was undertaken, but in the condition of contiguous structures. Laparotomies should demonstrate not only the exact cause of previously existing symptoms, but, so far as possible, they should explain symptoms developing after convalescence and depending upon abnormalities of viscera other than those operated upon. Surgery affords in many diseases the only opportunity for exact observation. In the frequently fatal lesions the conditions are more accurately described during life than after death; in the lesions of small mortality existing conditions can be described only during life. The great multiplication of laparotomies has not only added enormously to our knowledge of internal diseases, but it has increased our skill in the interpretation of symptoms. Surgery is the *control* of diagnosis. It has taught us to be cautious, to doubt positive opinions, both as to present conditions and as to future possibilities. Surgery has shown time and again its efficacy in apparently inoperable cases as well as its impotence in the apparently operable. By broadening the field of operative treatment surgery has encroached upon medicine. But if it has shown the inefficacy of medical treatment in one class of cases it has also shown the inefficacy of surgical in another class and it has added greatly to the scientific accuracy with which medical treatment may be directed. Surgery has, furthermore, given extraordinary opportunities to the physician for the study of internal processes, both normal and abnormal, so that his deductions may now be based upon facts rather than upon theories. In conclusion, Dr. Richardson said: "The surgeon, then, in his opportunities for observation and study, has contributed vastly to our knowledge of internal disease, especially in its early stages. His explorations demonstrate truth and control opinions; they perfect observations, and, in showing the value of deductions, teach their weight; they prove the interdependence of symptoms upon lesions, and of lesions upon symptoms; they demonstrate the falsity of some inferences and the truth of others. Accumulated experience will show these things so clearly that in time the diagnosis of the clinician will approach the accuracy of scientific demonstration. In therapeutics surgery has shown what surgery can do and what it cannot do, as well as what medicine can and cannot do. Surgery will show still more clearly its own limitations, as well as the limitations of clinical medicine. Working together it seems not impossible that in the near future there will be no borderland between them. It will then have been demonstrated that internal diseases, even some of those now regarded as hopeless, will, by surgical or by medical therapeutics, or by both, be delegated to that class of brilliant achievement to which now belong appendicitis, gallstones, and internal hemorrhage."

The Toilet of the Peritoneum in Appendicitis.—GEORGE R. FOWLER (Brooklyn). This will appear in a future issue of *American Medicine*.

Operations Upon the Stomach, with Special Reference to the Toilet of the Peritoneum.—A. VAN DER VEER (Albany) felt that much of the success in operations in this region was due to the care exercised in this direction. The abdominal contents should be handled as little as possible; traumatism should be avoided, and the peritoneum should not be soiled with secretions from the mucous surfaces, which are fruitful sources of infection. The importance of drainage, especially in operations on the posterior portion of the stomach, was emphasized.

Toilet of the Peritoneum in Tuberculous Peritonitis.—A. OCHSNER (Chicago) after giving a careful review of the literature and his personal experience upon the subject summed up as follows: 1. In the absence of ascitic fluid in the peritoneal cavity, the diseased tissues may be removed with safety if the section is made entirely in healthy tissue. 2. In the presence of ascitic fluid the latter should be evacuated and the abdominal cavity drained. 3. Great care should be exercised in making the intraabdominal examination not to cause any abrasions. 4. Adhesions should not be disturbed. 5. The less the tissues are manipulated, the better will be the results. 6. Manipulations of the infected pelvic organs—uterus, ovaries, fallopian tubes—is less harmful than manipulation of the infected intestines.

Septic Phlebitis of the Roots of the Portal Vein, and on Pylephlebitis, Together with Some Remarks on the So-called Peritoneal Sepsis.—ARPAD A. GERSTER (New

York) went very fully into the literature on the subject and reported several cases. He believed the important points in diagnosis were: 1. The presence or precedence of an infectious process involving the abdominal contents. 2. The presence of pyemia. 3. The implication of the liver. The prognosis, while very bad, is not always absolutely hopeless, but early diagnosis and prompt operation are the only safeguards.

Toilet of the Peritoneum in Typhoid Operations.—R. H. HARTE (Philadelphia) stated that owing to the desperate condition of the patient, it is necessary that the operation be rapid and thorough, both as to the complete elimination of the septic and extraneous matter and the closure of the wound. He laid particular stress upon the advantages of thorough irrigation and drainage, preferably by means of a large piece of gauze carried well down in the pelvis over which is placed a liberal gauze dressing. The operation should be followed by douching with normal salt solution, and excision of the ulcer is not advisable in most cases on account of the prolongation of the operation.

The Toilet of the Peritoneum in Appendicitis.—S. H. WEEKS (Portland, Me.) stated that the method pursued must be according to the individual case, if no pus is present drainage need not be established. Where there is a circumscribed abscess, care should be taken not to infect the general peritoneal cavity by forcible irrigation. The wounds and pus cavities should be thoroughly cleansed with gauze pads wet with sterile salt solution and hydrogen dioxid, and the abscess cavity packed with sterile gauze. In that class of cases where the infection has permeated the whole abdominal cavity, the contents must be thorough cleansed and drainage established.

Toilet of the Peritoneum in Gunshot Wounds of the Stomach and Intestines.—GEORGE TULLY VAUGHN (Washington, D. C.) emphasized the absolute necessity for drainage and thorough cleansing of the abdominal contents. He divided the cases into two classes: 1. Those without peritonitis: (a) Without extravasation of visceral contents; (b) with extravasation of visceral contents; (c) with considerable blood in the peritoneal cavity or incomplete hemostasis. 2. Those with peritonitis: (a) Local peritonitis; (b) general peritonitis.

Treatment of the Peritoneum in Spreading and Diffuse Peritonitis.—JOSEPH A. BLAKE (New York) considered the purulent form of the disease under the following classifications: 1. Cases of abscess in which there is a localized collection of pus with limiting adhesions. 2. Cases with spreading peritonitis, in which there is no limitation of the process by adhesions or gravitation, but in which the limits are ascertainable. 3. Cases of general peritonitis, in which no parts of the peritoneum, possibly excepting the lesser sac, can be demonstrated as free from the invasion. The treatment which has given the best results in his experience is as follows: 1. Early operation. 2. Lavage of the peritoneum with large quantities of saline solution. 3. Closing of the peritoneal cavity without drainage, unless the latter is absolutely indicated by the presence of nonabsorbable amounts of necrotic material. Appended to the paper was the report of a large number of cases.

Discussion.—JOHN C. MUNRO (Boston) referred particularly to Gerster's paper, and laid stress upon the chill as being a very important symptom. The uniform enlargement of the liver was dwelt upon, and also the tendency of the condition to become chronic. He claimed that the appetite is ravenous in most cases and the emaciation tremendous, although the sensorium is rarely clouded. Irregular jaundice was looked upon as an important symptom, and one very often overlooked by the average practitioner. Lymphangitis, it was claimed, is often associated with other symptoms, although frequently is present by itself. In the author's opinion, subphrenic abscesses are more apt to be secondary to liver abscesses, although they may come from the retroperitoneal lymphangitis, and sometimes by direct extension from the liver. GERSTER, in closing, referred to two cases which were mentioned in his paper, in each of which the phlebitis was particularly demonstrated. They were cases of appendicitis, and in each case he searched for the veins and turned out the thrombi. The veins containing the cylindrical masses are the thrombosed veins, and are frequently present in places that are not being explored. He looked upon this procedure as a part of the peritoneal toilet in appendicitis, and considered that it should be attended to whenever possible.

Simplified and Improved Operation for Trigeminal Neuralgia by Intracranial Neurectomy, with Interposition of Rubber Tissue, and Without Resection of the Gasserian Ganglion.—ROBERT ABBE (New York) after noting the well recognized dangers of ganglion resection, viz., hemorrhage, prolonged operation, damage to brain substance by retractors, secondary abscesses and infected meningitis, quoted Lexer's statistics of 33 deaths from 201 cases collected from all literature, of which 17 died from the operative procedure and the others from above mentioned causes, in several of which the cerebral damage was shown postmortem. After having operated for many years by the usual intracranial method, with 1 death from shock, he had adopted a modified method in 8 cases during the past 7 years, which he regarded as a distinct improvement. Satisfied from study of the nerves removed extensively anterior to the base of the skull that the disease is, in almost all cases, an inflammation of the nerves infected in the bony channels adjacent to the antrum and teeth, he regards the temporary cure by nerve resection within the skull as

proving that ganglion resection is uncalled for. The recurrence being unquestionably due to reunion, he prevents that by interposing a small piece of sterile rubber tissue between the ganglion and the outlets of the second and third branches, which are all he ever resects. He has used this method in eight cases with the same excellent results as in ganglion resection. Numerous experiments on rubber tissue implanted on the brain of rabbits, as well as outside the dura mater and in various other places, showed that it always remains sterile and is never changed in texture. Therefore it remains as a permanent barrier to reunion in the human subjects in all of which it has remained for varying periods up to seven years, the first patient being still absolutely free from pain and having been formerly one of the most inveterate cases of "tic." The operation was further simplified by preliminary ligation of the external carotid artery in the last three cases, with resulting freedom from hemorrhage and reduction in time of operation fully one-half. The complete operation consists in ligation of the external carotid in the neck; a straight incision from just behind the middle of the zygomatic arch; upward and slightly forward in the temporal fossa; splitting the temporal muscle and scraping it widely from the bone; enlarging to one and a half inches a small trephine opening, and lifting the brain and dura mater from the middle fossa; exposing and resecting a half inch of the second and third branches in front of the gasserian ganglion; spreading a rubber tissue strip an inch and a half long over the openings and pressing it down on the bone until all bleeding stops; letting the ganglion settle down on the tissue and closing the wound.

Discussion.—GEORGE R. FOWLER (Brooklyn), referring to the preliminary hemostasis, mentioned a method introduced by himself some years ago of ligation of the external carotid which materially lessened hemorrhage in operations for intracranial work. He spoke favorably of the Abbe method, although out of two cases in which he had employed it only one did remarkably well, and the other just the opposite. However, he was able to account satisfactorily for the failure in the second case, as the tapes around the carotid artery were allowed to press upon the jugular vein. GEO. E. BREWER (New York) mentioned one case in which he employed the Abbe method, with only a fair degree of success so far as hemostasis was concerned, but the intolerable neuralgia from which the patient suffered for years was completely cured. His experience in ligation of the external carotid has been that the hemorrhage was venous and very hard to control. He believes that in nearly every case it is due to some tributary of the cavernous sinus, and it has not seemed to him that external ligation would control such a hemorrhage as easily as it would from a meningeal artery. ABBE, in closing, stated that as some of the most inveterate cases had been cured by his method he was satisfied that the disease was not in the ganglion. He laid stress upon the fact that an examination of the nerve before it has been handled at all will often show spots of inflammation along the sheath, and it has seemed to him that these were the original sites of the neuralgia, from which the disease worked its way back to the ganglion.

Single Ulcer of the Urinary Bladder Nontuberculous and Nonmalignant, with Report of Cases.—GEORGE E. ARMSTRONG (Montreal, Canada) reported the case of a man, aged 21, without venereal history and of temperate habits, in whom the attack came on suddenly without known cause, accompanied by the following symptoms: (1) Pain at the end of the penis about the corona and on the dorsum, just before micturition, and generally so severe as to necessitate the administration of morphia; (2) frequent micturition, and (3) loss of expulsive power. The patient died eight months after the onset, operation having been performed in the meantime, and autopsy showed acute miliary tuberculosis of both lungs, the left adrenal, spleen, kidneys, left ureter, and kidneys and bladder. The second case occurred in a boy, 12 years of age, and was cured by injections of silver nitrate. He went fully into the literature on the subject, and stated that he believed the three chief causes of single ulcer of the bladder to be infection, thrombosis, and syphilis. The chief symptoms are pain, frequency of micturition, and presence of small quantities of blood in the urine. The prognosis is good if recognized early, and he believed operation gave as good chances of relief as for ulcer in the stomach.

Discussion.—WILLIAM L. ESTES (Bethlehem, Pa.) desired to add another case to those reported by Armstrong. The patient was a man of 50, who was operated upon with the idea that he was suffering from septic peritonitis, but instead an ulcer of the bladder was found closely resembling an ulcer of the stomach. The result of the operation was that the man made a good recovery.

A Case of Enchondroma of the Spinal Column.—H. R. WHARTON (Philadelphia) reported the case of a man who suddenly felt something give way while lifting a casting, necessitating stopping work for several months, and a year after the injury a tumor developed at the junction of the vertebra with the sacrum, gradually increasing in size and involving several of the lumbar vertebra. The tumor was excised and two weeks after the operation the patient left the hospital and made a good recovery. He gave a report of the pathologist upon the substance of the tumor and a careful review of the literature upon the subject.

[To be continued.]

AMERICAN GYNECOLOGICAL SOCIETY.

[Specially reported for *American Medicine*.]

FIRST SESSION.

Treatment in Cases of Pregnancy Complicated with Fibroid Tumor.—HENRY C. COE (New York) said that fibroid tumors complicate labor because they interfere in the normal development of the pregnant uterus, may cause distressing symptoms and jeopardize the life of the fetus and mother. Each case must be studied separately and treated according to indications, and these interpreted according to the experience and bias of the surgeon. There are three "semesters" of pregnancy: 1. Up to the fourth month. Here empty the uterus if the tumor is a large interstitial fibroid or a broad-ligament tumor, or if situated in the lower uterine segment, or if an impacted intrapelvic growth. If small tumors are believed to promise danger remove them through the vaginal route if possible, though this will probably terminate the pregnancy. Subserous and pedunculated tumors may be removed by enucleation through the abdominal route. Impacted growths should be freed, under anesthesia, and kept free until the distending uterus will keep them out of the pelvis. 2. From the fourth to the seventh month. The location, size and variety of the tumor are important. Pain and pressure-symptoms are indications for treatment. If there are large interstitial growths we may empty the uterus but the danger of hemorrhage is greater than if done earlier. We may enucleate by the abdominal route. It is a question whether we should remove small multiple growths or wait till the child is viable. In some cases it is wiser to keep the patient under observation, trusting to her safe delivery at term. 3. After the sixth month. We should endeavor to obtain a viable fetus if the mother's life is not actually jeopardized. If growths are subserous, not too large and favorably situated she can probably be safely delivered at term. After the eighth month the Porro-Cesarean, or a complete hysterectomy, be done, *i. e.*, before term. His conclusions are that conservatism should be the rule in these cases, as in other gynecologic procedures, but not carried to extremes. We should discuss marriage and a subsequent risk of pregnancy with women who have fibroids. The time for conservative surgery is often before there is an opportunity for pregnancy. In general, if a fibroid tumor is to be regarded as a menace to life before pregnancy the condition is still more grave after pregnancy. It is the duty of gynecologists to ward off the danger.

Myomectomy or Hysterectomy.—JOSEPH T. JOHNSON said the conditions calling for such a decision are fortunately rare. Few, if any, have had sufficient experience with such cases as to enable them to speak with authority. He has had experience in but two cases. In one he did a vaginal hysterectomy when the fetus was in the fifth month, recovery of the prospective mother was uneventful; in the other he did a myomectomy on a uterus four months pregnant, and the woman was normally delivered five months later. Our aim should be to conserve the uterus if possible with safety to the mother, and whether hysterectomy or myomectomy shall be done depends on the conditions which each individual case presents. We are doing more myomectomies than formerly. Every case is a law unto itself. Many pass through the danger period safely, but when complications arise they are serious. Entire danger does not end with delivery—subinvolution may be complicated. Medical and electrical treatment are useless. If surgical treatment is resorted to in subserous and interstitial growths, it should be myomectomy. Many operations have been reported on the pregnant uterus without disturbing the fetus. Properly done, this is a relative safe procedure.

Pregnancy and Labor Complicated by Myomas.—GEORGE T. HARRISON quoted, without approval, Hofmeier as saying that myomas have little or no influence on fertility and sterility. The speaker was of opinion that conception is often rendered difficult and at times impossible by the presence of these growths. If conception has occurred and the tumors are small they may do no harm; if large, they are more dangerous and may cause abortion or complicate delivery, or malnutrition and even gangrene. The diagnosis may be difficult if the fibroid be large and soft, and pregnancy occurring late in life it may cause serious pressure-symptoms. Myomas may cause serious complications in pregnancy, labor, and the puerperal period, but this is of infrequent occurrence. The subserous variety usually produce no trouble, unless pedunculated and twisted. An interstitial myoma, if situated near the cervix, may offer serious obstruction to labor, and if multiple may markedly impair the contractile power of the uterine muscle. No rule, however general, can be laid down for treatment. Each case must be studied and interpreted separately. Treatment must in the main be expectant. All the conditions must be watched carefully when myomas are known to be present, and the attendant be governed accordingly.

Discussion.—J. CLIFTON EDGAR, with intimate knowledge in some 17,000 confinement cases, had not known of dystocia occurring in more than half-dozen as a result of uterine fibroid growths. He is of opinion that the dangers from this complication are exaggerated. He knew of three cesarean sections for the relief of dystocia from fibroids, and in each case the mother died.

Bisection of Tumors and Uterus in Abdominal Hysterectomy.—GEORGE H. NOBLE said the operation of hysterectomy when dealing with a large fibroid uterus is difficult for want of space in which to work. The best way to avoid this difficulty is to bisect both uterus and tumor after raising the uterus out of the pelvis with strong forceps. The tumor can be quickly enucleated after turning the two halves of the uterus to one side, which halves can now be removed and the vessels ligated. The tissues in the pelvis are treated in the usual way after hysterectomy. We can do both panhysterectomy and supravaginal hysterectomy in this same general way. The advantages of this method are: Saving of time, prevention of hemorrhage, increased working space, easy manipulation, accessibility to blood supply in the deep pelvis, freedom from liability of injury to ureters and uterine arteries.

Discussion.—W. R. PRYOR said the bars to removal of these growths are asymmetry and distortion of the anatomy of the parts. Mobility is established by bisection of tumor and uterus and symmetry is secured by rolling out or enucleating the fibroids. He then always has a complete hysterectomy; this leaves no dead space.

Relation and Correlation Between Gynecologic and Nervous Affections.—CHAUNCEY D. PALMER enumerated a number of nervous affections often associated with pelvic diseases of women. Hysteria is often so associated, but more than 50% of the cases are unassociated with such pelvic diseases, and yet the continued presence of the latter often does produce the former. Chorea may accompany pregnancy, but it more often appears about the menstrual epoch in young girls. Various diseases of the ovary, such as prolapse, cirrhosis, cystic changes, etc., may be, at least so far as we can ascertain, the cause of hysteria and other nervous affections. Too many pelvic operations have been resorted to for the cure of nervous symptoms. The sexual organs play a very small part in nervous disorders of women. Exception may be made in dysmenorrhea, which may cause many nervous symptoms among young women, though not a few of these are psychic rather than pathologic in origin. A spasmodic type does exist, but treatment should not be by gynecologic operation.

Discussion.—HARRIS related the history of a young married woman, who, when pregnancy occurred, became morose, melancholic, and suicidal. The symptoms all disappeared after the birth of the child. During the second pregnancy, two years later, the same symptoms recurred, again to disappear after labor. At the request of her husband and self the tubes were sealed to prevent subsequent pregnancy. J. D. EMMERT stated his belief that habitual hysteria in the female is always dependent upon, or at least associated with, a lesion in the genital apparatus, and it almost always disappears with correction of the condition; especially is this true of lesions of the cervix. FORD said neurasthenia was sometimes assigned to pelvic disease. This is wrong. Neurasthenia is a condition and not a disease—in men as well as women. Operation never cures insanity. He had seen 75 cases operated upon with no benefit except that associated with the general improved condition of the patient. He believes nervous disorders follow lacerations of the perineum more frequently than lacerations of the cervix. GEHRUNG believed the metrorrhagia, menorrhagia, dysmenorrhea, and amenorrhea may cause serious mental disorders. We should repair organs and not remove them, and should prevent excessive menstrual flow when there is any tendency to mental disorder. J. T. JOHNSON said if we would conserve diseased pelvic organs and permit them to perform their normal function we would hear less of neurasthenia and other nervous affections. Poor elimination and poor circulation are the cause of many nervous disorders charged to diseased pelvic organs. G. T. HARRISON said we should study each case separately and fully. He had never been able to get any assistance from a neurologist. Insanity is rarely due to diseased pelvic organs.

SECOND SESSION.

The Etiology, Pathology and Treatment of Puerperal Sepsis.—HIRAM N. VINEBERG said: 1. Severe puerperal sepsis may be caused by a variety of pathogenic germs. The variety of germ found in the uterine discharge in a given case is no criterion of the severity of the case and forms no safe guide as to prognosis or as to the treatment to be adopted. 2. Bacteriologic examination of the blood is of little value, either from a prognostic or therapeutic standpoint. 3. The treatment of puerperal sepsis must be based chiefly upon the clinical history and physical signs of each individual case. 4. Wounds of infection in the perineum, vagina or cervix are to be treated on general surgical principles of irrigation and drainage. 5. Curetage is indicated when there are evidences of placental decidual residue in the uterus independent of the variety of bacteria that may be found in the uterine cavity. 6. In those rare cases in which adherent and sloughing placental tissue cannot be removed, either with the sharp curet or fingers, hysterectomy is indicated, providing the patient is not already moribund. 7. Hysterectomy is also indicated in septic endometritis, or infection of the placental site, so long as the infection is still limited to the uterus, and when the symptoms steadily grow worse in spite of uterine irrigations, with or without curettage and appropriate hygienic stimulating treatment. 8. In absence of the uterus the abdomen should be opened, and when feasible the purulent foci are to be drained and the uterus

preserved. If the uterus be studded with small abscesses, hysterectomy is indicated. 9. The abdominal is to be preferred to the vaginal route for hysterectomy. 10. If the infection passes from the uterus into one or other tube and sets up a violent grade of inflammation, the abdomen should be opened and the infected tube removed before a general peritonitis develops. 11. When the infection passes through the uterus and sets up a general peritonitis, a patient may occasionally be saved by a timely abdominal section and drainage. 12. In cases of parametric exudates the treatment should be of a conservative nature, and surgical intervention is indicated only when there are evidences of pus formation. 13. In obscure cases in which the pathologic lesion cannot be determined, and the symptoms are steadily growing worse, it may be advisable to open the abdomen to search for a hidden purulent focus, or for a circumscribed slough of the uterus. 14. The procedure proposed by Trendelenburg, and executed by him and others, of ligating the pelvic veins when they become infected and thrombotic, is worthy of further trial.

Discussion.—W. R. PRYOR stated that in his belief puerperal sepsis, especially severe cases, are always caused by the streptococcus. This germ varies greatly in its virulence. Notwithstanding the frequency of the streptococcus as the etiologic factor, it is found in the blood in only about 33% of puerperal cases. The curet should be employed rarely, if at all, in these cases, because a local injection may by this means be converted into a general infection. We should never do hysterectomy in puerperal septicemia, but it may be necessary in some instances when the infection is confined to the uterus. Experimental work done during the past six months showed that fluid and debris removed from the posterior culdesac in cases of puerperal sepsis almost always contained the streptococcus. Experiments made with iodoform gauze and with iodine during the same period convinced him of their great value in these septic cases. Rabbits injected with a lethal dose of streptococcus culture had their lives prolonged six times what it otherwise would have been by injecting an aqueous solution made by taking a saturated alcoholic solution of iodine and adding the same to water until a solution of 1-5,000 was made. He advocated the use of this drug locally and by injection in cases of puerperal sepsis. J. WHITRIDGE WILLIAMS thought bacterial examination of the blood of these patients is highly essential, even though at times it is negative. Blood examinations are less satisfactory, but they should be made. We have found that though the streptococcus may be found in the blood, the case is not necessarily fatal. The curet is harmful in streptococcus infection. He simply douches with salt solution. If it retains secundines and saprophytic germs are present he uses the finger to empty the uterus. The curet is indicated only after abortion. The field for operation in puerperal sepsis is limited to abscess in uterine wall, pyosalpinx, and very rarely a hysterectomy may be necessary. MATTHEW D. MANN said gonococcus infection after delivery occurs rarely. He reported a case in which the temperature ran from 107° F. to 108° F. for several days, finally going to 111° F. before the patient died. Bacteriologic examination repeatedly made showed no germ except the gonococcus. Iodine and iodoform gauze are valuable in streptococcus infection; also the silver salts given by inunction, and Credé's solution copiously given by injection are valuable in such cases. GILL WYLLIE said in our early experience with cases of puerperal sepsis they practically all died. Operation was instituted and many lives were saved. But now with improved methods of treatment, bacteriologic examination of the blood and the contents of the uterus, such operations as hysterectomy are rarely necessary. Our object should be to empty and thoroughly wash out the uterus several times if necessary. The patient being in the recumbent posture drainage from the uterus is deficient and a nidus for germ proliferation is formed. Empty with the finger if possible, otherwise with a small pair of forceps. E. P. DAVIS said we should empty pus when and wherever found. Bacteriologic examinations should be made to ascertain the form of infection to be dealt with. Hysterectomy is indicated only in those rare forms of adherent and infected placenta. Drainage with iodoform gauze loosely placed is indicated. Empty the uterus with the finger if it can be done, otherwise the very gentle use of a blunt curet in proper hands is practically without danger. He recalled two cases of puerperal sepsis caused by the colon bacillus, as proved by bacteriologic examination. McLEAN regarded the curet as dangerous. The uterus should be emptied, of course, but no injury should be done to the endometrium. He has been advocating iodine and iodoform gauze in these cases for 16 years. He saturates a cotton sponge with the comp. tr. of iodine and allows it to remain for a short time in the uterus. FRY said we should make a bacteriologic examination early, wash out the uterus and defer further treatment, unless very urgent, until the result of the bacteriologic examination is known. The curet is harmful and should not be used. Rubber gloves should always be worn by the medical attendant in these cases. ROBERT MURRAY said we should empty the uterus with finger if we can, with the curet if we have to. Thorough and repeated douching should be done to keep the uterine interior clean. H. J. BOLDT said bacteriologic examinations give us no indications whatever as to the line of treatment to pursue. He carries it out in all cases but has failed to achieve anything by it. HORACE WETHERILL said infection following abortion differs from that following

labor and requires a different treatment. The curet is indicated in these cases. For puerperal sepsis the alcoholic method of irrigation and rubber tubular drainage gives the best results. PRYOR said, in closing, that more women die now of puerperal sepsis than in the preantiseptic days.

Repeated Cesarean Sections on the Same Patient.—CHARLES M. GREEN stated that a second section had been done in eight instances in the Boston Lying-in Hospital, and in one instance a third cesarean section was done, both mother and child surviving. Hysterectomy should never be done in these cases unless some pathologic condition other than inability for spontaneous delivery be present. After a brief summary of the experiences of the Boston Lying-in Hospital with repeated cesarean sections, Green raises the question whether it is justifiable, in performing cesarean section for either an absolute or an elective indication, to remove normal organs or to resort to other procedures with a view to preventing subsequent pregnancy and the risk of a repeated section. The writer seeks to answer this question in the negative.

Discussion.—J. WHITRIDGE WILLIAMS agreed with view last expressed by the above writer except as to paupers, and with these he never does a hysterectomy in the first pregnancy, but ordinarily does in the second. E. P. DAVIS said a woman and her husband have a right to request that the woman be made sterile by hysterectomy at cesarean section; he has acceded to such a request and thinks it right. When the uterus is not removed an effort should be made to cause adhesions between it and the anterior abdominal wall, so that if a subsequent section be necessary the old scar may be entered and the operation be performed without entering the peritoneal cavity. I. S. STONE thought that induction of labor at, say the eighth month, should be considered rather than cesarean section at term, especially this in the country and remote from competent operators. FRY had in three instances refused to sterilize women by hysterectomy. Should sterilization be deemed wise resection of the tubes is preferable to hysterectomy.

Renal Decapsulation for Puerperal Eclampsia.—G. M. EDEBOHLS detailed a case in which convulsions were not relieved by delivery. Decapsulation of both kidneys was done 72 hours after the uterus had been emptied, with the result that convulsions ceased and the patient made a good recovery. Casts and albumin are not rapidly disappearing. His operation for eclampsia was the logical outcome of the numerous instances in which the writer has done renal decapsulation for chronic Bright's disease. From the results in the reported case and from those secured in chronic Bright's disease, which he has previously reported, the writer holds that a woman suffering from uremic convulsions of renal origin is entitled to the benefits of decapsulation whether pregnant, in labor, or in the puerperium.

Discussion.—J. T. HARRISON said it is the present belief that very few cases of eclampsia are of renal origin, the kidney changes are secondary and not primary. It therefore appeared to him that the operation had a very limited field of usefulness, but he believed it worthy of trial in appropriate cases. CRAGEN said that in 29 cases of eclampsia occurring at the Sloane Maternity Hospital there was but one death. He therefore doubted whether operation of any kind could show a lower mortality. G. M. EDEBOHLS, in closing, said Dr. Cragen's figures were not of value, because he did not give the number of cases of eclampsia of renal origin and only in these cases does he advise operation.

The President's Address.—In his address President JOSEPH E. JANVRIN paid a high tribute to the three members deceased since the last meeting, viz., Drs. JOHN BYRNE, T. G. THOMAS, and EDWARD W. JENKS. The main theme of his address was then dwelt upon, it being cancer of the uterus. A somewhat exhaustive review of the literature on the subject was given. Hysterectomy for malignant disease has become somewhat unpopular because too often done when the disease has progressed too far for hope of arrest. During the past 15 years, with selection of cases, the results are better. Cancer early is distinctly local and early operation gives the only hope of cure. Local irritation is probably a strong causative factor in producing cancer of the cervix. For this condition the entire uterus should be removed and a full inch of healthy vaginal wall below its junction with the cervix should be cut away. Whether the vaginal or abdominal route shall be chosen depends much upon the predilection of the operator. Care should be taken not to infect raw and bleeding surfaces of the wound with cancerous tissue. Many statistics were given concerning various methods of procedure and the results therefrom.

Carcinoma of the Cervix Uteri.—THADDEUS A. REAMY stated that spontaneous recovery from carcinoma does not occur. He detailed a series of cases in which undoubted recovery, lasting from 10 to 25 years, of two cases following removal of the diseased and adjacent tissues proves the curability of carcinoma of the cervix. It is principally local in origin, and if attacked in this stage can be cured. Women should be educated by the physician to report early any pelvic disorder from which they may be suffering, that appropriate measures may be instituted if malignant disease is found.

Primary Carcinoma of the Vulva.—REUBEN PETERSON reported in detail four cases, all operated upon, but recurrence and death occurred in three; the fourth was operated on but recently. It occurs mostly in the old. Some writers have

placed carcinoma of the vulva at 5% of the cases occurring in the genital apparatus, but the writer is of opinion that this percentage is much too high. Operative treatment must be early and radical if recurrence is to be prevented. In one of his cases enlarged inguinal glands removed at operation and subjected to repeated microscopic examination showed no malignant change, while in other cases the glands were found undergoing cancerous change. Pruritis was an early and persistent symptom in three of his cases. Pain was complained of in only one instance.

Pseudohermaphroditism.—J. RIDDLE GOFFE reported the case. The person was essentially a female. Photographs were shown illustrating the condition. At her request he removed the rudimentary penis, which was about three inches in circumference, preserved the skin thereof, made an artificial vagina, the lining of which was composed of the inverted skin of the penis. This was preferred to the other skin of the region on account of absence of hair follicles.

[To be continued.]

AMERICAN ASSOCIATION OF GENITOURINARY SURGEONS.

FIRST SESSION.

The Permeability of the Urethra for Certain Salts.—E. C. BURNETT (St. Louis) first discussed the new light thrown upon the diagnosis and treatment by the discovery of the gonococcus and its lesions. He then cited experiments performed on dogs and rabbits with argyrol 1% and 5% and also silver nitrate 1-3,000 and 1-1,500. Examination of the urethras showed that in all the experiments the silver salt had not penetrated the epithelial layer.

Discussion.—JOHN VAN DER POEL (New York City) spoke of the infection of the prostate in chronic posterior urethritis. That the posterior urethra is affected often in the first week of the disease and that the follicular and catarrhal forms of prostatic infection are more amenable to treatment than the parenchymatous form.

Specimen of Strangulated Testicle from Torsion of the Cord.—ARTHUR C. CABOT (Boston) emphasized the necessity of early recognition of the condition and initial symptoms. He reported a case in a male of 26, vigorous, well developed, and with no venereal diseases. He was suddenly seized with paroxysmal pain in the hypogastric region. The next day the pain increased and was referred to the testicle. On the third day the testicle was swollen with an appearance of an epididymitis. On the fifth day the tissues were edematous and the scrotum adherent. There was great pain; the temperature was 99°. At operation, on opening the tunica vaginalis a small amount of bloody serum escaped. The cord was found rotated from within, downward and outward, for one complete turn. There was no adhesion of testicle to tumor.

Discussion.—RAMON GUIERAS (New York City) cited a case in which on operating for a varicocele he found the vas deferens running from the external and posterior side of the cord, across the anterior surface to the inner and posterior side, giving a complete torsion of the cord and yet no symptoms. JOHN VAN DER POEL (New York) cited a case in which there was an undescended right testicle until the patient was 2 years old. When 21 the man began to have attacks of pain along the right cord to the testicle. The cord allowed one and three-quarter turns before symptoms of torsion were elicited, while the left cord allowed one turn. The case was fully reported before the genitourinary section of the New York Academy of Medicine.

Report of a Case of Complete Avulsion of the Scrotum, Skin of Penis and the Left Testicle.—ALFRED C. WOOD (Philadelphia) stated that the cause of injury was the patient's shirt being caught in a belt and his being carried around the shafting. The scrotum was entirely absent, and the skin of the penis dissected down to the musculocutaneous junction; the left testicle was torn off. At operation the left cord was ligated at the external abdominal ring and a new scrotum made by lateral flaps taken from the inside of the groin and brought together in the middle line. The denuded surface of the penis was allowed first to granulate and then skin was grafted on by Rundau's method. The patient recovered and has full use of his genital organs.

Discussion.—RAMON GUIERAS (New York) cited a case of an Italian with complete sloughing of scrotum. Four skin flaps were used in making an artificial scrotum, two above being taken from the upper side of the pubes and two below from the inner sides of the groin at the junction of the scrotum. The flaps were sewed together somewhat like the cover of a baseball.

The Conservative Treatment of Cases of Tuberculous Lesion of the Genitourinary Tract.—GEORGE CHISMEN (Boston) stated that the profession was divided into two classes, those who believe a prompt surgical interference and those who rely upon general measures alone and that each have published statistics of results but that both are open to a great source of error, *i. e.*, from premature claims for cures. He advocated the expectant treatment with good hygiene and tonics, and said that local applications and treatment often

aggravated the symptoms, particularly that of frequent micturition. He reports six cases of his own and also one of Lyman Wilbur (Leland Stanford University) and one of Herbert Moffit (San Francisco). Three of his cases were apparently of traumatic origin; one followed grip and one a stricture. Frequent micturition was marked in three cases, in which the bladder or kidney or both were involved but absent in the cases where scrotal contents only were involved, so long as the urethra was not invaded by instruments or irritants. The speaker gave as his prognosis that the cases will be of long duration, slow and that there is a good chance of ultimate recovery under general hygienic treatment.

Discussion.—OTIS indorsed the hygienic treatment, and advocated surgical treatment only when necessary, and said that then it should be radical. THORNDYKE (Boston) spoke of the increasing facilities for early diagnosis and opportunity for early operation, because of its presence and yet showing no symptoms. He emphasized that when palliative measures are necessary one should not be deterred, even though it is known that all the diseased parts cannot be removed.

A Case of Calculous Anuria.—ARTHUR C. CABOT (Boston) reported the case of a sailor, aged 57, subject for the past 15 years to attacks of pain in the right lumbar region, extending down to the penis. The pain was accompanied by nausea, vomiting, and bloody urine, and with each attack a small calculus was passed. Two years ago he had a couple of attacks of pain in the left lumbar region, extending to the penis, and with anuria for the 24 hours previous to operation. At operation an exploratory incision was made in right kidney. The kidney was found to be enlarged, double in size and dotted with milary abscesses. No stone was found in the kidney or ureter. The wound was closed with drainage. During the first 24 hours after the operation the patient passed 900 cc. of urine; during the second 24 hours he passed 1,500 cc. On the fourth day the urine ceased coming through the bladder and the drainage through the wound increased; later, the bladder working, the drainage was decreased. On the second day there were two slight attacks of pain; on the fourteenth the bladder was washed and two small stones were found; on the twenty-fourth day one small stone was found. Later a cystoscopic examination of the ureters showed the left ureter plugged with pus, and pressure over and along the ureter expressed a considerable quantity of pus into the bladder. Cabot considers that the exploration of the right kidney restored it to function.

Conservative Perineal Proctectomy: A Presentation of New Instruments and Technic.—HUGH H. YOUNG (Baltimore) first spoke of the problems that early presented and reported briefly eight of his early cases. Case I: The patient already had a suprapubic opening for drainage. A tremendous intravesical outgrowth of the middle lobe was enucleated through the suprapubic opening. In Cases II, III, and IV the hypertrophy was confined to the lateral lobes of the prostate. These patients were operated on by Alexander's method with both suprapubic and perineal openings. Cases V, VI, VII, and VIII were characterized by considerable median enlargement. He used the suprapubic route and with the assistance of the finger in the rectum was enabled to enucleate without injury to the urethra. He advocated Bottini's operation in men of 65 years and over and in those in poor physical condition. His principal objection to the perineal route was the necessity of an accompanying suprapubic opening, thus causing considerable hemorrhage, greater duration of convalescence, and development occasionally of suprapubic hernia. Other objections were the depth of the perineal wound and the inaccessibility of the prostate. For traction on the prostate to bring it down into the external perineal wound he devised an instrument consisting of two fenestrated blades attached to shafts, one of which revolves around the other. On introduction into the intravesical limits of the prostate lobes the blades are separated and are ready for traction to bring the prostate well down into the wound. Before giving the details of his operation he spoke of the anatomic relations of the ejaculatory ducts to the prostate and of the necessity of saving these ducts in order to preserve the sexual power and functions. In his operative technic the essential features are a median skin incision in thin subjects and an inverted V in fat or heavy ones. The apex of the inverted V being over the bulb, with the two lateral arms each 5 cm. long, extend down to half way between the anus and ischial tuberosities. He divides the central tendon and also the rectourethral muscle, opens the membranous urethra, inserts his instrument, and by traction draws the prostate down into the superficial wound. In enucleation he makes two convergent lateral incisions on each side of the middle line for nearly the entire length of the posterior region of the prostate, thus leaving a bridge of tissue containing the ejaculatory ducts. He enucleates first the lateral and then the median lobes. After enucleation he uses drainage consisting of a catheter and an ordinary tube passed through the urethra into the bladder, and a continuous irrigation of normal salt solution is begun immediately and kept up for a week. He packs the two spaces left by the lateral lobes with gauze, which he commences to slowly remove after the second day. In the median incision he closes the posterior part of the wound, while in the \wedge incision he closes one-half and part of the other. On the ninth day a catheter is passed into the bladder and retained for several days, giving permanent drainage. He stated that in 12 cases operated upon all are living and well.

All can empty their bladders completely, the perineal fistula has closed except in recent cases, and the sexual power present, the spermatozoa being active and the lecithin bodies of prostatic secretion present.

[To be continued.]

AMERICAN ASSOCIATION OF PATHOLOGISTS AND BACTERIOLOGISTS.

Third Annual Meeting, Held in Washington, May 12, 13 and 14, 1903.

[Specially reported for *American Medicine*.]

FIRST SESSION.

First in order was the report of the Council and the election of officers. For the ensuing year the following officers were elected: President, Eugene Hodenpyl, of New York; vice-president, Simon Flexner, of Philadelphia; secretary, Harold C. Ernst, of Boston; treasurer, Herbert U. Williams, of Buffalo; member of the Council, Alfred S. Warthin, of Ann Arbor. The election of new members followed. The next meeting of the Association will be held in New York City the Friday and Saturday preceding Easter of 1904.

The Agglutinative Reactions of the Group of Bacilli Found in Dysentery.—W. H. PARK (New York) first demonstrated cultures showing the grouping of the several diverse strains of the dysentery bacillus by means of their reaction in mannite litmus agar. The object of the work was to determine in how far we may consider the agglutination test specific in its relation to the dysentery organisms. Control tests with normal sera have shown that a normal serum can give high agglutinative reaction, and further that normal sera vary among themselves in both agglutination and in bactericidal properties. The serum of patients suffering from diseases widely different from dysentery can give positive agglutination tests; this was found in several cases of typhoid, and in a case of staphylococcus abscess. Because of the fact that normal sera contain agglutinins for both groups of dysentery, it is evidently necessary to find a normal serum which contains none of the agglutinative substance. After some search Park has found that the serum of young goats contains no agglutinins, and by using these animals he has come to the conclusion that the agglutinins produced by immunizing an animal against a member of the Manila group are not identical with those produced by immunization against the Shiga group. The diagnostic value of the reaction is, however, brought into question by the discovery by Park of an organism which morphologically resembles colon, but which in its agglutination and bactericidal reactions seems to belong to the dysentery group. He has found this organism in four cases of chronic dysentery.

The Reaction of Certain Water Organisms with Dysentery Immune Serum.—D. H. BERGEY (Philadelphia). The diagnostic value of the agglutination test in suspected dysentery is rendered even more doubtful in this paper. He started with the idea that the summer diarrheas of children might have their source in polluted waters, and several suspicious cultures were isolated from samples of water submitted to the laboratory for analysis. The cultural characteristics of these organisms did not resemble dysentery, but the agglutination reactions of all of them were positive. Experiments with higher dilutions showed that agglutinins for the water organisms were present in the specific dysentery immune sera up to as high as 1:400. Normal sera showed also the presence of agglutinins. A rabbit immunized against a water organism gave a reaction of 1:3,000 for the organism used for the immunization; for the Shiga group of dysentery this serum gave positive results in 1:10; for the Manila group in dilutions of 1:500. Bergey further tested the specific immune sera by saturation with different cultures. His experiments have led him to the conclusion that the agglutination reaction cannot be relied upon in differentiating organisms of this group. Immunization with one bacillus increases the agglutinins for a whole group. Normal sera contain agglutinins for many of the organisms.

The Presence of the Dysenteric and Allied Bacilli in the Normal Intestine.—W. W. FORD (Baltimore) has been impressed for some time with the presence in the normal intestine of organisms which from the cultural standpoint resemble the dysentery bacillus. He describes at length the cultural characteristics of certain organisms which he has isolated, and discusses the literature of the so-called pseudodysenteric group of microorganisms.

Discussion of these three papers upon the dysentery bacillus followed. FLEXNER (Philadelphia) shows the value of the observations recorded in the first two papers in the question of the diagnostic value of the agglutination test. He considers the only positive proof of the presence of the dysentery bacillus to be the isolation and cultivation of the bacillus. He further discusses the grouping of the dysenteric organisms, and refers to the valuable work of Gay (Philadelphia), who has been able to demonstrate that the various members of the group are more independent in their relation to the Neisser-Wechsberg phenomenon than in their relation to the agglutination test. Gay has further found that there is a cross protection between the

groups, a point of great value in the matter of the serum therapy of the disease, although the quantities of the immune sera needed for protection are variable. Any given serum will protect against the infection with the bacteria of any other group than that used in the immunization of the animal from which this serum was taken, but it must be used in multiple doses. Flexner objects to the use of the term "pseudo" at all. He thinks that with improved methods the true dysentery organism will be isolated from some normal individuals, for it is evidently present in instances where the disease is not subsequently developed. EWING (New York) points to certain technical difficulties in the methods of applying the agglutination test.

The complete title of the paper by HARRY T. MARSHALL (Baltimore) is **studies in hemolysis**. (a) A comparison of the receptors of the erythrocytes of the man and the monkey. (b) Hemolytic properties of normal human serum against various bloods, and the behavior of human erythrocytes in the presence of the serum from various normal animals. (c) Hemolytic properties of human exudates and transudates. In the discussion upon Marshall's paper EWING (New York) says that he has been able to separate human blood from the blood of the lower monkeys by means of the biologic method, but has not been able to differentiate between the blood of man and the anthropoid apes.

A Study of the Proteolytic Enzymes and of the Socalled Hemolysins of Some of the Common Saprophytic Bacteria.—A. C. ABBOTT and N. GILDERSLEEVE (Philadelphia) state that certain degree of immunity against the enzymes has been produced which manifests itself in a specific neutralization of the enzyme action. Normal sera have also a certain neutralizing action. The work upon the hemolysins has led to the conclusion that the hemolysis in the filtrates of bacterial cultures is due to the action of the proteolytic enzyme upon the corpuscles. The hemolytic action of filtrates of pyocyanus cultures was thought by Jordan to be due to an accumulation of hydroxyl ions; Abbott and Gildersleeve have found that the simple neutralization of the filtrate will destroy both hemolytic and proteolytic action. The culture of the bacteria in a proteid medium contains a greater amount of the proteolytic enzyme; the cultivation in the presence of blood-corpuscles causes the reproduction of a greater amount of the hemolysins.

Notes on the Agglutinin Reaction of the Pneumococcus with Certain Normal and Immune Sera.—AUGUSTUS WADSWORTH (New York) discusses the literature upon this question and then describes a new technic which has given positive results in his hands. This consists in using a suspension of pneumococcus cultures in isotonic salt solution, which suspension is then concentrated by the use of the centrifuge. The conclusion of the study is that the use of concentrated pneumococcus cultures will give positive results which can be of value in practical work. Reactions heretofore unknown have been demonstrated in normal sera. Positive precipitin reactions have also been obtained.

Embryonal Adenosarcoma in the Kidney, with Microscopic Demonstrations.—GEORGE BLUMER (Albany) describes the microscopic appearance of the tumor, which was made up of a connective tissue, a glandular tissue, and the sarcomatous tissue, which was located almost entirely around the glandular structures. Blumer would classify the tumor as a periglandular adenosarcoma. The paper continues with a discussion of the position of these tumors and of the cases which have been described in the literature.

In the *discussion* which followed LECOUNT (Chicago) called attention to the fact that Jacobi some ten years before the work of Birch-Hirschfeld described the existence of such a tumor group, and described especially its clinical aspects. WARTHIN (Ann Arbor) described a somewhat analogous case of tumor of the bladder. OELMACHER (Gallipolis) discussed the theory of the origin of these tumors, and especially the theory advanced by Hertzog. LOEB (Montreal) called attention to the possible source of error in the discussion of the theory of the origin of such tumors, namely, that tissues under pathologic conditions may form very different structures than under normal conditions.

On the Occurrence of Syncytium and Ectopic Ova, and on the Origin of Papillary Cysts in Certain Mammalian Ova.—LEO LOEB (Montreal) has made a comparative study of the ova of 100 guinea-pigs, cut in serial sections, and of 100 ova which were not studied in serial section. In 12 instances out of these 200 ova he has found syncytial cells. The origin of these cells is the connective tissue surrounding the follicles; giant cells occur, which he thinks are formed from the cells of the theca interna. Papillary cysts may also arise. He has found ova in all stages occurring in the medullary canals, structures which are thought to arise from the Wolfian bodies; these ova usually undergo atrophy, but Loeb thinks that they may sometimes persist.

CHARLES A. BENTZ and HERBERT U. WILLIAMS (Buffalo) demonstrated a new method for mounting museum specimens, which seems to obviate some of the difficulties of the methods at present employed. The method consists in embedding the tissues in a medium made of agar-agar, salicylic acid, and acetate of potassium. They have not succeeded in obtaining a clear agar. They further demonstrate a holder for slides while making smear preparations.

Case of Strongyloides Stercoralis Occurring in a

Native of Ohio.—A. P. OHLMACHER (Gallipolis) described this interesting case. The patient was an epileptic idiot. He believes that the infection occurred in the closed wards of the hospital, although he has failed to find the parasite in the stools of any of the other patients.

[To be continued.]

AMERICAN ORTHOPEDIC ASSOCIATION.

[Specially reported for *American Medicine*.]

FIRST SESSION.

The Mechanic vs. the Operative Treatment of Rha-chitic Deformities of the Lower Extremities.—R. TUNSTALL TAYLOR (Baltimore) said that all rha-chitic deformities should be treated when the bones are soft and in the early stage, and held by some fixed dressing, with the child in the recumbent position. Constitutional treatment in conjunction with this is imperative. When this opportunity has been neglected and the bones become hardened osteotomy or osteoclasts must be done. He presented his newly-constructed osteoclast, which is like the one in common use, except that it works by a lever instead of a screw, thus permitting more perfect adjustment of the limb and being more rapid in its action.

The Surgical Pathology of Genu Varum and Genu Valgum.—WALLACE BLANCHARD (Chicago). The skiagraphic observation of genu varum usually shows three contributing curves in order of development: (1) An exaggeration of the normal outcurve of the lower part of the femur; (2) an outbend of the upper part of the tibia; (3) a distributed outbend of the tibial shaft, the most pronounced curve being in the upper part of the tibia. The least overcorrection, therefore, is necessary at the culminating point to assimilate and give straight and lengthened legs. In genu valgum the primary inbend is usually in the upper part of the tibia and a succeeding incurve becomes distributed through the tibial shaft. The condyles remain normal. The least overcorrection for the best results should be at the apex of the deformity in the tibia. Lorenz and Renier claim that epiphysiolysis corrects by attacking at the central deformity situated in the condyles. This operation is founded on a proved pathologic error, and several of Renier's illustrations show the opening of the outer knee articulations without indications of any separation of the epiphyses or fractures. Its results have been about the same as Lorenz's recently discarded operation of overstretching the external ham-string tendon.

The Treatment of Paralytic Talipes by Tendon Transplantation, Supplemented by Other Operative Procedures.—ROYAL WHITMAN (New York). The results of the operation of tendon transplantation as at present performed are unsatisfactory. The favorable effects of the operation are more often temporary than permanent, and are due in many cases to the correction of the preexisting deformity, to subsequent retention, and to the removal of the deforming force rather than to a permanent gain in muscular power. Many of the operations of this class are manifestly impracticable. Simple operations, whose issue may be predicted, in which both the positive and negative effects of transference of muscular power can be utilized, should be selected. The attachment of transplanted tendons to those of the paralyzed muscles should be replaced by direct implantation at a point of selection. Periosteal implantation is less effective than that to the bone itself. The effect of the transplantation should be assured, whenever possible, by secondary operation. Such are arthrodesis of the mediatarsal joint for the prevention of varus or valgus deformity and astragalectomy, in case of insecurity at the ankle-joint, particularly of the calcaneus type.

Early Operative Treatment of Tuberculous Ostitis of the Knee.—BERNARD BARTOW (Buffalo) said that in the early stages the disease is limited to the femoral epiphysis, or more often to the inner condylar region. The focal area is often found before it has invaded the joint by trephining the condyle above the attachment of the capsule. There is no middle course in use today between the protective treatment and excision of the knee. The latter is indicated when the disease has invaded the joint. Diseased tissue should be removed with the curet, the cavity treated with carbolic acid, iodine or zinc chloride, and the operative incision closed with suture. Severe flexor contraction can be relieved by open division within the tendon sheaths and preserving their continuity, and during the regeneration of the tendons intra-articular tension is removed. The knee should be fixed by plaster bandages when the incision heals. Locomotion may be permitted with the aid of crutches and a high shoe. The advantage of this early treatment is that invasion of the joint is often prevented, the duration of the disease shortened, and functional conditions conserved. While on its failure to arrest the disease an extra articular vent for escape of pus can be provided, and should excision finally be necessary its good results are not impaired by the foregoing procedure.

Excision of the Knee for Bony Ankylosis: Report of a Case.—A. J. STEELE (St. Louis) is of opinion that time has shown the profession that excision doesn't give the useful limb as expected, that it leaves a deformity from lack of firm bony structure. If the condition is a progressive pathologic destruction (usually tuberculous in origin) arthroectomy and arthrot-

omy are indicated. If the disease has spent itself and there remains deformity with ankylosis, then osteoclasts or osteotomy are the proper methods. The former is mainly applicable to true ankylosis, because of the great deformity and danger of lighting up the old condition. In the following case cuneiform osteotomy seemed applicable: The patient was a boy, aged 14, with the right knee flexed to an angle of 90°. There was a history of needle in the joint at seventh year, which caused synovitis at the time of accident. The attending physician opened the joint, and shortly after abscesses formed. The condition was neglected, the limb became flexed and finally ankylosed. At operation a V-shaped flap was turned up, the patella torn loose from the femur, and a wedge-shaped piece removed from femur. Two steel nails, three inches long, were driven upward and posteriorly through the head of the tibia into the femur. Dressings were applied, with an iron rod splint to prevent motion. The limb was placed perpendicularly for 36 hours on account of oozing. The nails were removed on the eleventh day and a plaster cast substituted for the wire splint. In the fifth week the boy was permitted to walk with crutches. In the eighth week a leather splint was applied and the patient now walks unaided with but slight halt.

The Abuse of Flat-foot Supports.—WISNER R. TOWNSEND (New York) states that a correct diagnosis of talipes plantus is necessary before correct treatment can be instituted. Some of the most frequent errors in diagnosis are confused with ostitis of the tarsus or ankle, metatarsalgia or neuritis, inflammatory rheumatic condition about inner side of foot, pain due to talipes cavus, and periostitis of the os calcis. Flat-foot can be differentiated from these conditions by careful inspection, use of the x-ray, by the presence of atrophy of calf muscles, and by reflex muscular spasm. Treatment: Because flat-foot exists doesn't always imply immediate necessity for application of a support. Extreme spasm, marked deformity, or inflammatory conditions may contraindicate its use, the support doing more harm than good under such conditions. If the patient discovers the deformity he may do irreparable damage by buying a readymade support at a department store, shoe store, or other shop, all of which should be prohibited from handling them. The kind of support depends on each individual case. They must fit the foot, be strong enough to correct the deformity and maintain its shape. While the support can overcome the deformity it in itself is inadequate to cure. Perfect reduction may be gained, yet by not exercising the muscles and cultivating normal movements the foot may be weakened rather than improved. Therefore it is obvious that intelligent treatment of this deformity can only be done by medical men, and the routine practice of patients treating themselves by readymade supports sold by those with no knowledge of the true anatomic or pathologic conditions should be discouraged.

[To be continued.]

AMERICAN DERMATOLOGICAL ASSOCIATION.

[Specially reported for *American Medicine*.]

FIRST SESSION.

Sarcomatosis Cutis.—G. W. WENDE (Buffalo). The patient was a colored woman, aged 38. She had no previous diseases except the diseases common to childhood. The disease, resulting from an injury, made its appearance two years before her death in the form of tubercles, resembling very much varicose veins, which disappeared for a year and then returned; these tubercles were markedly pigmented and varied in size from a millet seed to that of a pea. They were accompanied by violent and persistent pain. One year later, when the lesions were about the size of a bean, they began to break down, and the pain disappeared. The inguinal glands were not enlarged. These necrosed lesions suppurated and were followed by exuberant granulations and free discharges. The patient lost appetite and began to fail in health. Blood examination showed no leucocytosis. Eight months later the lesions were still confined to one leg; a few nodes existed which were necrotic, and were followed by exuberant excrescences and offensive discharge. The patient was prepared for amputation of the leg when the disease was also found in the back, and the operation was not done. The progress of the disease was gradual, not painful. The urine contained no albumin nor sugar. Ten days before death the patient developed a cough, but no lung lesion could be found. Upon microscopic examination, the skin lesions consisted of round-cell infiltration with scanty intracellular stroma. These formed nodules which were chiefly in the hypoderm. The cells were of variable sizes and were either oval or round. They were not connected with the lymphatics. There were small deposits of chromatin, but no infiltration into the epidermis; many leukocytes were found in the epiderm. In summing up the writer said that the cells were proliferating around the lymphatics; cells were not of mycotic condition; lymph-nodes were not enlarged; the disease was confined to middle age; spots recognized by palpation, and were of a reddish tint, and hence point to sarcomatosis cutis. Arsenic was administered with relief to the patient with disappearance of the nodules, which does not correspond to sarcoma. The etiology is obscure. Syphilis is excluded.

The disease should be classified, as Fuldt has suggested, among the granulomas rather than as a true neoplasm.

Discussion.—THOMAS stated that since there are so many types of sarcoma we must progress along the line of bacteriologic examination. There are sarcomatous tumors resembling leprosy, tuberculosis, and syphilis, hence we must progress along the line of bacteriologic observations and not put too much stress on clinical. He also stated that sarcoma of the surgeon differs from sarcoma of the dermatologist—the latter lasting a long time with slight evidence of malignancy. T. C. GILCHRIST said that he had never seen a case of true sarcoma cutis; this case is more of a granuloma. E. B. BRONSON cited a case in which the symptoms were similar to this; lesions began on nose were removed, later large dusky tumors appeared on the ears, then on the legs, then on the feet. In this case pain was intense. Microscopically, sarcomatous elements were found but they were associated with the nerves.

President's Address.—J. T. BOWEN (Boston) said one of the most important subjects we can consider is **methods of teaching dermatology.** The value of didactic lectures, clinical demonstrations, recitations, and teaching by bedside instruction are relative. There is a growing tendency to subordinate the didactic lecture and to devote most of the time to clinical exercises in small sections of students. An ideal course in dermatologic teaching would demand the control of the dermatologic department of hospitals and also a certain number of hospital beds, in order to keep typical cases for teaching. He urged the importance of having the students divided into small groups. The best results are obtained from section work, and success in teaching dermatology depends upon the number in the section. The training of the eye in this work is of the utmost importance; the accurate observation as to color, size and shape of the lesion must be emphasized. In order to acquire this the student must be brought in close proximity with the patient and afforded sufficient time for careful and accurate examination. For the beginner it is best not to use a large number of cases, but use few and typical cases; have the students examine carefully and discuss such cases; in so doing there will not be the confusion as if a large number of cases were shown. The advantage of this method is that the student is made to think for himself; his mind instead of passively receiving what is brought to it, is in constant activity. The student should be made to describe what he sees with accuracy, and then led to form proper deductions. Experience in Latin nomenclature is of first import; a previous college education is necessary; the third year in college of medical study is as early as advisable to begin the study of dermatology. The student should read at first the more common skin diseases; should be able to master the principles of symptomatology, then should be presented for study patients with common diseases, leading on to the more complex. Didactic lectures have materially altered during the last 25 years by the many textbooks which the student may have as his guide, and which formerly did not exist. The clinical lecture is the most common method of teaching dermatology in America, and it is unlikely that it will be wholly superseded. Its advantages are very great where material is small and assistants limited. The didactic lecture, clinical demonstrations, and recitations all have a place in the teaching of dermatology. The educational side of the hospital is of direct benefit to patients as well as to students and physicians.

Recent Contributions to Our Knowledge of the Hysterical Neuroses of the Skin.—A. VAN HARLINGEN. The so-called neurotic excoriations of older writers have been classed as erythema since that is the dominant appearance, and in many cases the process goes no further, or at most terminates in very superficial destruction of epidermis. Balzer reports a case in which urticaria, erythema, and pemphigoid bullas occurred in successive attacks; some of the lesions terminating in ulceration, later with patches of gangrene and finally in keloid scars. TONNELLER, in his thesis, divided the hysterical gangrenes of skin into a number of types: 1. Slight circumscribed pemphigoid eruption on an anesthetic skin, without pain, or with very slight accompanied pain; either progressive ulceration or rapidly healing ulcers. 2. (Slenbenranch's type.) Injury, with painful eruptions at the point of lesion, healing with keloid scars. 3. (Ehrli's type.) Same as No. 2, but eruption attacks distant parts. 4. (Bayet's type.) Injury, eruption not at the lesion but in its neighborhood, the lesion remains circumscribed. 5. (Blandin's type.) Unilateral development. 6. (Leloir's type.) Generalization with relapses. 7. (Kopp's type.) Unilateral, with pain in certain nerve areas. 8. (Veillon-Bayet type.) Symmetrical localization upon the hands. Most hysterical skin affections appear at least, at first, to be vasomotor in character. In one case a hard edema showed itself and when this lesion had disappeared pemphigoid blebs followed which developed into intractable ulcers. Although the type varies greatly in the different cases of hysterical gangrene, each case showed characteristics peculiar to itself, yet certain points common to all. The great majority of the cases occur in young females showing signs of hysteria, usually of a mild type. The affection frequently develops after some slight accident; a burn or some injury from a corrosive, a cut or a puncture. The first eruption commonly occurs at or in the immediate neighborhood of injury, with considerable sensory irritation which usually introduces subsequent outbreaks. Sometimes the prodromes

of gangrene are entirely absent, at other times the gangrene develops from urticaria or erythema, or frequently from pemphigoid blebs. When gangrene is established the separation of the eschars often leaves an intractable ulcer, terminating in a keloid scar. While the favorite seat of hysterical gangrene is upon the extremities, the face, mammary region, and other localities are sometimes involved, as the external aural cavity or the mucous membranes. The question of self-infliction is of great import in the study of these cases. Bettman says that, first, the motive of any self-injury remains unknown; simulation may be the result of compulsory action of an abnormal psyche. Such self-inflicted injuries belong to the same category as the compulsory habits of nervous subjects, as onychophagia, dermatothlasia, trichotillomania, etc.; second, self-injury may be inflicted upon a skin of diminished resistance. Analgesic areas may become the seat of gangrene, not only because the patient is more likely to attack such parts of the skin as are least sensitive, but also because these parts are under such trophic influence as to permit a more decided effect from any violence. Often there is difficulty in making a differential diagnosis between hysterical gangrene and that which occurs in syringomyelia. Sometimes both conditions are present in the same patient. Next in frequency to the reported cases of gangrene in hysterical cases have been those of hemorrhagic eruptions of various kinds. Some of these have been collected by Bert in his thesis. Very few cases of hysterical skin affections other than gangrene and hemorrhage have been reported in the last few years. Montfort and Miralie report the case of a woman accustomed to heavy work with the right arm, who had three separate attacks of pain in this arm and hand, with outbreaks of dry, scaly, eczematous eruption at the palmar base of the thumb and over the neighborhood of the hypothenar eminence. The patient had at various times showed distinct signs of hysteria. Rest and the application of a splint to the forearm, with suggestion, cured the condition in a short time.

Recurrent Bullous Dermatitis in a Hysterical Subject.—C. J. WHITE. A young woman, aged 23, American, has shown distinct hysteric symptoms for several years and gave a history of marked neurotic and tuberculous parentage. During the past three years she has been the subject of a left-sided, recurrent, grouped, bullous dermatitis, which has during each year attacked one part of the body and by repeated attacks has gradually advanced its position. Each attack has lasted about a week and then disappeared entirely, leaving no mark. The patient is well nourished and does not complain of any gastric disturbances.

Discussion.—E. B. BRONSON said that we ought not to bind ourselves to a fixed diagnosis in these cases. Many patients are susceptible to skin changes, due to slightest causes. Decubitus may bring about just such a condition. In many instances co-operation on the part of the patient may bring about hysterical changes and trophic changes. F. C. GILCHRIST said that when the practitioner did not know the cause he would call it neurotic. He cited a case in his own practice of a girl of 16 with a number of lesions on the forearm—keloidal growths, which encircled the wrist as a bracelet; one of these lesions was necrotic. Later she developed a necrotic lesion on the left hand near the metacarpophalangeal articulation, which sloughed and exposed the bone, apparently destroying the tendons. The girl was very hysterical and later developed worse mental symptoms. The patient was kept under close observation for a period of two years, in which time the keloidal growths disappeared and the necrotic scar healed entirely with perfect use of her finger. F. J. SHEPHERD said that when these patients were kept under strict observation bullous lesions did not recur. He said he was doubtful if there was spontaneous recurrence in any case. He cited instances in which patients inflicted the lesions upon themselves with cigaret burns or by hot water bottles placed against the skin. W. A. PUSEY believed that some lesions were of spontaneous origin—not all are produced by artificial irritants. M. F. ENGMAN stated that most cases of eruptions in hysterical patients are feigned and that hysterical persons have irritable vessels which dilate on the slightest trauma. He believed that the psychopathic feature played a considerable part in these cases. A. VAN HARLINGEN thought that the neurologist ought to be consulted in these cases, as they are more in contact with and have more to do with hysteria than the dermatologist. He thought that vasomotor disturbances were the cause of a great number of hysterical eruptions; some interference with the internal force of the patient and not arthropathic.

Fragilitas Crinium.—G. F. JACKSON reported two cases. I. Male, aged 35, a clerk, closely confined to the office, was somewhat nervous. He had his hair cut close, and it was noticed that it did not grow in regularly. Was scant on the top of the head and the scalp was bound down. There was a patch on right and left side of head which resembled ringworm, in which the hair was curled up close to the scalp and broken off. II. Man, aged 55, a lawyer, was in apparent good health, took no exercise and smoked considerable, spent most of his time in the office, and had paralysis agitans. He noticed that his hair was matted on the back of his head, two large patches in which the hair was broken off and curled up close to the scalp. Microscopically, no parasites could be detected. Jackson thought the last case might be trichorrhhexis nodosa.

Discussion.—F. C. GILCHRIST told of a similar case in a lady,

in which there was quite a large spot in which the hair would only grow about one inch and then break off; the hair was of good thickness and luster, but with no amount of treatment would it grow in. With consent of the patient he pulled out of root all the hairs of the area, with the result that it only grew in about one-half inch longer. There was no dandruff nor evidence of parasitic disease. Since then her hair has grown but very little.

[To be continued.]

AMERICAN MEDICAL ASSOCIATION.

Fifty-fourth Annual Meeting, Held at New Orleans, La.,
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Section on Practice of Medicine.

FOURTH SESSION.

The Mode of Transmission of Yellow Fever.—JAMES CARROLL (U. S. A.) stated that the commission appointed in the United States Army began its work in 1897. They attempted to find a germ constantly occurring in yellow fever cases and answering to the description of that announced by Sanarelli, but failed. They then began work on the theory that the mosquito is the agent which conveys the germ. This theory was first announced by Finlay, in 1881. His theory of transmission, however, was one which had to be abandoned. A general explanation and description of the experimental work done in Cuba was dwelt upon with some detail. To prove the correctness or incorrectness of the theory that fomites is the source of contagion, the commission placed three men, nonimmunes, in a closed room, where they lived continuously day and night for 20 days, sleeping between sheets, on mattresses and pillows, and under bedclothes that had been recently used by yellow fever patients. In the room were placed feces from such patients, clothing which they had worn, and other articles which had been used by them. These had been handled daily by the inmates of the room. The whole of this was repeated with two other nonimmunes and on a subsequent occasion by two others, making seven in all, which had lived in the room for a period of 20 days. In no instance was yellow fever contracted. Weeks after these same individuals were subjected to the *Stegomyia* and four of the seven contracted the disease. The shortest period elapsing from the time the infected *Stegomyia* had bitten a victim and the appearance of the initial symptoms of the disease was 12 days, and the longest period 57 days. From this the writer doubts if any of Finlay's cases were the results of his own experiments, since the time of incubation of his cases was too short. After numerous experiments and observation, Carroll is firmly convinced that the mosquito is the sole cause of yellow fever, and that fomites is never responsible for this scourge.

Discussion.—STANFORD E. CHAILLÉ, the venerable dean of Tulane University, who has been in all the epidemics in New Orleans during the past 50 years, and who has given much time to the subject of yellow fever, has given up the theory long held that fomites carries the virus, and now believes that the mosquito is the sole agent. He holds that four facts are established: 1. Fresh blood taken from a victim of yellow fever during the first few days of the disease and injected hypodermically into a nonimmune will cause the disease. 2. The female mosquito (*Stegomyia*) can and does convey the poison, and 12 days is the shortest period, so far ascertained, elapsing before the disease arises. 3. Fomites failed to infect after prolonged exposure seven nonimmunes, and in a subsequent experiment eight nonimmunes escaped infection. 4. Working on the mosquito theory, all yellow fever cases are explainable and on this theory the disease has been excluded from Havana for the longest period within 140 years. The author then gave in detail the results of his investigation of certain epidemics, which were thought to have been certainly caused by fomites—his conclusion being that in each instance the mosquito could have been easily the cause. He then took up the various arguments advanced by those who hold the theory that fomites causes the disease and showed them untenable. He, however, approved of retaining in operation for the time being the quarantine regulations of the various boards of health in southern States and cities, since public sentiment, at least, favors such regulations, and health officers are the servants of the people. EDWARD SOUCHON spoke from the standpoint of a medical officer of the Louisiana State Board of Health. He stated that the board had carefully examined into the various epidemics which had occurred in the State, and as yet they are unable to agree with Reed, Carroll, and their associates, that fomites never causes yellow fever. And, furthermore, public sentiment favors the carrying out of the present quarantine regulations, and should an epidemic occur after such regulation had been abandoned, public censure and criticism would inevitably follow. FOMENTO held that while no doubt the mosquito causes yellow fever it has not been conclusively proved that fomites do not. He gave as an illustration a few wellknown cases in which the mosquito theory appeared wholly untenable and upheld the views announced by Souchon. C. W. STILES

stated that the disease must be caused by a bacterium, a flagellate or a sporozoon organism; the latter alone, taken in connection with the mosquito, fills all the requirements demanded to produce yellow fever. The life history of the other organisms failed to comply with these demands. Therefore from a biologic standpoint the mosquito as the carrier of some sporozoon must be looked upon as the causative agent. CARROLL, in conclusion, was surprised at the general unanimity with which the mosquito theory had been accepted, and he held that the burden of proof that any other agency can and does produce yellow fever rests upon those advocating such theory. At the present time wherever yellow fever is treated in the United States Army service, a mosquito bar is kept at all times over the patient; and in no other way does his general treatment differ from other fever patients.

[To be continued.]

Section on Surgery and Anatomy.

THIRD SESSION.

Multiple Osteomyelitis.—JOHN T. BOTTOMLEY (Boston) reported a case of multiple osteomyelitis affecting the left humerus, the left tibia, and the right ulna. The interesting features were the fact that the disease occurred in an adult. Multiple osteomyelitis is extremely rare in adults, only one case being reported in literature so far as Bottomley has been able to find. Another interesting feature was that the infection was by the streptococcus, which is also quite rare and necessitates specially early operation and drainage of these cases.

Osteomyelitis.—EDWARD H. NICHOLS (Boston) gave the results of extended studies of the pathology of osteomyelitis. He finds that the disease usually begins in the marrow of long bones and is limited to the shaft. Softening of the compact bony tissue takes place, the pus burrowing outward beneath the periosteum, and if operation is not performed escapes through the soft parts. For repair of the damage new bone is formed from endosteum and periosteum. If operation is undertaken early the marrow cavity should not be cured, as is so commonly done, for this destroys the endosteum and retards repair. Early cases should be trephined at once, but in subacute cases it may be desirable to let the shell of involucrum throw out beneath the periosteum have some time to thicken before the sequestrums are removed. Three or four months may be necessary to accomplish this. In these cases the favorable time for operation may be determined by excision of a small section of periosteum and examination microscopically; needling may be of some aid; the x-ray is less helpful. In chronic cases the indication is to remove the dead sequestrum.

Discussion.—WILLARD (Philadelphia) finds that not only general practitioners but surgeons are often slow to make a diagnosis of acute osteomyelitis. In many of these cases the true cause of the trouble is overlooked and the patient is treated for rheumatism sometimes for months. It is always important to keep in mind the possibility of osteomyelitis when bone pain is situated in the region of joints. STEWART (Minneapolis) finds that an erroneous diagnosis of typhoid fever as well as of rheumatism is frequently made. He believes that not to remove the marrow, as suggested by Nichols, is to leave infective material and does not consider it a suitable treatment in such cases. He advocates the attempt to obtain healing under blood clot. MURPHY (Chicago) insists on early diagnosis and believes that the history is so clear in these cases that the cause of the trouble should never be overlooked. There is always acute pain located in the bone near its extremity, with elevation of temperature, usually preceded by a chill. There is no tenderness in early cases, except on long continued deep pressure. The pain begins near the epiphysis and high temperature continues so long as absorption of septic material continues, that is, until the escape of pus occurs by breaking through along a Haversian canal. If operation is performed within 48 hours of the onset of the trouble great destruction of bone is saved. GIBBONS (Scranton, Pa.) called attention to the fact that there is often pain on percussion when there is not on deep pressure in these cases. NICHOLS, in closing, expressed the belief that the diagnosis is by no means easy in these cases. It is frequently overlooked in children. In the early stage of the disease the destruction is limited to the marrow, not to the bone itself, and it is frequently unnecessary to remove the entire shaft, as is so often done in these cases. Apparent cures by healing under blood clot are frequently followed by recurrences.

Treatment of Vascular Tumors by the Injection of Boiling Water.—JOHN A. WYETH (New York) referred to the difficulties of the operative treatment of nevi, if extensive. Very many of these tumors cannot be successfully excised, although much depends upon the form of nevus, whether it be capillary, venous, or arterial. Some time ago Wyeth undertook to treat these tumors by the injection of melted paraffin, oil, and later boiling water. These liquids were injected into the main branches of vessels leading into the tumor. Several cases which had been successfully treated by the injections of boiling water were reported. In one case of a very large tumor covering the greater part of the posterior surface of the right side of the patient's back was successfully treated in this way. Under anesthesia the needle was inserted at 11 different points

and the hot water injected without any slough and with practically no scar resulting. This treatment may be used for circoid aneurysm; it is more difficult to successfully treat capillary nevi. Wyeth does not approve of the injection treatment of hemorroids, but if this method be employed in certain exceptional cases the use of boiling water is safest.

Discussion.—MAYO (Rochester, Minn.) had the opportunity of seeing two of Wyeth's patients who were treated by the boiling water injections, and considered the results in these cases most satisfactory. He has since treated a case of angioma of the face by the injection of half an ounce of boiling water into different parts of the tumor, with complete relief of the condition. LORD (Omaha) reported a case which he had treated in this way after trying the electric needle and Paquelin cautery without success. In order to avoid accidents from dislodgment of an embolus he believes that it is wise to make pressure with the finger in the region of the injection.

Further Experience With the Vertical Overlapping Method for the Radical Cure of Umbilical Hernia.—WILLIAM J. MAYO (Rochester, Minn.) called attention to the difficulties of successfully treating umbilical hernia in very obese patients with thin abdominal walls. Overlapping from side to side, which he first practised, is difficult in certain cases, because of the wide separation of the recti muscles in the region of the umbilicus. He first advised the overlapping method in 1898 and described it in the *Annals of Surgery* of that year. Since then the number of his cases has reached 35. There have been no relapses in the cases treated by vertical overlapping and only one relapse among the cases treated by overlapping from side to side. An elliptical transverse incision is made surrounding the hernia and exposing the fibrous margin of the ring. After freeing the ring and returning the abdominal contents, the lower margin of the ring is liberated for 1 inch laterally each side and is slid $2\frac{1}{2}$ inches upward into a pocket between the aponeurosis and peritoneum. In this way, the weight-bearing structures are given a fixed place of attachment on sound tissues above the site of the umbilicus and traction is widely distributed. A brief report was given of the main features of interesting cases among the 35 operations which had been performed. The patients are kept in bed three or four weeks after operation and it is not necessary for them to wear any abdominal support.

Discussion.—OCHSNER (Chicago) called attention to the large mortality claimed for operations for umbilical hernia in textbooks and monographs on the subject. Recurrences are also considered numerous. The reason for the mortality in these cases is the extreme and unnecessary traumatism required for approximation and the straining on the abdominal muscles, which are drawn tightly together and interfere with respiration. MURPHY (Chicago) reported a case in which death followed shortly after operation from pulmonary edema. This resulted from incapacity for respiration, because of the tension on the abdominal muscles. Such tension is entirely avoided by Mayo's vertical overlapping method. Murphy considers the question of umbilical hernia perfectly satisfactorily settled by the introduction of this method.

Evolution of the Mammalian Straight Gut with Special Reference to Peritoneal Changes Incident to Rotation.—W. T. ECKLEY (Chicago) demonstrated an ingenious apparatus for teaching the difficult anatomy of the peritoneum by means of rubber tubing to represent the intestine and rubber dam for the peritoneum.

[To be continued.]

Section on Obstetrics and Diseases of Women.

SECOND SESSION.

Infection of the Gallbladder and Biliary Duct Contents.—E. W. RICKETTS (Cincinnati, Ohio) thinks that the nomenclature, that of gallstone, is incorrect. Infection may exist with or without stone. The gallbladder may be anastomosed to the stomach or duodenum. The simplest procedure is that of cholecystostomy, stitching the edges to the abdominal incision for free drainage. Contraction occurs after drainage. Three-fourths of the cases of gallstone occur in women. The typhoid and colon bacillus are the most common infections. The cystic duct may remain free from infection and perform its function. Colic is often due to obstruction of the duct or flexion of it. The patient may become septic. Residual bile may collect in the bladder; firm adhesions of the bladder may occur. The freeing of adhesions often effects a cure. An infected gallbladder with accompanying symptoms especially demands treatment. The question as to how much should be done when associated with stone in the common duct is an important question. Jaundice is a serious complication. Rupture of the gallbladder from vomiting may occur. Sudden escape of infected contents may produce speedy death. Incision should be made over the gallbladder and pressure exerted or force a lodged stone either upward or downward. If the stone cannot thus be dislodged the duodenum should be incised near the entrance of the duct and the stone pushed upward. If the duct contains a deposit of plugs, they should be washed out by the use of a catheter. Early diagnosis is not difficult; it is as easy as in appendicitis. Operation may be done under local anesthesia. Let it be well understood that cholecystitis is not

a harmless disease. The secretions of the liver are most abused in health and most neglected in disease.

Discussion.—DUNNING (Indianapolis) raised the most important question, as to how much should be done when cholecystitis is associated with stone in the common duct. In septic conditions, with much jaundice, he thinks it well to be content with drainage only; otherwise the mortality is high. He would also hesitate to add the dangers of opening the duodenum. He believes better results will be accomplished by incising the common duct, thus removing a stone and finally inserting a tube for drainage. He would advocate, in severe cases, two operations, the first one for drainage only, a later one for the removal of the stone. THEINHAUS (Milwaukee) approved of the transduodenal route when the stone is impacted in the duct near its entrance into the duodenum. He believes that the method advocated by McBurney in such cases is the only proper method. THOMPSON (Scranton, Pa.) cited a case in his experience in which, by the usual operation, 60 gallstones were removed. The patient did well for two months, when the temperature rose to 104°. Spontaneous reopening of the wound with discharge of bile and pus recurred at intervals. The case was finally cured by the operation of anastomosis of the gallbladder, with the duodenum by the use of a Murphy button. The cause of the prolongation of the condition he was unable to determine. HALDERMANN (Ohio) discussed the difficulty of determining early in some cases whether the condition was not one of malignancy. The pain is not pathognomonic. He has been much in doubt, particularly in conditions of atrophy of the gallbladder. He concludes that exploratory incision is justifiable. MARCY (Boston) considered that when and how to make the diagnosis is more important than operative detail. He believed it lamentable that the general practitioner so often fails to recognize and diagnose the condition. It so happened that he was the first to remove a stone from a common duct. He pleaded that the surgeon might have the cases earlier. DUDLEY (New York) stated that he makes it a practice of aspirating the contents of an infected gallbladder before opening it. Thus a more perfect diagnosis can be made with reference to infection. He injects the bladder with 1-500 formalin solution, reaspirating several times. He believes in serious cases in drainage of the bladder, after thoroughly washing with the formalin solution. RICKETTS closed by referring to the difference in opinion now as compared with that of eight or ten years ago. We are far ahead of that time. He believes that a stone never exists in the common duct without symptoms having long pre-existed, rendering possible the prevention of the formation of the stone. The necessity for proper drainage for the liver, the largest organ of the body, was emphasized. Delay in operation has caused more deaths than all experiments performed. He begged for the privilege of operating before the condition presented a handful of pus.

[To be continued.]

Section on Diseases of Children.

SECOND SESSION.

The Pathology of the Summer Diarrheas of Children.—G. W. BOOR (Evanston, Ill.) is of the opinion that the term "cholera infantum" is best applied to the fulminating cases of food poisoning. This class merges imperceptibly into the next class, that in which diarrhea is chiefly due to bacterial infection. Streptococcus infection appears to be an occasional cause of infantile diarrhea, such cases occurring usually as a part of a general septicemia. It is probable that a bacillus of the colon group, though of a distinct species from the common colon bacillus, is the specific cause of most summer diarrheas. This organism is better known as the bacillus of Shiga. Duval and Bassett had succeeded in isolating it from 42 cases of summer diarrhea in infants. This bacillus was found in almost pure culture in the mucous stools.

Every Day Problems in Infant Feeding.—HENRY ENOS TULEY (Louisville, Ky.) at the outset declared that it was so very exceptional for the mother's milk to disagree with the infant that weaning, for this cause, should only be done for the best of reasons. Milk, modified at the laboratory or at the home, now afforded a fair substitute for breast milk, but in some instances even this form of feeding would prove most troublesome to the physician. Eternal patience was the price of success.

Infant Feeding.—ALEXANDER MCALLISTER (Camden, N. J.) pointed out that the laity were prone to judge of the value of an infant food by false standards, usually by whether or not the child lived and also by the amount of flesh it gained. These criteria, all physicians knew, to be notoriously misleading. The main point after all was not whether or not the milk was sterilized or pasteurized, but the individualization of infant feeding by appropriate modification of cow's milk.

The Infant Digestive Disturbances.—ALFRED C. COTTON (Chicago) read this paper. With regard to cholera infantum he expressed the opinion that this disorder was an intense form of acute gastroenteritis or a dyspeptic diarrhea, plus some unknown intoxication. It was well to bear in mind that a prolonged attack of summer diarrhea was prone to leave the infant with evidences of retarded development, so that these unfortunate children should have a hygiene especially adapted to them

and not merely to the average child of their age. He thought if only a small fraction of the energy expended upon artificial feeding were bestowed upon a study of the physiology of lactation it would be better for mankind.

Suggestions for Reducing the Prevalence of Summer Diarrhea in Infants.—J. ROSS SNYDER (Birmingham, Ala.) asserted that this disorder was preventable, and that if the minds of the laity and of some physicians could be disabused of the notion that this disease was chiefly dependent upon heat and humidity greater progress in prophylaxis would be made. It did not follow that bad cow's milk necessarily came from a bad dairy, for there were numerous ways in which the milk became contaminated after its delivery to the consumer. The tenement house poor furnished the hot-bed for summer diarrhea, and these people should not only be educated in the simple principles of proper infant care and feeding, but they should be supplied by milk of excellent quality, such as milk certified to by a medical commission.

Observations on Breast Feeding from an Obstetrician's Point of View, with Report of Cases.—EFFA V. DAVIS (Chicago) made, as her first point, that the newborn infant should be started out with its full birthright by refraining from ligating the umbilical cord and severing it from the mother until all pulsation had ceased. In the next place, the obstetrician should personally supervise the first application of the infant to the breast, beginning on the first day, and gradually reducing the interval of nursings in the course of three or four days from six to two hours. Engorgement of the breast could be largely avoided by the application on the second day of a properly fitted cotton-flannel breast binder. She had found that when the mother was much opposed to suckling her infant the coincident mental perturbation often altered the quality of the milk very materially. In the exceptional cases in which it really seemed as if the mother's milk did not agree with her infant it was her custom to stop the nursing for a short time and make use of some substitute food and note the result. When it was evident that the child did better when the nursing was stopped it was better in these exceptional cases to resort to artificial feeding than to allow the child to do indifferently, or even badly, while vainly attempting by a persistence in the breast feeding to accomplish the impossible.

Aphthæ and Herpes Contracted by Children Drinking Milk from Cows Suffering from Foot-and-mouth Disease.—E. F. BRUSH (Mount Vernon, N. Y.) presented a brief sketch of his efforts to obtain evidence of the recent occurrence in this country of the foot-and-mouth disease among cattle and its transmission to human beings. His conclusion was that this disease among cattle had been absent from this country for thirty years, but was now prevailing in Vermont, Massachusetts, and New Hampshire. It had been prevailing in England for the past sixty-four years and in Germany for about the same period. The disease was recognized as eminently contagious in cattle and herpes and aphthæ in the human race corresponded clinically with foot-and-mouth disease in the bovine; moreover, aphthæ sometimes appeared as an epidemic among children. He cited the occurrence of five cases in children of one family who got their milk from a herd of cattle afflicted with the foot-and-mouth disease. The milk lost its virulence the longer it stood after milking and boiling entirely destroyed the aphthous poison.

Observations on Prolonged Withdrawal of All Food in the Management of Certain Cases of Intestinal Disorders.—THOMAS D. PARKE (Birmingham, Ala.) said his object was to call attention to the fact that one could with impunity and with advantage deprive infants of all food except water for a period of five days or more. He contended that the character of the stools and the patient's condition should be the sole indications for a return to food.

Discussion.—H. M. McCLANAHAN (Omaha) said that the need for greater attention being given to the subject of lactation was evident from the fact that recently, after a considerable search through the literature, he had found only two articles giving this important subject special consideration. Another matter worthy of serious attention was the prevalent, though erroneous, notion that if a mother did not have enough milk to nurse her baby the infant should be weaned. This was a serious error and wholly ignored the great value of supplementary feeding. The question of the antitoxic influence of human breast milk, as recently referred to by Dr. William M. Welch, was also of great interest. CHARLES G. KERLEY (New York) said he had never found any woman, no matter what her station in life, who was not willing to nurse her child if she could. If she was in the higher walks of life and had been accustomed to having a good deal of liberty and recreation he found that if tied down to the inexorable two-hour intervals of nursing she began to chafe in the harness, and the quality of the milk deteriorated. For these persons he allowed the infant one bottle feeding each day, and this added liberty had proved most salutary. He did not know of any specific medication which would serve to increase the supply of maternal milk; it could only be successfully done by a proper daily hygiene, including in this a generous diet and proper exercise. Much of the dissatisfaction with infant feeding arose from the error, prevalent even among physicians, of trying to feed sick children just as if they were well. In many of these discouraging and troublesome cases great benefit would accrue from a resort to stomach washing, and it was no unusual thing for the

stomach-tube to cause the discharge of a large quantity of mucus. This treatment was of service even if there were no vomiting. The speaker said he looked upon condensed milk as a sick food, and wholly unfit for well children. In connection with this general discussion he desired to enter a strong plea that the section would take up the advocacy of State control of the production of pure milk, and the securing of pure food for those who could not afford to pay for it. So far he had seen eight or nine cases of Shiga diarrhea treated with the Shiga serum, and the results obtained had impressed him favorably. During the past two summers the annual mortality in New York City from diarrhea had been over 4,000, and yet this tremendous mortality was preventable largely by supplying pure milk, securing better hygienic conditions and suitably educating the ignorant. R. B. GILBERT (Louisville) spoke of the pressing need of securing more nursing mothers. He did not think the mother should be wearied by attempts at nursing during the first few hours after delivery; at this time the newborn infant only required a little warm sterile water. Emotional influences markedly affected the secretion from the mammary glands. He recalled a case in which after a violent fit of anger a mother nursed her infant, and within an hour the little one died in convulsions. The use of whisky, and especially tobacco, by the nursing mother greatly deteriorated her milk. Sexual intercourse also markedly influenced the secretion of breast milk, so much so that he believed a nursing infant should not be put to the breast for three or four hours after sexual excitement. AULD (Chicago) indorsed what had been said by Dr. Parke regarding the starvation of infants. He had often been called to cases in which infants of about a year old were in convulsions, and believing that milk was the cause of the convulsions in most of these instances he had stopped milk and put the children on adult food. This action was based on information obtained from veterinarians to the effect that adult dogs and cats could not digest milk at all and that adult rennet was inert. He declared that he had no faith in a child of over 1 year successfully digesting milk. P. T. BARCUS (Crawfordsville, Ind.) emphasized the need for the physician's attending to the minutest details of the treatment. He firmly believed that the infant should be put to its mother's breast within the first hour or two of life, but if the colostrum persisted it was necessary to draw the milk with a pump and not give the infant this colostrum. Ordinarily these little infants did not receive nearly enough water. THOMAS S. SOUTHWORTH (New York) was disposed to believe in the case reported by Dr. Tuley, in which breast feeding had been abandoned because of the disturbance caused by menstruation, that the nursing might have been continued if the breasts had been pumped out at the menstrual period and the infant given some artificial food during this time. Dr. Davis' admirable paper reminded him that a good deal of persistence was requisite to succeed in many instances in maintaining breast feeding. We should not be too easily discouraged in our attempts to restore to a normal standard breast milk which did not apparently agree with the infant.

[To be continued.]

Section of Materia Medica, Pharmacy, and Therapeutics.

FIFTH SESSION.

Drugs Used in Nervous Diseases.—GEO. F. BUTLER (Alma, Mich.) stated that nerve fatigue is not tire only, but nerve poison. He reviewed the drugs used in nerve affections and their action. The remedies acting directly on nervous systems are divided into two classes—stimulants and narcotics. Certain elements must undergo biochemic change before having action in the body. He then discussed the mineral sedatives. He concludes that nerve action means nerve waste, and therefore nervous exhaustion must be treated by restoratives and stimulants.

The Mind as a Causative and Therapeutic Factor in Medicine.—BITTLE C. KEISTER (Va.) thinks that consideration of the mental factor in medicine has become almost obsolete, and gave instances to show how far it has become overlooked. If more attention was paid to this great subject, less success would attend mental healing and all other charlatanism. He urged that some measure be taken to create chairs for the purpose of teaching this important subject in our colleges, and quoted several observers who reported cases of malignant disease developing from mental disorders, laying stress on the close relationship between mind and body. The surgeon, oculist, aurist, otologist, and general practitioner should make a closer study of the mental condition of their patients.

Discussion.—BALLARD spoke of the beliefs among the negro in hoodooism, and reported a case of convulsion brought on by the mental state, and the treatment he adopted. BUTLER considered mental therapy very valuable in certain conditions, especially hysteria. He spoke of the faith placed in physicians by their patients, relating several interesting instances. SOLIS COHEN thought most cases which can be benefited by suggestive treatment are cases of hysteria. He had long considered that Graves' disease was in a great measure due to "crystallized fear."

The Composition of Some of the So-called New Synthetics.—W. J. ROBINSON (New York) gave instances where

physicians prescribed remedies of the composition of which they were practically ignorant. The new combinations on the market are in many cases old remedies renamed. Facts show that most of these preparations are impure and dangerous. Some steps should be taken to prevent their sale and advertisement. It is high time that the physician stopped buying them. He proceeded to give analyses of different preparations which were old ones with new names, and spoke of the absurdly low cost of their preparation and the extremely high price of sale.

Discussion.—CHAMBERLAIN spoke of the impurity of the so-called new preparations and gave instances known to him when a physician had made an analysis of a preparation whose advertisement was conspicuous in a leading medical journal, and on finding it impure wrote to the journal. He stated that the advertisement still appeared in that journal.

The United States Pharmacopoeia.—CARL S. N. HALLBERG (Chicago) gave reasons why the United States Pharmacopoeia for 1900 had not appeared. The committee had lost valuable men since they were appointed which had delayed the work in many ways; there is marked limitation in number of pure drugs. Most of the impurities are only in a very small proportion. For this reason the standard can not be too high. It is not absolutely imperative to have strictly pure medicinal chemicals. Ethical medical laws do not permit the use of patent combinations or of combinations controlled by unlimited proprietary rights. No patent drugs will be admitted to the United States Pharmacopoeia of 1900 unless the patents expire before 1910. He then gave a list of those combinations which will be admitted, also those to be excluded. Biologic and pharmacologic tests not to be admitted to the United States Pharmacopoeia and physiologic doses will not be given. The great question is as to what serums will be admitted. He then gave instances of pharmacopoeial nomenclature, and reasons therefor.

Discussion.—ROBINSON considered the United States Pharmacopoeia superior to any in the world. Few physicians study or own a pharmacopoeia, a fact explained by its not containing many drugs which progressive physicians use constantly. He suggested that a supplement be made containing the drugs not admitted to the United States Pharmacopoeia. KELLY did not think that the supplement would be of any aid to the physician, because as we grow older we use fewer drugs. HILL said the metric system and dosage were the two "bugbears" of the United States Pharmacopoeia. He hoped to see the metric system made permanent, and discussed measures by which the practitioner might be induced to take it up. OSBORNE said the fault of the profession in not using the metric system was due to the colleges, and gave reasons. Students are very apt to be confused by the two systems. WEBER considered that laziness was in a great way responsible for the profession's using the old way of prescription writing. He said that in Germany after one year the metric system had been adopted everywhere. HALLBERG, in closing, said that the United States Pharmacopoeia was practically a revision of all the pharmacopoeias of the world. He did not think the supplement suggested in the discussion would be valuable. The committee was going to change the strength of many tinctures, which would be important.

Dry Superheated Air in Therapeutics.—C. E. SKINNER (New Haven) thought it necessary that the physiologic action of an agent should be known before the agent should be used. The general body temperature and pulse are rarely affected by the use of superheated air, but certain changes take place in the body after the heat treatment. The functional activity of all organs is augmented. Dr. Skinner gave results caused by the local and body application of heat and reviewed diseases and affections benefited by this treatment. He also reviewed the pathology of sprains, dislocations, contusions, etc., and their treatment by heat.

Discussion.—ROBINSON said that American physicians have been blamed for some time for their ignorance of certain drugs and treatment, this due to the fact that the quacks get results with drugs and remedies which the profession does not use. TOMPKINS wished to know if this treatment would spread infection in a case where the tissues were destroyed beyond redemption by contusion. SKINNER, in closing, said that in such cases the formation of pus was hastened but the abscess was localized and glands were not involved. He had never seen a case in which the infection was increased by this treatment.

[To be continued.]

Section on Pathology and Physiology.

FOURTH SESSION.

The Morphology and Biology of the Parasite from a Case of Systemic Blastomycetic Dermatitis and General Infection.—F. J. OTIS and NEWTON EVANS (Battle Creek, Mich.). The paper dealt on the scientific study of this parasite in the different tissues of the body. It invaded all the structures and spread by extension, and through the circulatory system it multiplied in the tissue by budding, and possibly by sporulation. By artificial culture it produced mycelia, and multiplied by pieces of mycelia and lateral conidia—a few instances by budding. The organism fulfilled all the requirements of the law of Koch—it being most pathogenic to the guinea pig. It is destroyed by the usual antiseptics of custo-

mary strength in these experiments in less than two minutes, with the exception of hydrochloric acid, 2%, in which it seems to grow more luxuriantly. The fumes from cedar oil inhibited the growth, and by long exposure is completely destroyed.

Further Observations of Ankylostomiasis in the South.—CLAUDE A. SMITH (Atlanta, Ga.). This condition was supposed to be caused only by drinking water containing the larvae of the ankylostoma, but according to observations seem to enter the body through the skin. This disease is found most commonly in children, sometimes in adults, more in white than colored people; it seems to inhabit the South, its range being from the Carolinas to Texas; always in the country, never in cities. Eggs of the parasites are found in the feces of patients who have had several attacks of groundage; they are not hatched in the intestines, but in feces outside the intestines, and in the soil they hatch in 24 hours. The doctor related several cases in which those who have walked barefoot were infected with this bacteria while those whose feet were protected by shoes never showed any symptoms of the disease; a positive diagnosis could only be made by searching for the eggs in the feces.

Demonstration of New Physiologic Apparatus.—WINFIELD T. HALL (Chicago). No paper was read, only a description of the manometer tambour and an improvement on the frogboard myograph. This consisted of a simple oak board covered over with a piece of cork to which is attached the myograph; from a thread to which a curved or bent needle is attached is hooked on the split tendon of Achilles of the frog and threaded to the myograph.

The Working Capacity of a Muscle.—(Read by Dr. Hall, of Chicago.) J. G. HOLMES (Chicago). When the conditions are physiologic a muscle may work continuously through several successive hours without absolute local fatigue. The amount of work which a muscle will accomplish when working under physiologic conditions far exceeds the amount which has usually been accomplished in ergographic work.

[To be continued.]

Section on Ophthalmology.

SECOND SESSION.

The Physiology of the Sympathetic in Relation to the Eye.—GEORGE E. DE SCHWEINITZ (Philadelphia) gave a brief review of the general anatomy and physiology of the sympathetic nerve; its distribution in the eye to the iris and ciliary body; to the eyelids and to Müller's muscle. He considered its relation to the lacrimal secretion; its influence on the movements of the iris, with special reference to the mydriatic tract of the pupil and also a consideration of the ciliary spinal center. He considered the nature of the ciliary ganglion, with special reference to its relation to the sympathetic system and of the effects on the eye of lesions of this ganglion; the relation of the sympathetic to the mechanism of accommodation; the relation to intraocular tension; the ocular phenomena which follow galvanism of the sympathetic in the neck. He referred at length to the experimental exophthalmos and enophthalmos and "ptosis sympathetica" and the ocular phenomena which follow injury to the sympathetic in the neck, section of the sympathetic cords or extirpation of the cervical ganglia; the effects of drugs and toxic agents. He said that although lacrimal secretion may be caused by excision of the sympathetic or removal of the ganglion, the sympathetic itself should not be considered the nerve of secretion for the lacrimal gland. He also spoke of the effects of drugs and toxic agents, and concluded with remarks on the relation to the eye deduced from operations on the sympathetic cord in the neck or its ganglia in glaucoma, epilepsy, and exophthalmic goiter.

The Influence of Resection of the Superior Ganglion of the Cervical Sympathetic in Glaucoma.—WM. H. WILDER (Chicago) reviewed the history of the operation and reported cases of sympathetomy in various forms of glaucoma and considered its immediate and ultimate effect on vision, tension of the eye, pupil, visual fields, etc. He considered also the accidents and complications as a result of the operation and referred to the experiences of various ophthalmologists and their impressions of its utility in glaucoma. He concluded that the operation is not one to be considered of unusual danger and it should show a trifling mortality; that it was not an operation to be condemned too hastily; that it should be given an early trial where it is applicable; that the simple glaucoma chronica is the one most suited and next the hemorrhagic form.

Influence of Resection of the Cervical Sympathetic in Optic Nerve Atrophy, Hydrophthalmos, and Exophthalmic Goiter.—JAMES MOORES BALL (St. Louis) detailed the history of sympathetomy for optic nerve atrophy, reporting his own cases with the method. Few cases of hydrophthalmos had been treated by operation on the cervical sympathetic and the method seemed valueless. He considered excision of the cervical sympathetic was worthy of trial in those cases of simple atrophy which resist measures less heroic. It was impossible as yet to say whether or not bilateral operation was advisable in unilateral atrophy. The value of the method in hydrophthalmos has not been demonstrated. In exophthalmic goiter excision of the ganglion is followed by a larger percentage of cures than is any other proceeding.

[To be continued.]

ORIGINAL ARTICLES

CONGENITAL DISLOCATION OF THE HIP: REPORT OF A BLOODLESS REPOSITION, FOLLOWED BY DEATH, WITH AN ANALYSIS OF TWENTY-THREE CASES IN PROCESS OF TREATMENT.

BY

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PATHOLOGIC REPORT BY

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[Concluded from page 787.]

The only fatal result is here fully recorded.

On March 10, 1903, B. D., a girl, aged 7½, was first seen by Dr. Rugh, she having been sent by the family physician, Dr. I. A. Fries. The family history showed tuberculosis on the father's side, a brother having died of pulmonary tuberculosis, but no history of any similar deformities on either side of the family.

The patient was the oldest of three children, the second one, however, died in its fourth year from meningitis. Birth of the patient was normal. She had measles at three years of age. All three of the children had very large heads when born and the disproportion remained quite marked, giving the appearance of hydrocephalus. Patient never was a robust child nor a hearty eater, but seldom complained of illness. When nearing two years of age she began to walk and the family physician began to notice that she appeared much shorter when standing than when lying. A careful examination revealed to him a double congenital misplacement of both hips upward and backward on the dorsum ilii. He immediately sent her to the orthopedic department of a hospital in this city where she remained under treatment for nearly two years. The treatment consisted in extension for over a year and then the application of plaster-of-paris with the legs in the position of slight flexion and slight abduction. Radiographs taken at the time showed the heads of the femurs to be *opposite* to but not *in* the acetabula. Braces were later applied and worn for two years, but the hips remained misplaced and her gait was very much impaired. When she was examined on March 10, and later, she presented the following appearance: A rather delicate looking child of ordinary height and somewhat under weight. The calvarium was very broad, the face somewhat narrow, accentuating the rachitic tendency, and the veins of the forehead and neck were quite prominent. The skin was almost transparent and presented a very waxy appearance. The chest was spare but of normal size; the abdomen retracted; the extremities thin and the muscles weak. There was marked lordosis of the lumbar spine and the gait was very awkward and rolling. The knees presented a pronounced condition of genu recurvatum and knocked together in walking. The ligaments of the several joints of the lower extremities were very much relaxed, allowing considerable abnormal motion. The feet were in the position of valgus and the toes were markedly everted. The hips were very freely movable and on standing the femoral heads and trochanters stood out prominently. They could be drawn down to the acetabula but not *opposite*. Muscular control was good but the muscles were weak. The adductors were very much shortened as were also the flexors, and the thighs could not be abducted in the line of right-angled flexion beyond 45°. The radiograph showed fairly well-developed femoral heads and acetabula. There being no apparent counterindication present, bloodless reposition was advised and assented to by the parents after the dangers were outlined to them. The patient entered the Jefferson Hospital on March 17, and was prepared for operation in the manner usual at that institution, viz., regulation of the diet, bowels and secretions, with rest in bed for a period of not less than 24 hours. The examination of the heart and lungs was negative and the urine examination was as follows: Urine clear, straw color, acid reaction, faint trace of albumin, 1.5% urea, amorphous urates, squamous epithelial cells and a few leukocytes. The operations were performed the following day at 11 o'clock by the writers, assisted by Drs. Dolson and Taggart, and the anesthetic was administered by Dr. G. J. Schwartz, the official anesthetizer for the orthopedic department. The right hip was first attempted, the various steps of stretching and tearing the adductors and flexors being carefully followed out, and then external rotation and circumduction with hyperextension in the abducted position

was employed but reduction failed. A very significant thing occurred while tearing the adductors, but was considered at the time as not having any special significance. As soon as abduction was made in the tearing of the adductors the skin over these prominent muscles where massage was used began to tear, showing the low state of vitality present. This occurred on both sides, and wherever pressure was made by the hands, or means of reduction, a blue mark appeared.

After several more attempts in the same manner were made the yarn rope was attached to the ankle and traction made to stretch the capsule downward as well as to bring the head opposite the acetabulum. The hip was manipulated while this was being done and then reduction was again attempted but was not accomplished. While the hamstrings were being stretched something was heard to snap and it was thought to be the tendons of the semitendinosus or semimembranosus muscles, but this was evidently when the ischium was fractured, although it did not seem like a bone breaking. When traction was being made on the femur, a tearing sound was noted and was supposed to be the Y-ligament, but evidently the femoral neck was fractured instead, although it could not be recognized at the time. After 25 minutes work by both operators the head was thought to be placed upon the acetabulum, as the leg could not be straightened at the knee, and this was given by Lorenz as the sign of replacement.

The child's condition seemed good and it was decided to attempt the reduction of the left hip at once. No greater difficulties to reduction appeared in the left leg than were encountered in the similar stages with the right, but the skin likewise gave way over the adductor tendons. The strong resistance of the hamstring tendons induced the operators to cease further efforts after 15 minutes time when it was realized that reduction by the bloodless method was impossible without unduly prolonging the manipulations that were made. It was decided to place the legs in the best possible position for repair of the torn structures and subsequently to resort to the intermediary operation of cutting down upon the joint and stretching the capsule and removing such other obstacles as might be found. When the legs were in position for the plaster casts it was found that the left leg like the right gave the test condition of resistance to extension of the leg and led the operators to believe that the head on this side also rested on the acetabulum. The error in this respect was demonstrated at the postmortem. Both legs were then placed in the position of hyperabduction and hyperextension ("frog position") and plaster-of-paris applied by Drs. Dolson and Taggart.

The following notes are given by Dr. C. A. Dexter, the house surgeon:

The child was brought up from clinic at 12.30 o'clock. The pulse was rather weak and rapid, and atropin sulfate, .3 mg. ($\frac{1}{30}$ grain) and strychnin sulfate 2 mg. ($\frac{1}{30}$ grain) were given hypodermically and external heat applied, and the child reacted very well. On coming from under the influence of ether about two hours later appeared to be in fair general condition. Later in the afternoon complained of some thirst, but not so much as the average ether patient. Was a little restless, but not so much as the usual case of a reduction by the same method. Was not nauseated and did not vomit during the afternoon. About 9 o'clock p.m. vomited about two ounces of a dark brownish fluid and once or twice during the night after this. Had stimulation during the night. After 10 p.m. the child became delirious, the delirium being of a mild talkative character and continuing throughout the night. At 8 o'clock a.m. the temperature was down to 97° and external heat was applied. Pulse was somewhat rapid and weak, and coffee and whisky by enema, atropin and strychnia hypodermically were given. The child apparently had begun to react, the pulse getting stronger. Was now perfectly conscious and said that she was not in any pain.

At 9 a.m. Professor Wilson was telephoned for and arrived ten minutes later. Instruments were in readiness for saline infusion, but the child's condition became so rapidly worse that an opportunity to use them was not given.

At 9.35 a.m. her condition seemed somewhat improved.

At 9.40 a.m. there was a marked change; breathing suddenly became gasping and superficial; pulse absent at the wrist; stimulation was again used hypodermically, but the breathing quickly became worse, the heart-beats weaker, and with a few convulsive gasps the child died at 9.45 a.m.

TEMPERATURE CHART.

Date.	Hour.	Resp.	Pulse.	Temperature.
March 17.	4 p.m.	20	90	98.4°
" 18.	8 a.m.	20	80	97.0°
" 18.	1 p.m.	32	100	98.0° after operation.
" 18.	3 p.m.	32	112	101.0°
" 18.	6 p.m.	36	104	101.4°
" 19.	5 a.m.	38	132	96.4°
" 19.	9 a.m.	40	156	99.4°
" 19.	9.45 a.m., died.			

In the light afforded by the very careful postmortem examination by Dr. Coplin in the presence of the staff

of the orthopedic department, it may be noted that this was a case in which replacement could not have been secured without removing the ligamentum teres, and that there was no way of predetermining the existence of the obstacles to the bloodless reposition.

The main factor was the length and size of the ligamentum teres, which more than filled the acetabulum on each side, and therefore the sign which indicates reduction—that is, the slipping out of the head from the acetabulum as the leg is brought into an extended position—was absent. While this one factor, *i. e.*, the ligamentum teres, was sufficient to have prevented reduction, the very thick capsule was elongated and had a tendency to fold in between the head and the acetabulum again, preventing the clear sound that occurred in other cases when the head, it is believed, entered the acetabulum. On both sides the articulating surface of the head was found placed above the posterior rim of the acetabulum, in which position it was placed at the time of operation, and was, therefore, decidedly anterior to the position which it had formerly occupied on the dorsum of the ilium. Just when or how the three fractures occurred it is impossible to determine, for while something was felt by the operators which was unusual, it did not partake of the nature of breaking bone, but closely resembled tearing fibrous tissue, and was so considered at the time of operation. The tearing sound was communicated to the operator who was holding the pelvis as well as to the one who was manipulating the left leg. It was a diffused sound and its origin could not be located. Twice this occurred, but a third fracture which was found postmortem cannot be accounted for. The bone-ends in all three fractures were in close apposition, clearly indicating that if death had not ensued, repair would have taken place in favorable position. That no fractures occurred upon the left side is due to the fact that efforts at reduction ceased in about one-half the time spent upon the right leg in realization of the inexpediency of continued efforts. The torn skin over the adductor tendons was accepted as an indication of the low vitality of the patient, as this did not occur in any other case, although several had had ecchymotic spots of quite large size for varying periods of from one to two weeks.

As to the force used it can only be compared with other cases and may be stated as having been skilfully applied and was much less and for a shorter time than in some of the other cases, and especially so in contrast to the fourth patient upon whom Lorenz operated. The forcible manipulations appeared to be suitable to the conditions and there was no recognizable counterindications. The previous condition of the child gave no distinct evidence of her deficient vitality, and it would seem as though the methods employed at reduction were less responsible for the death than the anesthetic, although the entire procedure must be considered.

The pathologic conditions found in the lungs and kidneys, which gave decided indications of very recent origin, could be caused by ether anesthesia for 1½ hours. Pneumonia following ether is sufficiently common in cases in which the operative procedures are of a mild character, and whether acute nephritis is likewise a sequel of ether intoxication is still a disputed point with pathologists, but the evidence in this case is strongly affirmative.

While the condition of the patient did not indicate shock at the cessation of reduction manipulations it was felt that the patient should be most critically safeguarded in every respect. When Dr. Schwartz, the official anesthetizer of the department, was obliged to leave at the beginning of the application of the plaster cast, it was deemed expedient for Dr. Wilson to take his place while Drs. Dolson and Taggart applied the plaster bandages, with Dr. Rugh maintaining correct position of the legs. This disposition of the responsibilities is a satisfaction to all concerned, in that it is believed that everything was done to secure a favorable recovery in this case.

The full details of the postmortem by Dr. Coplin are here given as an essential feature, and their value is enhanced by the disinterested manner in which the report is made, hoping that the conditions, methods, and results will be of service in guiding others in cases of this kind.

PATHOLOGIC REPORT.

Autopsy protocol, case of B. D., female, 7 years, white. Drs. H. Augustus Wilson and J. T. Rugh, surgeons. Died March 19, 1903, at 9.45 a.m. Autopsy held March 19, 1903, at 1.45 p.m.

Anatomic Diagnosis.—Bilateral congenital dislocation of the hip. Perforate foramen ovale. Persistent thymus. Atheromatous arteritis of aorta and coronary trunks. Acute catarrhal tracheitis. Acute catarrhal bronchitis. Acute catarrhal pneumonia. General tuberculous lymphadenitis. Acute diffuse hemorrhagic nephritis. Latent or obsolescent rachitis.

External Examination.—The body is that of a fairly well-nourished female child. Rigor mortis is quite marked in the upper extremities and the calf muscles, but is slight in the muscles of the thigh. There is marked saggillation on the posterior aspect of the body, neck, head and arms. The thighs are flexed at right angles to the body in the axillary lines, and the legs at right angles to the thighs. The thighs and pelvis are encased in the plaster dressing commonly used after bloodless operation. This is removed in the usual manner, using every precaution to prevent any alteration in the relation of the enclosed parts. In spite of every care there was some movement of the right femur, and it was thought possible that it might have been misplaced, although subsequent findings did not support the view.

From the symphysis to the extreme margin of the right inner condyle of the femur is 24 cm.; on the left side the distance between corresponding points is 32 cm. The circumference of the right thigh, 8 cm. above the inner condyle, is 20 cm.; 22 cm. above the inner condyle it is 29 cm. The circumference of the left thigh, 8 cm. above the inner condyle, is 19 cm.; 22 cm. above the inner condyle is 28 cm. The following external marks are present upon the right inferior extremity: On the inner aspect of the ankle, posterior to the malleolus, are a number of ecchymotic spots, petechial in character, distributed over an area of 4 cm. in the axis of the limb, and 3 cm. transversely. From this point downward the superficial veins are conspicuous, but not palpable, and clearly not thrombosed. Five centimeters above the inner condyle is a pinkish, ecchymotic area 1.7 cm. in length in the axis of the limb, and 5.5 cm. circumferentially. From the lower third of the thigh upward, on the anterior surface, the skin shows pinkish-red mottling almost or quite to the junction of the skin covering the pelvis. This mottling is also present on the inner surface, but less marked posteriorly. Five centimeters from the symphysis, beginning 2 cm. below Poupart's ligament and extending downward, is an abrasion 2.8 cm. in length by 1 cm. in width; 5.5 cm. from the symphysis is a second abrasion nearly parallel with the first, 2.5 cm. in length and 1 cm. in width. At these points the epithelial layers of the skin are stripped and possibly also the connective tissue layers, although the subcutaneous tissues do not protrude or the skin retract; the eroded areas are covered by glazed lymph, through which the ecchymotic bases can be seen. The areas just described are in a larger field of discoloration, greenish-purple with darker purplish mottling, and extending from a point 2.5 cm. to the right of the symphysis to a distance of 15.5 cm. from the symphysis and becoming continuous with the irregular mottling referred to as present in the lower part of the thigh. The axis of this area corresponds to the course of the femoral artery and the area measures, transversely, 9.5 cm. It extends above Poupart's ligament 3 cm., and from the median line to the anterior superior spine. The skin of the perineum and the cutaneous structures of the vulva are possibly a little redder than normal, while the mucosa of the vulva is suffused with blood and purplish in color, the suffusion being most marked around the urethral orifice. The large area of discoloration already described on the right thigh is soft and almost fluctuating near its center and quite resistant, almost dense at the margin; at the base, near Poupart's ligament, it is quite dense.

Left extremity: Near the ankle are areas of discoloration, petechial hemorrhages and prominent veins essentially of the same kind as described on the opposite limb. On the inner aspect of the leg just within the margin of the tibia is an old ecchymotic patch 7 cm. below the upper end of the tibia. It is purplish with greenish-yellow margins, oval in outline and possesses a maximum diameter of 1.8 cm.; 5.5 cm. above the inner condyle is a pinkish-red area of discoloration, the long axis being transverse to the long axis of the limb, 6 cm. in length and 1.4 cm. in width. Just over the patella is a small ecchymotic 0.7 cm. in diameter. The anterior surface of the thigh shows the same pinkish mottling already described as present on the opposite limb. Four and seven-tenths centimeters to the left of the pubis is an irregular laceration of the epidermis and derma 3.7 cm. in length, 0.4 cm. in width, bridged here and there by fragments of the deeper layers of the skin and marginated by smaller fissured lacerations 1 to 2 cm. in length. The long axis of this area is parallel to the axis of the trunk. It is situated near the base of a large purplish-green area, irregular in outline, beginning 3.2 cm. from the symphysis

and extending in the axis of the limb 9.5 cm., and in the axis of the trunk 9.5 cm. This area of discoloration extends 2 cm. above Poupart's ligament, at which point it is 4 cm. in length (this latter measurement made parallel with Poupart's ligament). The area is less tense than the corresponding area on the opposite side but similarly colored and with denser margins.

The lower part of the abdomen is flat, or nearly so, the costal margins prominent and the epigastrium slightly bulging. There is a suggestion of a rachitic rosary. The sternal ends of the clavicles are slightly enlarged and the sternoclavicular attachments very relaxed, almost permitting discoloration. The shoulder and wrist-joints, and to a lesser degree, the elbow, knee, and ankle-joints are relaxed; the amount of lateral movement at the wrist and shoulder-joints is strikingly in excess of the normal. The lower end of the radius and tibia (right and left) are apparently enlarged but not conspicuously so. We were not allowed to incise them; they may have been slightly rachitic.

The forehead is prominent, the calvarium large, suggesting the general contour of a slightly hydrocephalic head, the lips are purplish and dry, the pupils are dilated and the eyes slightly sunken.

The axillary, cervical and submaxillary lymph-nodes are notably enlarged; in the axilla nodes possessing diameters of 1.5 cm. can be felt. The anterior cervical nodes are smaller, but distinct chains can be palpated along the posterior borders of the sternocleidomastoid muscle. Under each mandibular angle is located a node approximately 1 cm. in diameter. As none of these areas was subjected to dissection the measurements given could be estimated only. The tonsils appear slightly enlarged. The oral mucosa is pale but without any discernible lesion.

Internal Examination.—The subcutaneous fat over the chest and abdomen, along the median incision, is scanty but normal in color and texture. The musculature of the chest and abdomen is normal in color and texture, but rather poorly developed.

The peritoneum is normal, the transverse colon considerably distended. There is purplish discoloration of the tissues of all the right half of the pelvis extending down behind the rectum, along the anterior sacral border into the broad ligament, slightly over the posterior part of the bladder and upward anteriorly 4 cm. above Poupart's ligament, corresponding to the already described area of discoloration on the external surface; laterally, on the right side, the purplish shading reaches a point just above the head of the colon. This irregular area of purplish mottling and suffusion is not palpable, although its echymotic character is fairly marked. There is slight echymosis in the neighborhood of the femoral ring of the left side.

The pleuras are dry, as is the pericardium. Both serosas are normal.

The thymus is exceptionally large, extending anteriorly below the middle of the heart, latterly into the mediastinum, and above to and partly occupying the suprasternal notch. It is an arrow-shaped organ, 9 cm. in length, 5 cm. in width, and 0.7 cm. in thickness. It extends along the trachea as a single body for 1.5 cm., then divides into two equal parts more or less cylindrical in outline and 2 cm. in length that are projected upward along the sides of the trachea. Weight, 20 grams.

Histologically, the organ shows no specially noteworthy abnormality. The secondary lobules are much larger than normal in a child of this age. The increased volume seems to depend upon persistence or hyperplasia of the lymphoid elements. The differentiation between periphery and cortex is ill-defined. The bodies of Hassall (concentric corpuscles) are unusually abundant. At a few points rhexis has occurred, and small areas of intercellular hemorrhage, not at any point large or abundant, are occasionally seen. Lipomatous substitution of the adenoid tissue is not at any point in progress. It might be well to note that in many cases persistence of the thymus has been found as a part of the morbid anatomy of rickets.

Heart: The cavities of the right side are distended and occupied by clots, which for the most part are white or the color of chicken fat, with superimposed purplish coagulums. The left side is empty. The valves and orifices of the right and left sides appear normal, except as noted below. The foramen ovale is obliquely patulous, the opening barely transmitting a grooved director. It is 0.3 cm. by 0.25 cm. in size. There is a small patch of atheroma on the ventricular aspect of the anterior leaflet of the mitral. The myocardium is pale, but fairly firm in texture. Weight, 85 grams.

Histologically, the myocardium shows no conspicuous abnormality. Occasional fibers are slightly granular; fat is absent. The smaller coronary branches are not altered.

The presence of even a small atheromatous plaque in the mitral leaflet in one so young indicates the existence of some noxious influence, possibly syphilis, or it may be rickets, as the relatively small heart and thin walled vessels would seem to refute any suggestion that the alteration here noted depended upon heightened vascular stress. The change described below as present in the aorta also supports either of the former views.

The aorta just above the aortic orifice is the seat of a diffuse yellowish infiltration that surrounds the coronary arteries, completely encircling the aorta and has thickened the aorta particularly in the neighborhood of the coronary orifices. The thickening of the aortic wall is at the expense of the lumen. The right coronary artery is surrounded by a distinct zone of such infiltration. Other macroscopic evidence of arterial disease was not found beyond the aorta.

Histologically, longitudinal and transverse sections of the infiltrated aorta show the usual changes of an atheromatous patch. The intima is intact and slightly thickened; the subintimal elastica fragmented at the margin of the area and not demonstrable near its center. The media is partly involved and between the altered media and intima is a necrotic accumulation containing cellular debris, fragments of elastica and granular detritus. Evidences of calcific change are wanting. Sections so oriented as to include the coronary exit show that the process extends but a short distance (1 mm. or 2 mm.) into that vessel. As yet the sectional area of the coronary orifice has not been altered.

Left lung: The superior lobe contains a number of small areas of atelectasis 5 mm. to 10 mm. in diameter, irregular in outline, evidently recent. In the base of the lower lobe anteriorly is a larger, partly collapsed area, not, however, airless, measuring 0.5 cm. by 1.5 cm. The subpleural tissue posteriorly is edematous and the seat of numerous petechial hemorrhages; similar hemorrhages are also present on the diaphragmatic surface and along the anterior margin of the organ. Centrally and toward the upper portion of the lower lobe is a purplish red area 2.5 cm. in length and 1 cm. in width that appears quite airless. Toward the base are numerous smaller areas possessing the same characters. Areas of solidification varying in size from 0.5 cm. to 1 cm. are also present in the upper lobe. Weight, 110 grams.

Right lung: This organ is, in a general way, the seat of changes essentially the same as those noted as present in the left. They are a little more marked posteriorly and less evident at the apex and along the anterior and diaphragmatic aspects. Weight, 125 grams.

The larger bronchi of both organs are the seat of edema and redness of the mucous membrane, and often contain a frothy red mucus.

There is a mucosanguinolent frothy fluid in the trachea. Histologically, the changes present in the air passages and lungs may be summed up as (1) catarrhal bronchitis, (2) bronchiolitis, (3) lobular pneumonia. None of these is very advanced although all the blocks examined show the changes. The mucosa of the trachea and bronchi, large and small, shows epithelial desquamation, serous and leukocytic infiltration of the submucosa of the large tubes and peribronchial tissues of the smaller. Here and there throughout the sections are lobules or parts of lobules inundated with mucus or overdistended by compensatory efforts. There is very little inter-vascular cellular infiltration.

Properly stained preparations show the presence of an organism possessing the morphology and tinctorial characters of the pneumococcus. The bacteria are not numerically conspicuous although widely distributed.

The peribronchial and mediastinal lymph-nodes, and especially those situated at the bifurcation of the trachea are enlarged and slightly matted together. The larger masses vary in size from 0.5 cm. to 1.5 cm. in diameter, are tense, evidently swollen and, on section, contain greyish dots 1 mm. to 2 mm. in diameter possessing the macroscopic characters of tubercles. The histology of these glands will be given below with other lymphadenoid groups.

The spleen is relatively firm, its pulp of normal density, possibly a little paler than normal. The adenoid groups are not perceptibly changed. Weight, 55 grams.¹

The adrenals are normal in size and general appearance. The left kidney has retained its fetal lobulation; it is rather hyperemic, soft and cloudy. The cortex is slightly swollen; the labyrinthian areas hyperemic; the malpighian bodies not more evident than usual. The capsule is easily detached; the stripped surface is red and edematous; the redness is rather punctate. The pelvis is normal. Weight, 60 grams.

The right kidney shows essentially the same changes as the left. Weight, 55 grams.

The ureters are normal. The right ureter can be traced downward through the area of hemorrhage; there is no evidence of pressure on it within this area; the mucosa is normal.

Histologically, the kidneys manifest no evidence of any old lesion, but show to a most marked degree the presence of alterations of recent origin. The labyrinthian areas are frequently the seat of irregular intertubular and intratubular hemorrhage. The hemorrhages are recent, the extravasated blood unaltered; tubules are frequently distended with blood-casts. The epithelium of the convoluted tubules is often granular and stains defectively; at no point has it desquamated. The malpighian tufts are frequently engorged, but in exceptional instances only is a tuft found in which free hemorrhage has occurred.

¹For convenience in reference the histology of the organ is incorporated with the autopsy record. The technic has been practically the same for all. Selected blocks of tissue were fixed in Bensley's solution, washed, dehydrated, infiltrated with paraffin, sectioned and stained by approved laboratory methods. The findings in each instance are epitomized in this report.

¹Unfortunately the pieces of spleen, adrenal, stomach, duodenum and pancreas were not set aside for histologic study or were mislaid. There is no reason to suppose that a histologic study of any of these organs would throw additional light on the cause of death; possibly it might have shown lesions corroborative of the general condition indicated by what was found in other structures.

Bladder: With the exception of the subserous suffusion, already mentioned as present under the peritoneal coat, the organ shows no gross lesions. Urethra normal, except at external orifice, as previously described.

The internal and external genitalia show no noteworthy abnormality not already recorded.

The esophagus, stomach and intestines show no important change. The agminated patches are inconspicuous, the solitary follicles prominent. The mucosa of the stomach and lower end of the esophagus show slight erosions thought to be evidences of postmortem digestion.

The pancreas is partly annular, extending about half way round the duodenum. It shows no gross lesion. Weight, 45 grams.

Liver: The biliary passages are patulous and normal. The gallbladder lightly distended by apparently normal bile. The superior surface of the right lobe of the liver shows several areas greyish-white in color, irregular in outline, 0.2 cm. to 0.5 cm. in diameter—apparently focal necroses. Posteriorly the organ is lightly congested. There is no special noteworthy lesion.

The mesenteric glands are notably increased in size. Some of the largest are ovoid, measuring 1.5 cm. by 2 cm.; they are fairly numerous at many points, but particularly so in the sigmoid area. They are equally enlarged, though less abundant in the ileocecal region. The enlarged nodules are often tense, the exterior mottled, showing areas of greyish or yellowish-white on a rather pinkish background. The investing peritoneum is smooth and transparent, and the nodes easily freed from the adjacent tissue. On section they are greyish, succulent, and contain minute whitish areas that suggest tubercles; at points there is a suggestion of caseation, but nowhere is this change striking.

The retroperitoneal enlargements are evident, but less abundant. On section these nodes show the same general characters as those in the mesentery.

Macroscopically, the axillary, cervical, submaxillary, mediastinal, peribronchial, mesenteric and retroperitoneal lymph-nodes show essentially the same features. The following histologic description is based on examination of the mesenteric, mediastinal and peribronchial systems.

Histologically, the lymph-nodes manifest those changes characteristic of a moderate degree of widely disseminated infection by the tubercle bacillus. Distinct caseation is scantily present in occasional nodes from all the systems examined; it seems apparent that the peribronchial and mediastinal groups are most involved; they are also the seat of mixed infection. Many nodes are not caseous, nor do they contain macroscopic nor microscopic tubercles, although some of them contain tubercle bacilli. In such nodes the peripheral and follicular sinuses are distended by uninuclear leukocytes and desquamating endothelial cells from the walls; the medullary cords are also closely packed. Occasionally in the peribronchial system fibrin can be demonstrated indicating an acute and active character in the process. In some of these glands pneumococci were identified.

Dissection of the thighs and pelvis: From the median incision two incisions are extended laterally to about the center of Poupart's ligament and then downward on the anterior surface of each thigh following, as nearly as possible, a line parallel with the axis of Scarpa's triangle and extending beyond the area of notable discoloration. Inoculations are taken from beneath the deep fascia and finally the arterial and venous trunks partly exposed. Water is forced through the abdominal aorta into each iliac artery until the vessels distend fully. The water oozes from the adjacent infiltrated tissues while the arterial trunks become tense. The veins are similarly tested and with like results. These tests satisfactorily establish that none of the large trunks, or important branches, is lacerated. That the vessels are patulous is also established by opening them at Hunter's canal and observing that the water flows through without obstruction; the thin-walled femoral and iliac veins can be seen to be free from any obstructing or mural thrombus.

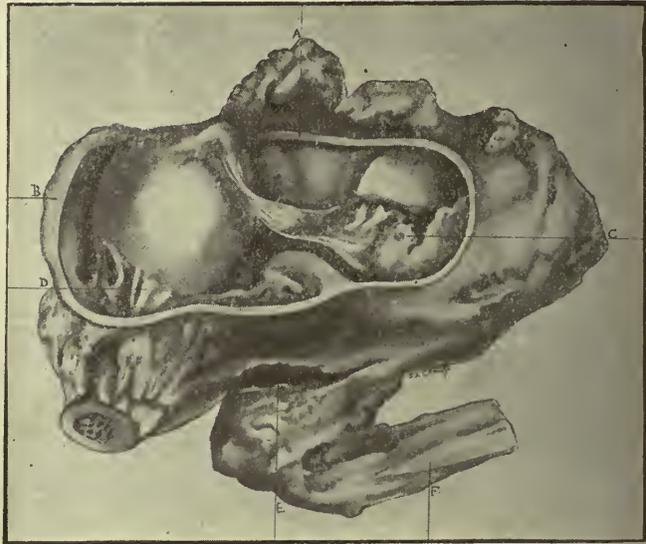
The dissection is now extended exposing the muscles of the thigh and finally the hip-joints. The anterior crural nerves and their branches are macroscopically intact. There is considerable difficulty in identifying the various anatomic structure on account of the extensive hemorrhagic infiltration to which the superficial discoloration already described evidently is due. The condition on the right side will be described in detail, followed by an account of the left side.

In the cellular and fatty tissue beneath the deep fascia are loculi containing coagulated blood; these small irregular cavities vary in size, the largest scarcely exceeding 1.5 cm. in its maximum diameter. Evidently a number of these spaces may communicate either directly or indirectly. The total amount of blood extravasated cannot be estimated with any degree of accuracy, but is considerable. The distinct cavities containing blood are in the neighborhood of the femoral sheath and beneath the sartorius muscle. (Later a few small loculi were found behind the bone; they were not, however, of notable size.) The inner border of the sartorius and the anterior part of the adductor longus are suffused to a moderate degree. The muscles forming the floor of Scarpa's triangle (iliacus, psoas, pectineus, and, in part, the long and short adductors) are also suffused with blood. The tensor vaginæ femoris and gluteal

muscles contain but a few points of interstitial hemorrhage. The intense purplish black staining of the muscles renders it quite impossible to determine accurately just how much, if any, real laceration is present. There are valid objections to complete dissection of the limb, but a fairly exhaustive examination of the exposed muscles fails to disclose any extensive single or massive laceration, although what might be termed a fibrillar dissociation is present in nearly all the dissected muscles already mentioned. The solutions in the continuity of solid muscle bodies are oblique, mixed longitudinal and slightly oblique, but not directly transverse fissurings. The muscles are notably flaccid, probably as a result of post-mortem rigidity and coagulative changes in the extravasated blood.

If there be any laceration of branches of the internal iliac artery a fairly comprehensive examination of the areas in which they are distributed, reinforced by the hydrostatic test already described, fails to disclose it. The intrapelvic suffusion previously mentioned is found on incision to be in the cellular tissue immediately beneath the serosa only, and so far as can be determined, has reached the areas mentioned by infiltration from the neighborhood of the femoral canal.

The hip-joint: The head of the femur seems to be almost in place, but on closer examination, after incision of the capsular ligament, is found to be resting with the margin of the articular surface on the posterior-superior brim of the acetabulum. The head, apparently as a result of fibrous adhesions, cannot be



Right hip-joint. A, thickened capsular ligament. B, capsular ligament at point of maximum thickening. C, ligamentum teres occupying the greater part of the acetabulum; the notable elongation is shown by the relaxed ligament extending to the head of the femur. D, the leader from D is over the line of fracture in the neck of the femur; the point of separation does not show, as it is covered by periosteum. E, fracture of ischium; the periosteum has been divided, showing oblique line of separation. F, second fracture of the ischium; the periosteum is intact and the line of fracture indicated only by the slight darkening due to subperiosteal hemorrhage.

replaced within the joint, although no degree of force was used in the attempt. The capsular ligament and ligamentum teres are relaxed. A slight effort at straightening the limb is followed by the immediate displacement of the head of the femur upward and backward. The innominate bone just back of and above the acetabulum is smooth and seems a little more dense than elsewhere. Realizing that a careful study of the bone and joint at the necropsy would not be possible the ilium was divided just below the inferior curved line and also through the body and ramus of the pubes near the angle and the femur sectioned just below the trochanter. Recognizing the presence of fractures great care is necessary in removing the specimen and force must be avoided in order to prevent any further alteration in the architecture and relation of the structures to be examined. This specimen was removed to the laboratory and partly dissected by Dr. Aller G. Ellis, who submits the following detailed description:

The specimen as removed consists of those portions of the right innominate bone and upper extremity of the right femur that include all the structures entering into the formation of the right hip-joint. The capsular ligament has been incised along the anterior and superior margin of the acetabulum; it is much thicker posteriorly and externally than below and in front. The acetabulum is slightly flattened, measuring 2.75 cm. in the vertical and 2.25 cm. in the horizontal axis. The greatest depth of the cavity proper is 0.7 cm. The ligamentum teres is 5.5 cm. long, 0.4 cm. wide, and 0.2 cm. thick at its

middle, expanding at both ends. The acetabular insertion is expanded so that it occupies all of the anterior third of the cavity. In addition to this an extension 0.3 cm. thick spreads over about half of the remaining two-thirds of the floor of the acetabulum. The ileofemoral ligament is indistinguishable from the capsular, and the cotyloid and transverse ligaments cannot be exposed without undesirable mutilation of the specimen. The head of the femur is slightly flattened antero-posteriorly. There is a lentil-shaped area of flattening of the articular surface that corresponds to the point of attachment of the ligamentum teres. The ligamentum teres is inserted on the upper portion of an almost plane surface that measures 1.75 cm. by 1.5 cm. This flattened surface corresponds to a similar area on the posterior margin of the acetabulum, the latter area being formed partly of the bony wall of the acetabular cavity and partly by compressed ligamentous tissue.

There is an intracapsular fracture of the neck of the femur. The line of separation passes obliquely across the neck of the bone and at the upper border almost reaches the juxtaepiphyseal line of the head. At the lower border it is 1.5 cm. from that line. The periosteum for some distance on either side of the line of fracture has been separated from the bone by subperiosteal hemorrhage. There is a fracture of the ischium extending through the body of that bone in an almost horizontal plane. The highest point of the line of separation is external where it is approximately 0.5 cm. below the acetabular margin. Subperiosteal hemorrhage is present around this fracture. There is also a second fracture of the ischium passing transversely through the ascending ramus at a point 0.8 cm. above the lower boundary of the obturator foramen. No fragment in any of the fractures shows the slightest displacement; there is no perceptible separation and the slight periosteal hemorrhage is the most conspicuous feature present at the line of separation. The periosteum holds the fragments in accurate apposition.

The left side differs from the right in degree of reposition but in no essential anatomic character. The hemorrhagic infiltration is very much less, but the distribution in the thigh is practically the same as on the other side. There are a few loculi similar to those mentioned as present on the right and distributed along the course of the femoral sheath. The intermuscular and intramuscular suffusion is nothing like so marked as that seen on the opposite side. The head of the femur is scarcely more than raised on the brim of the acetabulum upon which the articular surface rests. The condition of the acetabulum, head of femur and ligaments seems the same as on the opposite side, and a repetition of the description does not seem necessary. There is no noteworthy difference between the periarticular structures on the two sides except that on the left fibrous adhesions are more conspicuous and the head of the bone seems more firmly anchored. This difference is probably due to less thorough dissolution of adhesions possibly originally equally firm on the two sides. No fractures are present on the left side. After section of the almost unresisting muscles it was found almost impossible to place the head of the femur in the acetabulum, although the capsular ligament is opened anteriorly and two fingers placed in the joint as aids to reposition. The resistance to restitution to position seems to be great thickening and dense fibrous adhesions posteriorly; as on the other side, the bulky ligamentum teres occupies the cavity of the acetabulum. No specimen from this side was preserved.

Permission to examine the central nervous system was not obtained.

Bacteriology.—Inoculations on agar and into bouillon were made from the areas of hemorrhagic infiltration and loculi of blood in the thighs, also from the pleuras, pericardium, blood of the heart, spleen, and liver, but no growths were observed. Tubercle bacilli, as already noted, are present in many of the lymph-nodes, and an organism believed to be the pneumococcus is present in the sections of the lung and peribronchial lymphatics. The last named organism not infrequently fails to develop in cultures made from tissues in which it can be demonstrated by staining methods.

ACUTE LEUKEMIA.*

BY

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Personal experience with two cases of acute leukemia within the past two years directed my attention to this subject and led to a study of the recorded cases and data bearing on it. It is the purpose of this paper to present especially the clinical characteristics of acute leukemia, based on these personal observations and studies of the published data.

Leukemia is a disease sharply distinguished by certain marked blood changes, lesions of the hematopoietic

organs, and various characteristic anatomic and clinical phenomena. But while leukemia in general is thus distinctly characterized, the disease manifests itself in two or three forms or varieties which are ordinarily markedly and sharply distinct from one another. The two main hematologic and anatomic types of leukemia are the myelemic and the lymphemic forms.

The myelemic variety is characterized by lesions in the bone marrow (supposedly the primary and fundamental lesions of the disease), usually associated with great hypertrophy of the spleen, by an enormous increase in the number of leukocytes in the blood, myelocytes appearing in large number and basophile leukocytes also becoming abundant, and by a decrease in the number of red blood-cells and the appearance of numerous nucleated and other abnormal red cells. The lymph glands are little or only secondarily involved. This form of leukemia is called myelemic or myelocytic in allusion to the myelocytes and the marrow involvement; it is also termed the myeloid, myelogenous, medullary, and splenomedullary form.

The lymphemic or lymphatic variety of leukemia is characterized by enlargement and involvement of the lymphoid glands and structures, often or usually with hypertrophy of the spleen, by an enormous increase of the lymphocytes in the blood, and decrease of the red cells. The bone marrow involvement is usually much less marked than the glandular changes; myelocytes, basophile leukocytes, and nucleated or otherwise abnormal red cells are absent or few in the blood. The term lymphemic (or lymphocytic) alludes to the primary involvement of the lymph glands and the increase of lymphocytes. In some of the cases the small lymphocytes are the predominating variety of leukocytes; in others the large lymphocytes greatly predominate; these might be termed the microlymphemic and macrolymphemic forms of leukemia, respectively.

The spleen may be and usually is enlarged in both forms of leukemia, so that splenic hypertrophy taken alone does not signify which type of leukemia is present; the blood findings and other factors must be considered in making the diagnosis. By virtue of its malpighian bodies the spleen is partly a lymphatic structure as well as a hemal gland; and in some cases of lymphatic leukemia the spleen is affected alone, the lymphatic glands elsewhere being little or not at all enlarged.

Cases of leukemia can also be quite sharply divided into acute and chronic. The acute cases are chiefly if not exclusively of the lymphatic variety, and the blood is mostly of the macrolymphemic type. While the distinctions between the acute and chronic forms are rather differences of degree than of kind, yet the clinical course and characteristics of acute leukemia are so well marked that this form of the disease presents a distinctive clinical picture, contrasting well with the more chronic cases. Acute leukemia has only within the last fifteen years achieved recognition as a special form of disease, and it is not yet in standard manuals of medicine given the systematic consideration which its distinctive character warrants. The recorded observations of the disease are now sufficiently numerous to enable its clinical features to be laid down with some system and completeness.

History.—The first case of acute leukemia recorded was that of Friedreich's, published in 1857. In 1889 Ebstein published a study of 16 cases of acute leukemia found on record up to that time, together with a case of his own. Ebstein's paper directed attention to this subject, and since that time numerous cases and studies of the disease have been published. Up to and including the year 1902 I have found upwards of 119 cases of acute leukemia reported.

Frequency.—An estimate of the relative frequency of acute and chronic leukemia in this country can be obtained by combining the following series of cases of leukemia reported by American observers:

*A portion of a paper which was awarded honorable mention in an essay prize competition under the auspices of the Medical Society of the District of Columbia, 1902. Read before the Medical Society of the District of Columbia, January 28, 1903.

Observer.	Date.	Number of cases of leukemia observed.				Reference.
		Acute.	Subacute.	Chronic.	Total.	
Osler	To 1901.	3	.....	21	24	Practice of Medicine, 1911.
Cabot	To 1901.	5	5	44	54	Clinical Examination of Blood, 1901.
Taylor	To 1900.	2	.....	14	16	Contributions William Pepper Laboratory Clinical Medicine, 1900, 148.
Doek	To 1900.	1	.....	19	20	Phila. Medical Journal, 1900, v, 741.
Janeway.	1898.	1	1	5	7	Transactions Association American Physicians, 1898, xiii, 146.
Total....		12	6	103	121	

Some of the cases here given as subacute would probably by other observers have been classed as acute. Out of a total of 121 cases of leukemia 12 (or more) cases were acute; if these are representative statistics, as they doubtless are, it can be accepted that in this country at least one-tenth, and perhaps one-eighth, of all cases of leukemia are acute. Data are not at hand on which to base an estimate of the frequency of acute leukemia in Europe; in the city of Berlin Fraenkel has claimed that the acute cases exceed the chronic in frequency.

According to the last census of the United States, during the year 1900 there were 207 deaths from leukemia in those parts of the country in which vital statistics were kept, representing a population of 28,807,269, and out of a total number of deaths for the year in those districts of 512,669; this gives a general rate of 40.4 deaths from leukemia out of every 100,000 deaths from all causes, and 7.2 deaths per annum out of every 1,000,000 of population; or 1 death from leukemia out of every 2,477 deaths, and 1 death from it annually out of every 139,166 inhabitants.

The deathrate from leukemia in the District of Columbia, as shown by the Health Office statistics, is not far from the general rate for the entire country. During the 15 years 1888-1902 there were 27 deaths from leukemia in the District, an average of 1.8 deaths per year out of an annual average of 5,780 deaths from all causes and an average population of 261,633; this is equivalent to 31.14 deaths from leukemia out of every 100,000 deaths and 6.88 deaths annually for every 1,000,000 of population.

Reckoning one-tenth of all deaths from leukemia as due to the acute cases there would be an average for the entire country of about one death from acute leukemia out of every 25,000 deaths from all causes, an average of about 55 deaths from the disease each year in the whole United States, and about one case in the District of Columbia for every 5½ years.

Occurrence in Animals.—Like the other varieties of the disease acute leukemia may occur in animals, a typical case in a calf having been reported (Wolf').

Age.—While the greater number of cases of chronic leukemia occur during the middle decades of life acute leukemia affects by preference the first three decades. About three-fourths of all the cases of acute leukemia develop below the age of 30 years. The second decade of life, from 10 to 20 years, leads in the number of cases, though nearly as many cases occur from 20 to 30; a considerable proportion of the cases, perhaps one-fifth, develop under 10 years; numerous cases also occur from 30 to 40, but over 40 the cases are much less numerous. Acute leukemia has been reported at as late as 59, 60, and 71 years (though in the latter case there is some question as to the diagnosis). In the youngest case reported an infant was born with symptoms of the disease and died of it 19 days after birth. As at no time is susceptibility to the disease greater than during the early years acute leukemia, even though rare, must be included among the diseases of childhood.

Sex.—As in the chronic forms of the disease males are much more liable to acute leukemia than are females. The males affected outnumber the females two or three to one.

Duration.—On account of its frequent gradual and insidious development it is difficult to fix a definite time of beginning in many cases of acute leukemia, and consequently to determine the duration of the disease with exactness. The time from the beginning of symptoms sufficiently marked to attract attention or require treatment can be more definitely estimated. The duration of the active period of the disease ranges from a few days to several weeks, ordinarily from three to six weeks. The briefest case recorded was alleged to have lasted only three and a half days, and in several cases the duration has been under ten days; in some of these instances there was probably an unobserved preliminary period of development of the lesions, or a premature termination was caused by some such accident as cerebral hemorrhage. On the other hand, some observers have considered cases lasting as long as three or four months acute. Some authorities fix an arbitrary time limit, six to nine weeks, as the dividing line between acute and chronic cases, those whose duration falls within the limit being classed as acute, those exceeding it as chronic. No such arbitrary time limit can be fixed on any rational or satisfactory basis; the distinction between acute and chronic cases of leukemia rests rationally and naturally on the characteristic virulence and rapid progress of the morbid conditions in the former. While intermediate cases difficult to classify may occur, or while what one classes as subacute another will regard as acute, a differentiation between cases of acute and chronic leukemia can be made entirely without reference to any fixed time limit as readily as, for instance, between acute and subacute rheumatism.

Course.—Acute leukemia usually begins to develop gradually and with prodromal phenomena, though sometimes it starts in abruptly. The advent of the active period of the disease is declared by various initial symptoms too prominent to escape notice; after which it pursues a steady and progressive course to a fatal termination.

Prodromes.—The disease often begins with prodromal symptoms, malaise, weakness, indisposition, lassitude, etc., which develop insidiously and gradually, and continue for a few days or even two or three weeks before the active period sets in. In some cases, however, the onset of active symptoms is abrupt and sudden, without being preceded by prodromal phenomena. The leukemic changes may attain considerable development without their presence being suspected, and be well advanced before symptoms appear to call attention to their existence.

Onset.—The initial symptoms ushering in the active stage of acute leukemia which first attract special attention to the case, and for which medical advice may be first sought, vary in different cases. The commonest initial symptom is hemorrhage in some locality, most frequently into the subcutaneous tissues or from the nose or mouth, less frequently from other situations, as the stomach or urinary organs; many of the reported cases have, at the outset, been diagnosed purpura hæmorrhagica. Another frequent introductory condition is the stomatitis or pharyngitis that is so conspicuous a feature of this disease. A smaller number of patients first come under treatment for headache, pains in the face, side, or limbs, chills, fever, asthenia, anorexia, tonsillar enlargement, edema of the face, and occasionally for symptoms simulating articular rheumatism.

General Conditions.—Fever in most cases is a regular and well-marked feature of the disease, though in some of the cases it has been absent; it is usually irregular in type, at times intermittent, ranges from moderate to high (up to 104° or over), and may be present through the greater part of the course of the disease. Chills are

not usual, except sometimes at the beginning. Perspiration is apt to be abundant, and the skin is often bathed in copious sweat. A disagreeable foul odor often emanates from the body, derived from the oral lesions or the perspiration. The skin is very pale and anemic. Asthenia is marked, beginning early or in the prodromal period as a general lassitude, and gradually increasing to profound weakness. Emaciation is marked and progressive, and may reach an extreme degree toward the end. The extreme prostration of the patient gives the impression of being due to profound toxemia. While the progress of the disease is almost always continuous and uninterrupted, in two or three cases a temporary remission of symptoms has occurred.

Circulatory System.—As acute leukemia is primarily a disease of the hematopoietic organs and blood, the most marked and characteristic features of the disease are manifested in these structures. Of the two morphologic types of leukemia, myelomic and lymphatic, acute leukemia is almost always, if not always, of the lymphatic type. Only a few of the acute cases are recorded as of the medullary type, and in these the conditions present are mostly reported incompletely and unsatisfactorily, either prior to or without the use of recent hematologic methods, so that a satisfactory judgment as to whether the myelomic form of leukemia can run a typical acute course can not yet be formed. According to Askanazy, the very rare cases of purely medullary leukemia (without splenic or glandular involvement) are mostly acute, but the precise relationship of myelomic and acute leukemia is yet to be worked out.

Acute leukemia is, then, preeminently, if not exclusively, of lymphatic type; and of the two forms of this type, associated with a predominance of small or of large lymphocytes respectively, it is preeminently of the latter or macrolymphemic form.

Lymph Glands.—In accordance with its lymphatic type, the lymphatic glands and other lymphoid structures undergo marked and widespread enlargement in the great majority of cases of acute leukemia, due to the excessive lymphocytic hyperplasia. Occasionally glandular enlargement is absent, or very slight, or confined to a single gland (as the thymus), or a group of glands; the spleen, however, is enlarged in such instances. The enlargement may be unevenly distributed, one group of glands being affected while others are not, and different glands being enlarged unequally. The glandular hypertrophy begins early in the disease, but increase in size does not progress throughout the entire course; after reaching a certain size (which may be early) no further enlargement occurs. The size attained by the glands varies greatly; it is usually moderate, but may be extreme. The enlargement is usually less than that common in pseudoleukemia and other conditions. At times the glandular enlargement subsides under the influence of intercurrent infections or hemorrhage.

Enlargement of the superficial lymph glands, submaxillary, cervical, axillary, and inguinal, so that they can be seen or at least felt, usually occurs and is a conspicuous and characteristic feature of the disease; usually the submaxillary or cervical glands reach a greater size than the other superficial glands, and are often more enlarged on one side than on the other. At times the superficial glands are not enlarged materially, while autopsy may show hypertrophy of the internal glands. The bronchial, mediastinal, mesenteric, portal, and other deep-seated lymph glands share in the general hyperplasia. The thymus is often enlarged in young subjects or persistent in older ones; the enlargement may be so great as to be evident on physical examination during life. The lymphoid structures of the alimentary tract usually participate in the hyperplasia, causing the marked involvement of this tract in acute leukemia. The tonsils are usually enlarged, causing obstruction to deglutition; hyperplasia of the lymphoid tissue in the mucous membrane of the mouth and pharynx may pro-

duce the characteristic stomatitis and pharyngitis of the disease. Enlargement and ulceration of the lymphoid follicles of the stomach, and especially of the intestine, occur in many of the cases.

Spleen.—The spleen enlarges in the great majority of the cases along with the glands. At times it is enlarged, perhaps to an extreme degree, when the lymph glands are affected little or not at all. The hypertrophy may be slight; exceptionally it may be enormous, and the organ may exhibit precisely the same excessive size and hardness characteristic of the lienomedullary form of leukemia. The splenic hypertrophy often develops rapidly under direct observation in the earlier period of the disease, the progress of the enlargement being observable from day to day. The organ does not ordinarily continue to enlarge throughout the course of the malady, but after reaching a certain development its size remains constant. Sometimes toward the end or under the influence of sepsis or hemorrhage the hypertrophied spleen undergoes decrease of size.

Marrow.—Tenderness of the bones is present in many cases of acute leukemia, and it is believed that in all cases there is more or less morphologic alteration of the bone marrow. The marrow lesions in all ordinary cases of acute leukemia are, however, comparatively slight, much less marked than in the true medullary forms of leukemia. If acute myelomic leukemia occurs, primary marrow lesions with less glandular involvement would be expected in such cases.

From the foregoing it will be seen that, so far as the hematopoietic organs are concerned, acute leukemia occurs in two types: a glandular type, much the most frequent, in which the glands are predominantly enlarged, with or without splenic hypertrophy; and a splenic type, in which the spleen is hypertrophied (often to an extreme degree) with the glands but slightly or not at all involved.

One case of acute lymphemic leukemia has been reported in which it was alleged that no enlargement or macroscopic changes of the lymph glands, spleen, or marrow were present (A. Dennig²). Another case of acute leukemia has been recently reported presenting typical lymphemia with extensive lymphoid alteration of the bone marrow, but with the lymph glands and spleen practically unaffected (Dorothy Reed³).

Blood.—The changes exhibited by the blood are highly characteristic, and in most cases the diagnosis of acute leukemia can be made from the blood findings alone.

The *red corpuscles* steadily, continuously, and rapidly decrease in number from the beginning to the end. The hemoglobin also diminishes parallel with the number of red cells. This rapid progressive anemia, running along with the progressive emaciation and asthenia, is highly characteristic of acute leukemia. The number of red cells often goes below 2,500,000, and sometimes below 1,000,000 per cubic millimeter. In marked contrast to the conditions present in myelomic leukemia, nucleated, poikilocytic, and polychromatophilic red cells are usually (though not always) absent or very scarce in acute leukemia.

The *leukocytes* in the circulating blood are greatly increased in number in acute leukemia. Sometimes their number is as great as ordinarily occurs in the chronic forms of the disease, that is, up to or exceeding 500,000 per cubic millimeter. As a rule, however, their number is much lower than in the chronic cases, in many instances not going over 100,000 or even 50,000. A few cases have been observed before the leukocytes had begun to increase in the blood—the so-called "pre-leukemic stage"—the number of leukocytes being found normal. While it is rare that cases are detected thus early, before the increase has begun, the patients often come under observation while the leukocytes are still increasing in number, and the rapid increase can be followed from day to day. The leukocytes may not con-

tinue to increase in number throughout the entire course, but after attaining a certain figure may remain stationary.

The varieties and proportions of the leukocytes in the blood in acute leukemia are very characteristic. An overwhelming majority of the leukocytes are lymphocytes, large and small, amounting usually to over 90% or 95% or even 99% of the total number of leukocytes. Polymorphonuclears and eosinophiles are very scarce; they may be not only relatively diminished but their absolute number per cubic millimeter is often reduced far below normal. Myelocytes and basophile leukocytes are usually absent, but are present occasionally. The leukocytic changes in the blood in this form of leukemia therefore ordinarily consist of a vast increase of lymphocytes without any increase or even with a decrease of all other forms of leukocytes—a lymphocythemia.

Much interest and importance attach to the relative proportions of the two kinds of lymphocytes, large and small. In the great majority of cases the large lymphocytes greatly outnumber the small in acute leukemia, while preponderance of the small lymphocytes is the rule in the chronic cases of lymphatic leukemia. Exceptions occur, microlymphemia being occasionally manifested in acute leukemia and macrolymphemia in chronic lymphatic leukemia, but as a general rule a great predominance of large lymphocytes is strongly diagnostic of acute leukemia and prognostic of a severe and rapid course to a fatal termination. If acute medullary leukemia occurs the myelomic blood picture of that form of the disease should be presented.

When, as frequently happens, infections develop as complications in acute leukemia the same remarkable retrogression of the hematologic phenomena takes place as in chronic leukemia; that is, the number of leukocytes in the circulating blood usually undergoes great diminution, even to or below normal figures; the relative proportions of leukocytes may or may not continue without change, either the lymphocytes remaining upward of 90% or 95% or an increase of polymorphonuclears taking place.

Leukocytic Deposits.—In acute as in chronic leukemia the accumulation of leukocytes in microscopic or macroscopic aggregations or nodules at numerous points in various organs, especially the liver, spleen, and kidney, is a marked feature of the disease.

Heart.—The heart sustains no organic change in acute leukemia, aside possibly from some myocardial softening and dilation at times in connection with the toxemia. The heart action is frequent and weak. Murmurs are sometimes present of hemic or anemic character.

Arteries.—In the published cases of leukemia little is said about the condition of the arteries. In my case reported below there was marked general arteriosclerosis of the diffuse, noncalcareous, toxic type. My attention being thus directed to this feature I took pains to examine the arteries in two cases of chronic leukemia since observed and in both found distinct arteriosclerosis. Whether this is common in leukemia cannot now be stated, but it is a point worthy of observation, as the arterial lesions may play a prominent part in the causation of the hemorrhages so characteristic of this disease.

Hemorrhages are among the most frequent, most characteristic, and most conspicuous features of acute leukemia. They probably occur in at least 90% (if not 100%) of all cases. No period in the active stage of the disease, from the beginning to the end, is exempt. Repeatedly have cases of acute leukemia when they first came under observation been diagnosed as purpura hæmorrhagica, a diagnosis which only blood examination or the progress of the case cleared up. The hemorrhages are usually multiple and repeated and occur in widely separated situations. The amount of blood actually lost varies from slight quantities to amounts sufficient to destroy life. The loss of blood in itself is not usually sufficient to endanger life, though it must

necessarily contribute to the prostration and anemia; occasionally death results directly from the loss of blood, while in other instances death follows extravasation of blood into a vital part, as in cerebral hemorrhage. While hemorrhage is a conspicuous feature of chronic forms of leukemia, in the acute cases the tendency is intensified into a profound hemorrhagic diathesis. The causes of this marked tendency are not well known; the severe anemia is one favoring factor, arteriosclerosis may be another, while in the alimentary canal the ulcerations may open into bloodvessels; but that some other factors must be influential is shown by the fact that hemorrhage may be one of the earliest manifestations of the disease before the conditions mentioned have developed to any great extent.

Much the most frequent seats of hemorrhage are the skin and the nose. Bleeding may occur in these situations from first to last. In the skin it takes the form of purpuric extravasations into the subcutaneous tissues; the purpuric areas vary in size from minute points to large patches; they are usually multiple, often very numerous, and scattered over widely separated parts of the surface. Epistaxis is also very frequent, sometimes introduces the active period of the disease, and may be repeated, profuse, and dangerous.

Bleeding from the mouth is frequent, especially in association with stomatitis. Hemorrhage from the intestine is rather common, from the stomach less frequent, sometimes originating from intestinal or gastric ulcers, sometimes not. Hematuria and hemoptysis occur occasionally. Retinal hemorrhages would probably be found in nearly all cases if looked for. Cerebral hemorrhage has occurred in a number of cases, causing hemiplegia, coma, and death; in one case it took place as early as the fourth day of active symptoms. Visceral and subserous hemorrhages and infarctions are often noted at autopsy. Aural hemorrhage may be one cause of the deafness that sometimes develops. Slight wounds may be followed by severe or fatal hemorrhage, as has occurred from splenic puncture and extraction of teeth; profuse hemorrhage has even followed a needle prick of the skin. Wounds do not always, however, bleed excessively.

Uterine hemorrhages are not common. It is a remarkable fact that so far as the few observations recorded show, labor occurring in a woman affected with acute or chronic leukemia is attended with less bleeding than in normal parturitions, some of the labors being practically bloodless.

Alimentary System.—In acute leukemia the alimentary tract suffers in intensity and prominence to a degree closely approaching that of the circulatory system, chiefly through the involvement of the lymphoid structures abounding in this region. Scarcely any of the organs or portions of the alimentary tract are exempt.

Mouth.—Stomatitis occurs in most of the cases, only a small proportion escaping. It is of the severest character, and usually causes much more pain and distress than any other feature of the disease. From the uniformity of its occurrence, its severity and painfulness, stomatitis must be ranked as one of the most prominent and characteristic clinical features of acute leukemia, almost or quite corresponding in importance to the gland and blood changes and the hemorrhages. Often it is the earliest or one of the earliest features of the disease; it may attain a high degree of development early in the case, or it may gradually progress and reach its maximum later or toward the end. The morbid condition is chiefly due to excessive proliferation of the abundant lymphoid tissue in the mucous membrane lining the gums and oral cavity, resulting in inflammatory or ulcerative conditions. The stomatitis occurs in two forms, ulcerative and pseudoscorbutic.

The ulcerative or gangrenous type has occurred in only a small proportion of cases of acute leukemia. It consists in the development of an ulcer or localized necro-

sis of tissue progressing to slough-separation and ulcer-formation at some circumscribed area or areas in the oral cavity from the tonsils to the lips. Occasionally a pseudomembrane forms over the ulcer. The portions of the gums and oral surfaces not directly involved in the necrotic process may be entirely free from any morbid involvement.

Much the commonest and most characteristic form of stomatitis or gingivitis occurring in acute leukemia is the pseudoscorbutic type, in which the oral lesions closely resemble those of scurvy. It begins with swelling, softening, and tenderness of the gums, gradually increasing until the gums are excessively swollen, soft, edematous, and spongy, and sometimes ulcerated. Serum and blood ooze abundantly from the gums, or free hemorrhage may take place. The teeth become loose, and even fall out. The lips may become greatly swollen, dry, fissured, and incrustated with sordes. Edema of the neighboring structures, as the side of the face, is frequent. The ulcerated and edematous tissues are very apt to become affected with infectious inflammations. A foul odor is given off from the mouth. The parts are very sensitive, painful, and tender. In its maximum development the stomatitis is the source of extreme discomfort and distress to the patient. On account of the swelling and pain, swallowing and movement of the mouth are greatly interfered with, and the mouth can be opened only a narrow space. The difficulty in taking food thus caused contributes materially to the malnutrition and asthenia of the patient.

Tonsils.—The tonsils, participating in the general lymphatic involvement, are frequently enlarged. The enlargement may be so great as to occlude the fauces and cause pain and difficulty in swallowing. Severe tonsillitis analogous to the gingivitis may develop, and at times the tonsils undergo marked necrosis and ulceration; pseudomembranes may form on the tonsillar ulcers. The faucial tonsils suffer most, the lingual and pharyngeal tonsils less frequently and usually less severely.

Pharynx.—The pharynx often presents lymphoid hyperplasias and inflammations similar to those of the tonsils and gums. Enlargement of the adenoid structures of the nasopharynx may be sufficient to obstruct respiration.

Stomach.—The stomach is not usually affected severely in acute leukemia. Its functional power is good, and food is well digested without distress or indigestion. The appetite may be poor or lacking, though in some cases it is remarkably good. At times the stomach presents hyperplasia of its lymphoid structures, ulcerations and hemorrhages.

Intestine.—The intestine very frequently exhibits enlargement of the lymphoid follicles, which may go on to ulceration. The mucous membrane presents large numbers of minute nodules or ulcers thickly scattered over long stretches of the bowel. The functional activity of the intestine is often not disturbed to a degree commensurate with the organic changes. Diarrhea may occur, but constipation is frequent. Intestinal hemorrhage is not infrequent, and may occur even in the absence of ulceration. Gangrenous colitis has been observed.

On the supposition that acute leukemia is infectious certain authors have suggested that the ulcers in the mouth, stomach, or intestine are the portals by which the infection enters the system. The suggestion has special weight in the case of the mouth and tonsils, on account of the severe local lesions there and the fact that the submaxillary and cervical glands are usually more enlarged than other groups of glands. The ulcers in the mouth and intestine are, however, apparently secondary to lymphoid hyperplasia, so that the leukemic process is in existence before the ulcers appear; in view of this and the fact that specific microorganisms have not been demonstrated in leukemia, the ulcers apparently do not afford entrance to primary pathogenic germs. They do,

however, often serve as points of entrance for secondary infections.

The *liver* is usually slightly or moderately enlarged to a degree evident on physical examination. This is due to aggregations of lymphocytes that are deposited in the liver substance throughout the organ, chiefly in the portal and interlobular regions.

The *respiratory system* in general suffers little in acute leukemia. Epistaxis is exceedingly frequent, often profuse, and has even proved fatal. Lymphoid proliferation and catarrhal inflammation may occur in the nasal fossas. Adenoid overgrowth in the nasopharynx may interfere with or completely obstruct respiration through the nose. Edema of the glottis, produced by extension from the neighboring tonsillar or pharyngeal inflammation, has occurred in a few instances, necessitating tracheotomy at least once. The lungs are ordinarily little affected, aside from occasional secondary conditions, as bronchial catarrh. Cough, usually slight, is not infrequently present. Hemoptysis and pulmonary infarction occur occasionally. Dyspnea, manifested by frequent respiration, is common, due probably to anemia and toxemia.

Skin.—Purpuric hemorrhages into the subcutaneous tissues are among the commonest and most characteristic features of the disease, and may appear from the very first to the very last. They may be small or large, few or many, and may appear in widely separated parts of the surface. Perspiration is usually very free. Edema of one or both sides of the face or of the cervical region is frequently observed, consequent upon the severe oral inflammation. Edema of the legs has been observed in two or three instances. Leukemic nodules and tumors of or under the skin, similar to those occasionally appearing in chronic leukemia, have been noted rarely.

Urinary Organs.—The kidneys usually present areas of characteristic leukemic infiltration, a diffuse and crowded accumulation of lymphocytes between the uriniferous tubules. Hematuria occasionally occurs. The excretory powers of the kidney are but little or not at all diminished.

The *urine* possesses the same characteristics prominent in chronic leukemia. The quantity is often increased, sometimes to more than double the normal amount. Uric acid and allied substances, derived from the breaking down of the excessive number of leukocytes, are greatly increased. Slight albuminuria may occur, but not constantly; at times peculiar proteids derived from the leukocytic nucleins appear.

The *genital organs* are rarely involved. Leukemic priapism has been observed in one case, a boy of 10. The tendency to hemorrhage does not seem to affect the uterus greatly, even postpartum bleeding being remarkably slight.

Nervous System.—The nervous phenomena in acute leukemia are chiefly functional, due apparently to toxemia; but in some cases severe conditions result from hemorrhage or leukemic infiltration into the nervous structures.

Headache, which may be intense, is not infrequent in the early period of the disease. In a few instances pain in the left side, in the splenic region, has been an early symptom; early pain in the right side has also been noted. Pains in the limbs, sometimes with swelling of the joints, a condition simulating articular rheumatism, ushered in a few of the cases. Sensitiveness of the bones on percussion is frequent. The enlarged glands are generally not painful or tender, but may be sensitive. The lesions of the mouth and throat may cause great pain and distress.

With the progress of the case the general pains—in the head, side, limbs, etc.—usually subside, and the patients often are markedly somnolent. Vertigo is frequent, and delirium of a quiet character is sometimes observed.

Cerebral hemorrhage is not infrequent, and is fol-

lowed by hemiplegia, coma, and death. Localized paralyzes, as of the facial nerve, have been observed in a few cases, due probably to hemorrhage or leukemic infiltration into the nerve.

Eye.—Retinal hemorrhages are very frequent. Leukocytic infiltration may take place in the ocular and orbital tissues, sometimes producing amaurosis. In one case the orbital leukemic infiltration was so massive as to cause marked exophthalmos.

Ear.—The development of deafness has been a notable feature in a number of cases (as in mine), probably due to hemorrhage or leukocytic infiltration into the aural structures or the auditory nerve. The anatomic relation between the facial and auditory nerves perhaps indicates some association between the deafness and the facial paralysis sometimes present.

Complications.—Acute leukemia presents conditions unusually favorable for the development of secondary infections, local and general, and complications of this character appear in a large proportion of cases. The ulcers in the mouth, throat, stomach, and intestines afford ready means of entrance for pathogenic bacteria, the lowered general condition lessens the power of resistance against bacterial growth, and the inflamed tissues in the mouth and elsewhere present favorable soil for their development.

The principal bacteria causing these secondary infections are the ordinary pyogenic organisms, staphylococci, streptococci, colon bacilli, and others. The particular form and site of the infection vary; cellulitis or abscess in the tissues about the mouth and face, alveolar abscess, suppurative tonsillitis, suppuration of cervical glands, are among the commoner complications; septicemia, endocarditis, empyema, abscesses in the lungs and other organs, phlebitis, or venous thrombosis (observed once in femoral vein, once in portal vein with ascites), etc., also occur.

These secondary infectious complications affect the clinical picture not only by superimposing their own characteristics on those of the disease, but still more by profoundly modifying the leukemic process itself. An infection complicating either acute or chronic leukemia produces marked and characteristic changes in the blood and hematopoietic organs. Under the influence of a complicating infection in acute as in chronic leukemia the leukocytes in the blood almost always greatly decrease in number, sometimes down to or even far below normal; very exceptionally the number does not decrease and even increases. Under these circumstances the differential proportions of the different kinds of leukocytes often remain unchanged; that is, the same vast preponderance of lymphocytes may continue after the incidence of an infection even when the number of leukocytes is much lowered thereby. In other cases the relative number of lymphocytes becomes lower while the polymorphonuclears are greatly increased by the infection, thus restoring the differential count to something like normal.

Not infrequently a complicating infection causes a marked subsidence and decrease in size of the enlarged glands and spleen, even to their normal volume, and with this a general improvement and amelioration of the leukemic symptoms may occur, but only temporarily. Infections, therefore, antagonize the leukemic process.

Termination.—All the cases heretofore reported have invariably progressed to a fatal termination. No authentic case of recovery or of transformation of the acute into a chronic form has yet been recorded. The commonest immediate cause of death is exhaustion, collapse, or toxemia; a minor proportion of patients die from cerebral hemorrhage or from the direct effects of excessive hemorrhage.

Diagnosis.—The characteristics of acute leukemia are so marked that difficulty in diagnosis should rarely be encountered if the case is properly investigated. The enlargement of the lymph glands and spleen, the charac-

teristic blood findings, the hemorrhages, stomatitis, febrile course, and leukemic infiltrations are conclusive. The blood conditions alone—increase of leukocytes, great preponderance of lymphocytes (especially if large)—is fairly pathognomonic. The cases often have been and are apt to be mistaken for purpura hemorrhagica or scurvy, and doubtless cases of acute leukemia have passed for such without the error ever having been discovered; but the glandular and splenic enlargement and above all the blood examination should clear up the diagnosis. Pseudoleukemia is distinguished by the blood examination. The febrile course sometimes suggests typhoid fever; but the clinical features of the two diseases are otherwise so distinct that with any degree of care confusion should hardly be possible.

General sepsis at times assumes such a form that it may closely simulate acute leukemia. It may present irregular fever, prostration, asthenia, glandular and splenic enlargement, and an increase of leukocytes as great as occurs in some cases of acute leukemia. Sepsis does not often manifest a hemorrhagic tendency, and would very exceptionally be associated with severe stomatitis. The crucial point of distinction lies in the differential count of the leukocytes; in acute leukemia nearly all the leukocytes are lymphocytes, in sepsis they are nearly all polymorphonuclears. In some of the cases reported as acute leukemia, in which differential counts are not recorded, the diagnosis as against some form of sepsis is not beyond doubt on account of the lack of complete blood examinations. It should be remembered also that sepsis is apt to complicate acute leukemia, so that even if infection is demonstrated by bacteriologic methods leukemia is not necessarily excluded.

It may occasionally happen that the blood finding may be misleading. At a stage of the disease so early that the leukocytes in the blood have not yet commenced to increase—the “preleukemic stage”—blood examination is negative; this rarely happens, but has occurred and caused confusion in diagnosis. In cases of this kind that are otherwise suspicious, examination of the blood at intervals will, if the case is acute leukemia, show the development at some time of the characteristic blood changes. Also, when under the influence of a secondary complicating infection the leukocytes have subsided to a normal number, or to a number within the range of an ordinary septic leukocytosis, difficulty in diagnosis may arise; in these circumstances a differential count showing great predominance of lymphocytes still points to acute leukemia, although lack of this characteristic predominance does not prove the absence of leukemia. In the latter case hematologic verification of the diagnosis becomes impossible; but even then, the other clinical and anatomic features of typical cases are so characteristic that, in the presence of an infection to account for a negative blood finding, a diagnosis of acute leukemia might be justified.

The *prognosis*, according to uniform experience with the disease, is hopeless, and death within a few weeks is inevitable.

Treatment.—No therapeutic measures hitherto employed seem capable of retarding or antagonizing the disease process. Arsenic in large doses, perhaps with quinin or iron, may be tried as a sort of forlorn hope. The antagonistic and favorable effects exhibited by infectious complications suggest the trial of a line of treatment similar to that of sarcoma with streptococcus toxins.

Symptomatic treatment is practically all from which results may be expected. The last days of the patient should be made as comfortable as possible, by nursing and treatment. Occasional sponging may be agreeable when fever is high or perspiration abundant; but it is not worth while to disturb the patient by systematic cold bathing for the fever. Nothing is gained by restricting the diet; the patient should be allowed whatever

his appetite may crave or he can swallow, solid or liquid, so long as the stomach is not disturbed. Strength may be sustained by liberal feeding, stimulants, and tonics. Constipation or diarrhea, excessive perspiration, tendency to bedsores, pain, etc., demand appropriate treatment. The distressing condition of the mouth and throat should be alleviated as much as possible by cleansing, antiseptic, deodorizing, astringent, or sedative lotions and applications. The usual measures for control of hemorrhage from the nose, mouth, intestine, or elsewhere should be employed. It should be remembered that even a trifling operation like opening an abscess, pulling a tooth, splenic puncture, or even pricking the skin may provoke serious or fatal hemorrhage. Complications like erysipelas, cellulitis, abscesses, edema, etc., call for the usual treatment.

Relation of Acute to Chronic Leukemia.—There are no physiologic or anatomic features presented by acute leukemia that do not occur (even though rarely) in chronic leukemia. Fever, cachexia, hemorrhages, etc., are of frequent occurrence in chronic leukemia; stomatitis and pharyngitis, while rare, have been observed in chronic cases. Conversely, there are few or no features of chronic leukemia that may not at some time appear in acute cases. The one highly though not invariably distinctive morphologic feature of acute leukemia, the excess of large lymphocytes, is probably not so much due to any essential difference in the morbid process as to its intensity or rapidity causing the appearance of leukocytes at an earlier or different stage of development.

The distinction between acute and chronic leukemia is therefore one of degree rather than of kind, and rests upon the clinical picture, the overwhelming intensity and virulence of the symptoms, the rapidity of the course. The phenomena that in chronic cases extend over three or four years are in acute cases compressed into as many weeks. The intensity of the morbid process is such that conditions that are rare in the chronic forms, such as stomatitis, are brought out with great frequency and prominence in the acute cases. It is entirely by the character and malignancy of the clinical features that acute leukemia is distinguished from the chronic forms. No arbitrary time limit can be satisfactorily fixed as a dividing line between acute, subacute, and chronic leukemia; and while intermediate cases difficult to classify may occur, just as with other diseases, in the great majority of instances the acute and chronic cases can be easily distinguished and recognized. A case running a mild course, terminating prematurely within a month or two of its onset through some such untimely accident as cerebral hemorrhage, could not be regarded as acute; and, on the contrary, it is probable that a chronic case of long standing could take on a sudden access or exacerbation of virulence and then run a really acute course.

It has been suggested that cases of leukemia can not be considered really proved acute unless blood examination at or before the beginning of the course showed the previous blood condition to have been normal, and that there was no previous latent or unsuspected leukemic condition out of which the acute case developed. Cases rarely come under observation early enough or under such circumstances that the condition of the blood prior to the leukemic changes has been determined; yet in a few instances early blood examinations have shown previously normal conditions, so that the possibility of leukemia running its entire course within a few weeks is fairly demonstrated.

The relation of pseudoleukemia to acute leukemia is a very interesting subject, but presents no features differing from its relation to lymphatic leukemia in general.

Etiology.—Acute leukemia presents strongly the appearances of an infectious disease, and has by many been regarded as of infectious character. As the acute and chronic forms of leukemia are morphologically iden-

tical and differ only in the intensity and rapidity of development, the two forms are obviously of like etiology. The results of a study of the etiology of leukemia will be presented in a subsequent article, in which the causation of acute leukemia will be considered in connection with the disease in general. Suffice it to say that for neither acute nor chronic leukemia has a causative parasite been demonstrated, nor has any direct proof of infectiousness, transmissibility, or contagiousness been obtained.

CASE I.—The first patient with acute leukemia seen by me was under the charge of Dr. J. R. Bromwell, of this city,⁴ who reported it to the Washington Obstetrical and Gynecological Society April 4, 1902. This was a case of the splenic type, the spleen being enormously enlarged, but no glandular involvement in the absence of an autopsy being apparent. It was in a boy of 14 and ran a typical course, the active period of the disease lasting three weeks. Stomatitis was severe and death was caused by cerebral hemorrhage. The leukocytes reached 529,000 per cubic millimeter (1 white to 7.6 red cells); 85% of them were large lymphocytes, 10% small lymphocytes.

CASE II.—The patient, P., white, born in Virginia, was a waiter by occupation, and nearly 22 years old at the time of his last illness. His various places of residence were Virginia, the District of Columbia, West Virginia, and (the winter of 1901-02) Chicago. He was taken with his final illness in West Virginia. His father was living and in sound health. His mother had died of acute tuberculosis after five months' illness. His grandparents lived to old age. After the diseases of childhood the patient had no severe illness up to his final attack. He had occasional slight ailments and was rather subject to headache. He had gonorrhoea in the latter part of December, 1901, and was vaccinated about the middle of March, 1902. Before the beginning of his illness he weighed 150 pounds.

At the end of the first week in April, 1902, the inguinal glands began to enlarge, followed by the glands in other regions in succession. The end of the third week in April the patient "caught a cold." He became progressively weaker, gradually lost weight, but his appetite continued good. He had no hemorrhages. On account of his increasing illness he was compelled to quit work May 1. On May 5, 1902, the patient applied to Dr. J. J. Richardson for treatment for obstruction to breathing and difficulty and pain on swallowing. Dr. Richardson found marked and general hypertrophy of the tonsillar ring, the lingual and faucial tonsils and the pharyngeal lymphoid structures being much enlarged.

An examination of the blood May 8, 1902, showed red corpuscles 4,042,000 to the cubic millimeter; hemoglobin 80%; leukocytes 67,800 per cubic millimeter, all of which excepting a small proportion were large lymphocytes. A diagnosis of acute lymphatic leukemia was made, and death within a few weeks was prognosticated, although at this time the general physical condition, aside from the blood findings, would not indicate so serious a prognosis.

The difficulty in swallowing greatly improved under Dr. Richardson's treatment and on May 11 the patient was transferred to my charge. His condition was as follows: He was white, of blond type, and of markedly good muscular development; the beard was scanty and deficient. He was weak, pale, anemic, and moderately emaciated, having lost twenty pounds within three or four weeks. He perspired freely and a strong disagreeable fetid odor emanated from him, probably chiefly from the mouth and nose. He was at the time running an irregular fever temperature.

The inguinal, axillary, and cervical lymphatic glands were enlarged on both sides. The enlargement of the inguinal and axillary glands was moderate in degree, the largest not being over two or three centimeters long; the glands were not fused together, the separate glands could be distinguished individually; the enlargements were plainly visible. The cervical and submaxillary glands were very much enlarged and massed together in packets that formed conspicuous swellings at the angles of the jaw; the group of glands on the right side was much more enlarged than that on the left.

The adenoid structures of the nasopharynx were much hypertrophied, completely closing the nasal passages. The nasal mucosa was in a catarrhal condition, with a thin serous discharge. Respiration was "sniffly" and the voice nasal. The lungs were normal. The gums were swollen and spongy. The patient could open his mouth but a short distance, but could swallow moderately well. Appetite and digestion were good, and his bowels had been acting fairly. His liver was enlarged, extending from the costal border up to about two centimeters below the nipple.

The heart action was frequent, but the organ manifested no other abnormality. The radial arteries were markedly sclerosed, feeling cordy and rolling under the fingers, but not calcified. The vascular tension was very low, the pulse being soft and very easily compressible; on compressing the radial artery a recurrent pulse from the ulnar was very distinctly palpable. Examination of the blood May 11 showed: Red corpuscles, 3,686,000; hemoglobin, 73%; corpuscular hemoglobin ratio, 1; leukocytes, 134,800 per cubic millimeter; proportion of white to red cells, 1 to 25; differential count of leukocytes:

	Percent.	Number per cubic millimeter.	Normal number per cubic millimeter.
Small lymphocytes.....	7	9,486	1,900
Large lymphocytes.....	91.3	123,072	450
Polymorphonuclears.....	1.5	2,022	5,500
Eosinophiles.....	.....	.....	150
Myelocytes.....	.2	270	.....
	100	134,800	8,000

No basophile leukocytes and only two or three abnormal red cells (one or two polychromatophiles, one doubtful megaloblast) were seen.

The spleen was enlarged, extending to, but not below, the border of the ribs. The patient suffered no pain and felt fairly comfortable. He was rather drowsy. His pupils were moderately dilated. Hearing was normal.

Examination of urine May 11 gave the following result: Amount in 24 hours, 1,025 cc.; amber, nearly clear, moderately acid; specific gravity, 1.027.73; total solids, 7.605 grams in 100 cc., 78.951 grams in 24 hours; albumin and nuclealbumin absent; sugar absent; indican normal; urea, 4.65%, 47.66 grams in 24 hours; uric acid, .1174%, 1.20 grams in 24 hours; ratio of uric acid to urea, 1 to 40; phosphoric acid (P_2O_5) .217%, 2.22 grams in 24 hours; chlorids ($NaCl$), .4%, 4.10 grams in 24 hours; microscopically showed numerous mucous threads and a moderate number of squamous epithelium cells.

From this time on the disease ran a rapid course until death occurred, 18 days later. The patient's weakness and emaciation progressed steadily, until at the end the emaciation was extreme. He continually perspired freely. Fever continued, of an irregular remittent type, occasionally reaching 104° or over, and attaining a maximum of 105° the evening before death. The fever ranged rather higher after the advent of cellulitis of the face, though the increased temperature was probably only partially (or even little) due to the complicating infection. During the last week of life ecchymoses appeared on the ankles and thighs.

No further change in the size of the inguinal, axillary, cervical, or submaxillary glands took place, and no enlargement of any other superficial glands (except a slightly enlarged gland in the right mammary region) was detected. When the fever became high, tenderness of the inguinal glands was complained of. No tenderness over the bones was noted. No further material change in the size of the spleen was observed. The nasopharyngeal obstruction diminished from about May 20, so that the patient was able to breathe through the nose. With this improvement the foul odor diminished.

On May 14 cellulitis began to develop in the right alveolar region from a decaying fragment of a tooth. This fragment was removed, the bleeding following being insignificant. The cellulitis continued and increased, the right side of the face becoming generally swollen and edematous, though not very painful. The swelling later subsided, leaving an indurated area in the cheek, which did not soften or suppurate. The inflamed region was not lanced. This complicating infection was followed by the characteristic reduction of the number of leukocytes in the blood, and also perhaps caused a higher range of fever.

The most troublesome local feature of the case was the condition of the gums and mouth. The gums became more and more swollen and spongy, and the teeth became loose; the lips were dry, fissured, and incrustated with scordes. The patient could open his mouth only slightly, though for the most of the time he was able to swallow fairly well. In the last few days the mouth was in a most distressing condition, much like that of scurvy; the gums were exceedingly swollen, bloody serum constantly oozed from them in large amount, the teeth became so loose as to drop out, the lips were swollen, fissured, and sore; he could scarcely open his mouth, and swallowing became difficult and finally impossible.

His appetite remained good, and he ate both solid and liquid food with relish. Digestion was good, and there was no gastric disturbance except once or twice, due to the medicines used. At first there was some tendency to constipation, but later the action of the bowels was satisfactory. The stools were light brown to a very light yellow, sometimes well formed, sometimes soft and watery. Microscopic examination of a specimen of feces May 23 showed finely divided food detritus, some fragments of vegetable tissue, and numerous crystals of ammoniomagnesian phosphate. During the last four days (May 25-29) there was diarrhea, with from five to ten passages daily, of large yellow liquid stools (some containing milk curds), becoming pale and watery. There was no blood in the stools at any time. The abdomen was distended and tympanitic the last day; previously it was flat and undistended.

The condition of the heart continued without material change, except that its contractions became weaker and more frequent; its rate ranged mostly from 110 to 140, varying with the temperature. There were no murmurs at any time. The respirations mostly ranged from 18 to 24. All the accessible peripheral arteries showed marked sclerosis. As the emaciation progressed various arteries, radial, brachial, femoral, popliteal, could be picked up and rolled between the fingers;

all had a cordy feeling, but were not calcified. The temporal arteries were tortuous, but of small caliber, and their pulsation was distinctly visible. Arterial tension was very low throughout.

In the blood the hemoglobin and red corpuscles decreased steadily; the number of leukocytes was lowered from the earlier figures, apparently the effect of the complicating alveolar and buccal cellulitis, but the high proportion of large lymphocytes was maintained. The hemoglobin and red corpuscles decreased in corresponding degree, a corpuscular hemoglobin ratio of approximately 1 being maintained.

Blood examination May 17 showed: Hemoglobin, 53%; red corpuscles, 2,960,000; one doubtful normoblast was the only abnormal red cell observed; leukocytes, 29,600; differential count of leukocytes:

	Percent.	Number per cubic millimeter.
Small lymphocytes.....	3.5	1,036
Large lymphocytes.....	94.5	27,972
Transitional.....	1.1	325
Polymorphonuclears.....	.6	178
Eosinophiles.....	.3	89
	100	29,600

Blood examination May 23: Hemoglobin, 45%; red corpuscles, 2,232,000; leukocytes, 22,150. In the blood examinations May 17 and 23 bleeding from the needle punctures was free and prolonged.

Aside from the exceedingly sore mouth and occasional slight tenderness in the inguinal glands the patient suffered no pain, and in general was comparatively comfortable. There was some headache at times, perhaps due to the salicylate administered. He had vertigo when he got up at stool. He was drowsy and slept much during the daytime, but was rather restless at night. When awakened his mind was clear. He was very optimistic as to the outcome of his illness.

Hardness of hearing developed during the course of the disease, and increased progressively, until at the last he was very deaf and it required considerable elevation of voice to make him hear.

His pupils at times were dilated, at times normal. The findings of an ophthalmoscopic examination made May 27 by Drs. James Stuart and O. A. M. McKimmie were as follow: Both discs were clear and distinct, the retinas pale and anemic. The arteries were small, pale, and somewhat tortuous in both, but especially so in the left eye. The veins were full and tortuous, and large in comparison with the arteries. Two arterial hemorrhages were seen in the right eye; one dark irregular one, the size of the disc, being up and out, away from the disc, 2½ diameters of same; the other, one-fourth in size, was down and out 1½ diameters of the disc. One small venous hemorrhage was seen in the left eye, being down and out from the disc 4 diameters of the same.

Slight hematuria was observed once, on the day before death occurred.

Treatment.—Fowler's solution was given, but interrupted by temporary gastric disturbance. Iron was given for a time; also potassium iodid, in view of the arteriosclerosis. No perceptible effect was produced by these drugs. Full diet was allowed, and stimulants given. Sodium salicylate was administered at times as an antipyretic. The mouth and nose were treated with cleansing and sedative applications. Ice was applied to the swollen submaxillary region. The facial cellulitis was treated with iodine, ice, and poultices.

The steady and rapid progress of the disease was unaffected by treatment, and the patient died of exhaustion May 29, 1902. The total duration of the disease was about seven weeks, during the last four weeks of which the patient was confined to bed.

Autopsy (two hours after death).—Body extremely emaciated and anemic. There were a few small subcutaneous ecchymoses about the trunk and arms, and numerous small and large ecchymoses on the anterior aspect of the ankles. Bloody serum was oozing from the mouth. The superficial arteries were sclerotic. The cervical, axillary, and inguinal glands were enlarged, also a small gland near the right breast.

The bone marrow of the ribs was dry, scanty, and very pale. The mesenteric, portal, retroperitoneal, and bronchial glands generally were much enlarged; they were dark or mottled in color, and fairly firm. No structures having the appearance of hemolymph glands were distinguished.

The pericardium contained a somewhat increased amount of serum. The heart was pale, firm, rather small. The thoracic aorta showed patches of slight atheroma.

The spleen was enlarged to about three times its normal size, measuring 20 by 12 by 7 cm., and weighing 600 grams. It was dark-colored, congested, fairly firm, and had five or six small white lymphomatous nodules on its surface.

The mucous membrane of the small intestine showed a few small scattered ecchymoses. The mucous lining of the colon was studded with large numbers of minute pin-head sized nodules (enlarged solitary glands), ecchymotic, some with a minute erosion in the center.

The liver was dark, firm, congested, and enlarged, extending from the costal margin to the nipple.

The kidneys were enlarged and showed punctate subcapsular hemorrhages. Their substance was pale, with areas still paler. The bladder was distended with clear, pale, nonbloody urine.

The lungs showed hypostatic congestion. The right lung contained a large infarction.

Microscopic Examination.—The inguinal, mesenteric, and retroperitoneal lymph glands exhibited general lymphocytic hyperplasia, largely obscuring the structural elements of the glands.

Sections of a much enlarged bronchial gland showed throughout the lymphoid area a peculiar arrangement of short straight slightly wedge-shaped narrow striae, running in all directions, often in radiating groups; these striae consisted of clear spaces alternating with narrow cords of lymphoid tissue. Scattered about the gland were a number of small necrotic tubercles. In places, especially in the larger tuberculous nodules, there were abundant deposits of pigment granules.

The spleen contained deposits of iron-containing pigment granules, especially in the capsule and trabeculae. The Malpighian lymphoid bodies were indistinct in many places, and some of them contained a homogeneous hyaline eosinophile substance in their interior. The splenic pulp was infiltrated with leukocytes, chiefly mononuclear cells, with a few red corpuscles. The intercellular reticulum in the pulp was well marked. The macroscopic lymphomas consisted of aggregations of mononuclear cells.

The cellular elements of the marrow of the rib consisted chiefly of nongranular mononuclear cells, with red cells absent or very scarce.

The liver showed scattered throughout its substance large numbers of typical leukemic nodules of microscopic size, composed of aggregated mononuclear cells and located chiefly in the portal and interlobular regions. Homogeneous hyaline material was present in the largest of these lymphomatous nodules. The capillaries also contained large numbers of leukocytes. The liver cells were degenerated and their nuclei in general stained poorly. Particles of iron-containing pigment were scattered plentifully through the liver substance.

The colon showed hyperplastic enlargement of the solitary follicles. The heart-muscle and lungs were normal. The kidney showed extensive and diffuse areas of dense infiltration of lymphocytes between the uriniferous tubules, also in the capsule. The epithelium of the tubules was degenerated and desquamated.

The lymphocytes or mononuclear cells observed in the organs—lymph glands, spleen, liver, kidney—were mostly of medium size; the chromatin of their nuclei, instead of being distributed evenly through the nuclei, was mostly broken up into irregular granules, but mitotic figures were not observed.

Bacteriologic Examination.—In sections of liver, rib marrow, and inguinal gland were seen a very few cocci occurring singly (excepting one cluster seen in the liver). Smears from the spleen and a mesenteric gland showed a few scattered bacilli of medium size, moderately thick, and staining evenly (possibly colon bacilli), and a few doubtful single coccus forms.

Of agar and blood-serum tubes inoculated at autopsy from the heart blood, liver, and spleen, and grown both aerobically and anaerobically, some tubes from the blood and liver yielded pure cultures of a coccus, while those from the spleen and others from the blood and liver remained sterile. This coccus, probably the same as that seen in the organs, grew in the original tubes, both aerobically and anaerobically, in minute round white colonies a millimeter in diameter; it was barely viable on culture media, as no further growths could be obtained on transplanting from the original to second or third tubes. The cocci stained from the cultures occurred singly and in pairs, a few in tetrads and small clusters, and decolorized by Gram's method.

Tubes inoculated by having portions of an inguinal gland rubbed over the surface of the culture media yielded luxuriant growths composed of bacilli of two kinds, for convenience termed "Bacillus I" and "Bacillus II."

Bacillus I in the original tubes formed growths covering nearly the entire surface of the media. It was a motile thick bacillus with rounded ends, forming oval spores and occurring singly, in pairs, and in chains. It stained readily and did not decolorize by Gram's method. On account of the presence of the nonstaining spore in the middle of the cell the stained bacilli often had an oval form with a clear central space and only the ends colored. The bacillus grew readily on culture media, most rapidly at 37°. On agar slants it formed a broad, whitish, dry growth with marked marginal serrations. In agar stabs numerous fine lateral filaments grew out along the stab. Gelatin was rapidly liquefied. In bouillon a thick white surface pellicle formed, later settling to the bottom. On potato it formed a thick, moist, shining white growth. It coagulated and decolorized litmus milk. It formed indol.

Its pathogenicity was tested by inoculation of a white rat, two rabbits, and three white mice, with practically negative results as to the production of leukemic or any other morbid conditions. The rat, twice inoculated intraperitoneally, remained perfectly well and rapidly increased in weight, but a month after inoculation died suddenly, apparently of heat-stroke; the spleen was somewhat enlarged, there was old peri-

tonitis in its vicinity; on the surface of the liver were three small white cysts; microscopic examination of the spleen and liver was negative; Bacillus I was obtained in pure culture from the spleen. A rabbit, which received two intravenous injections of cultures of Bacillus I and was observed for a period of 6½ months, showed no material morbid results; for a few weeks it did not thrive, and showed indurated nodules in the ears at the sites of the injections; later it gained weight and appeared perfectly well; blood examinations at intervals showed no increase of leukocytes. Another rabbit, inoculated intraperitoneally, became ill, lost weight, developed leukocytosis, and died after nine days; but its symptoms were probably due to an injury sustained by the animal. Three mice were inoculated with the bacilli obtained from the spleen of the rat; one died a few hours after an intraperitoneal injection; the other two, observed for five months, showed no effects from subcutaneous injection.

Bacillus II grew in a single small separate colony in one of the tubes inoculated from the inguinal gland. It was motile, rather smaller and narrower than Bacillus I, did not grow in chains, and formed spores, which in stained specimens gave the appearance of a clear central space. It was not decolorized by Gram's method. On agar slants it formed a moist white growth, narrower than that of Bacillus I. Agar stabs gave a nodular, not arborescent, growth. It liquefied gelatin, did not produce indol, in bouillon formed a white pellicle which later settled to the bottom, decolorized but did not coagulate litmus milk, and on potato formed a widespread dry, white, wrinkled growth. A rabbit inoculated intravenously with the bacillus showed no leukemic developments; it continued well, gained weight, and the blood examined at intervals showed no increase of leukocytes; it died after six months from the effects of an abortion, and autopsy showed no enlargement of spleen or lymph glands. After intraperitoneal inoculation with the bacillus a guinea pig remained apparently normal and well for six months, when it died suddenly; its leukocytes 4½ months after inoculation numbered 23,130 (ratio to reds 1:248), and at death numbered 23,100. Autopsy showed atrophy and ecchymoses of stomach wall, but no enlargement of liver, spleen, or lymph glands.

In brief, in this patient a coccus differing from the ordinary known cocci was present in the blood and organs. The mesenteric glands contained bacilli, perhaps identical with one of those grown from the inguinal gland, perhaps colon bacilli. An inguinal gland yielded growths of two spore-forming bacilli, neither of which appeared to have any pathogenic properties, and one (or both) of which was probably due to accidental contamination.

Animal Experiments.—Besides the animals inoculated with the bacteria isolated, four other animals were inoculated with material obtained at the autopsy. A rabbit was given an intraperitoneal injection of blood from the patient's heart; the following day the animal was listless, but recovered, and, under observation for seven months, continued normal and well, and gained greatly in weight; its blood, examined from time to time, showed no increase of leukocytes.

A guinea pig was inoculated intraperitoneally with the heart blood. It gained in weight for a time and then lost weight, down to about the original figure; but aside from this malnutrition it presented no abnormal conditions until about 3½ months after inoculation, when it was suddenly seized with a convulsive attack and died in a few hours. At the time of death blood examination showed 6,460,000 red cells, 25,300 leukocytes; seven weeks previously the leukocytes had numbered 16,750. There were a few minute black spots in the stomach wall, perhaps old hemorrhages or healed ulcers; no enlargement of glands, liver, or spleen, or other morbid condition was observed.

A white rat was inoculated subcutaneously with the patient's heart blood. It continued perfectly well, gained greatly in weight, and when killed, over 4½ months after inoculation, exhibited no material abnormal conditions, and no increase of leukocytes.

A second rabbit was inoculated intraperitoneally with portions of the inguinal glands of the patient, but died of shock a few hours later.

The animal inoculations, therefore, do not appear to have produced leukemic or any other material morbid developments.

I here record my indebtedness to Drs. J. J. Richardson, James Stuart, and O. A. M. McKimmie; also to Dr. T. A. Clayton for seeing the patient in consultation, to Dr. D. W. Prentiss for assistance at the autopsy, and to Mrs. Louise Tayler Jones for assistance in the laboratory work.

This case was highly typical and illustrative of acute leukemia. It exhibited very characteristically the irregular febrile course, the extreme emaciation and weakness, the general glandular and splenic enlargement, the steady decrease of red blood cells and absence of qualitative changes in the red cells, the enormous increase of lymphocytes (especially the large ones) and decrease of other varieties of leukocytes, the tonsillar

enlargement, the enlargement of the liver, the leukocytic deposits in the liver, spleen, and kidneys, the enlargement of the solitary follicles of the intestine, and the rapid progress typical of this disease. Hemorrhage was not so pronounced a feature as it often is, but the pseudoscorbutic stomatitis was of the most severe character. The marked arteriosclerosis and the development of deafness were features of special interest. The development of a complicating cellulitis and its effect in causing a decrease of the leukocytes were also highly characteristic.

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RETROCECAL APPENDICITIS WITH RETROPERITONEAL PELVIC ABSCESS.*

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According to Virchow¹ paratyphlitis should be regarded as a retroperitoneal phlegmon, which has usually originated from inflammation and perforation of a vermiform appendix that is situated extraperitoneally behind the cecum.

From the records of 1,400 autopsies at the Boston City Hospital, Monks and Blake² found the direction of the appendix recorded in 572 instances, divided according to the points of the compass as follow: Down and in, 179; down, 79; in, 62; up, 52; up and in, 39; up and out, 29; out, 9; down and out, 5; in pelvis, unclassified, 14; with 104, or 18.2%, behind the cecum.

Howard Kelly³ enumerates 14 varieties of pelvic abscess, and states that it is rarely met in the cellular tissue of the pelvis.

In a communication on "Walled Off Appendiceal Abscess," J. B. Deaver⁴ describes (1) the postcolic or postcelic abscess, lying between the layers of the mesocolon, as the most common; (2) those beneath the parietal peritoneum, walled off by the cecum, intestines, omentum and lymph, frequently communicating with and including the pelvis; (3) when the pus collection is wholly confined to the pelvis and shut off from the general peritoneal cavity, with the appendix located in the pelvis; (4) circumscribed pus located near the median line and to the inner side of the cecum, walled off by the agglutinated viscera; (5) free pus in the general peritoneal cavity.

Rotter⁵ claims that the most frequent location of abscess in perityphlitis is in the pelvis (41 of 132 of his own cases), and admits that it is difficult to tell whether pus found in the pelvis is of appendicular or tubal origin.

It is only after a long and careful search of the literature on appendicitis, that failing to find any record of the particular variety of abscess to be described, I have ventured to bring to your attention the following three cases:

CASE I.—Retrocecal gangrenous appendicitis, with retroperitoneal pelvic abscess.

E. L., a girl of 13 years and 4 months, on January 7, 1900, fell, striking upon the abdomen. While in school she vomited three times and complained of feeling sick. She stayed at home next day, taking citrate of magnesia, which resulted in bile-colored stools. She did not complain of pain. She attended school daily until January 18, when she complained of pain in the right iliac fossa. She was put in bed, and it was noticed that the sheet became wet with an egg-like substance, apparently coming from the rectum. Pain and discharge increased during the night, and on January 19 Dr. James K. Latham was called and made a diagnosis of appendicitis, and the same afternoon I concurred with this diagnosis. Palpation

defined a circumscribed mass in contact with the anterior abdominal wall, extending obliquely from the umbilicus downward and outward toward the right iliac fossa and apparently into the true pelvis, tympanitic on percussion. There was a mucopurulent discharge from the vagina and the stools contained considerable mucus.

Operation was performed January 19 at 4 p.m. A McBurney incision was made. As the index finger wormed its way between the cecum and the lateral wall it opened a cavity from which more than a pint of very foul-smelling pus escaped. On exploring the pelvis we were surprised to find the whole pelvis free from any evidence of peritonitis; the uterus and adnexa were in a healthy condition, the culdesac was nonadherent, its peritoneal covering perfectly smooth. A finger introduced into the vagina came in contact with the finger in the abscess introduced from above, and it was made clear that the abscess was located in the cellular tissue between the rectum and the posterior vaginal wall (see cut). An opening was made through the vagina and a large rubber tube placed in the cavity, which was washed out with hydrogen dioxide, and the upper portion of the abdominal wound packed with sterile gauze for drainage.

CASE II.—Postcecal appendicitis, with postperitoneal pelvic abscess.

E. W., a girl of 10, on April 29, 1900, was not feeling well. She vomited and was feverish. The next day she complained of pain in the abdomen; on the third day the pain was localized below the umbilicus; on the fourth day she was seen by Dr. Latham, who recognized the appendicular origin of the trouble. His diagnosis was confirmed by me.

Operation was performed at 8.30 p.m. The abdomen was quite uniformly tender, rather tense, most severe pain in the right iliac fossa; a distinct, well-defined mass was found lying



Relations of retroperitoneal pelvic abscess, AB; rectum, R; Douglas's culdesac, D; uterus, U; vagina, V; bladder, B.

obliquely along Poupart's ligament, and dripping into the pelvis. This proved to be the caput coli, which had been lifted upward toward the anterior abdominal wall, surrounded by masses of exudate, especially to the outer side. The index finger was wormed between the caput coli and the false pelvis, and entered a large abscess which occupied the greater part of the pelvic cavity. Other than the above named exudate confined to the region of the cecum there were no adhesions, though a considerable amount of seropurulent fluid escaped as soon as the peritoneum was opened. Working by gaslight we were unable to locate the appendix, and deemed it safer to pack with gauze, after washing out with hydrogen dioxide. Two days later the gauze was removed and the gangrenous appendix too friable to be sutured was ligated and removed. It had been originally behind the caput coli. On account of the tender age of the child, no attempt was made to drain through the vagina. Four days later, while examining the cavity, an enterolith was found and removed. On May 30 a small sinus was still open. The temperature rose to 102.2°, pulse 120, but she promptly responded to one dose of quinin daily, given seven hours before the apex of the temperature-curve of the previous paroxysm.

CASE III.—Locomotor ataxia, retrocecal appendicitis, retroperitoneal pelvic gumma.

E. L., a man of 40, in whom an initial lesion occurred in 1888. He had syphilitic ophthalmia early in 1896, first recognized while under the care of Dr. J. E. Weeks. In September, 1896, he came to me complaining of difficult micturition, impotence, lightning pains, band sensation indicative of locomotor ataxia. This diagnosis was confirmed some months later by Dr. M. A. Starr, and the antiluetic treatment continued, with ataxic symptoms in *statu quo* up to October 6, 1900, when he came to my office complaining of pain in the abdomen and

*Read before the Surgical Section, New York Academy of Medicine, December 8, 1902.

irregularity of the bowels for the past 10 days. He had always feared appendicitis, and would admit of no other symptoms. Examination showed a large, tympanitic mass, bulging upward toward the umbilicus and downward toward the true pelvis. Through the rectum a mass could be felt, lessening its caliber, and on bimanual palpation was apparently continuous with that above the pelvic brim.

Operation was performed the same evening; a McBurney incision was made; colon was found displaced upward against the anterior abdominal wall; there were no adhesions of the intestines. As the finger was lifting up the caput coli, it broke into a sac containing 10 or 12 ounces of a clear, yellow-tinted fluid, in which floated a considerable number of white flocculi, such as we see in tuberculous or gummatous collections. There was no perceptible odor. The cavity was located behind the pelvic peritoneum, having burrowed its way between that membrane and the rectum. The appendix was not found. Sterile gauze strips were inserted in the opening, under the caput coli, and in the wound. On the third day the abdomen was considerably distended, the bowels had not moved, and owing to his unusually bad appearance, Dr. Morris was asked to see him the next morning. Under massage and laxatives the bowels moved freely during the night, and when seen the next morning his condition was looked upon as favorable, Dr. Morris saying that reaction was about to take place. On removing the gauze it was noted that there was no evidence of any reparative action in the wound, which presented a very unusual, pale, cadaveric appearance. During the following week the patient was unable to retain any nourishment, either by the stomach or bowel, nor could the latter be controlled, so that the potassium iodid administered during the few days previous failed to have any effect, and he died from exhaustion on the tenth day after operation. From the clearness of the fluid in the pelvis, the absence of odor, the presence of flocculi, and the indisputable history of syphilitic ataxia, the nonhealing of the wound, and the absence of any adhesions in the abdominal and pelvic cavities, we feel justified in charging his death to lues.

It has been my fortune to have operated on quite a number of patients in whom the appendix was found lying behind the cecum, with an accumulation of pus and exudate around and under the caput coli, but in only the above mentioned instances have the abscesses been located in the pelvis behind the peritoneum. This variety of appendicular disease (retrocecal) has been characterized by the usual acute onset, with nausea, vomiting, malaise, general abdominal pain, which later becomes localized in the right iliac fossa (in Case II most severe on the left side), unequal abdominal rigidity, constipation, and moderate elevation of the temperature and pulse. After the bowels have been freely evacuated the man may go about his business, or the child attend school, not feeling ill enough to go to bed until the increasing size of the abscess with increasing fever and exacerbations of pain forces them to go to bed and to secure professional aid. At this late date it is not a difficult matter to recognize the tumefaction in the right iliac fossa, but one must not be misled by the fact that on percussion a tympanitic note can be elicited; and on examination per vaginam or rectum, the pelvic abscess, when present, can be easily made out. Further, the temperature may reach 102° to 103° F., with a pulse-rate of from 100 to 130, and the drawn, septic appearance of the face will remove any doubt as to the necessity of operation without further delay. Cases I and II were evidently due to colon bacilli, as evidenced by the characteristic odor.

REFERENCES.

- 1 Tiltman's Textbook Surgery, Tiltton's Translation, Vol. III, p. 105.
- 2 Boston Med. and Surg. Journ., November 27, 1902, cxlvii, p. 581.
- 3 Operative Gynecology, II, 208.
- 4 Journ. Am. Med. Ass'n., 1901, xxxvi, 27.
- 5 Deutsch med. Woch., October 4, 1900; Gould's Year-book Surg., 1902, p. 157.

Decrease in Cuban Deathrate.—A recent communication to the State Department by Mr. Squires, United States Minister to Cuba, states that since January 1, 1899, the beginning of the American occupation of the island, there has been a continued decrease in the deathrate and that the rate 21.19 per 1,000 for the year just ended is the lowest in the history of the island between 1870 and the present time. The highest deathrate was 91.03 per 1,000; this occurred in 1898, the year of the Spanish war, when the reconcentration camps were in operation and many people starved. The lowest rate under Spanish rule was 29.30 per 1,000 in 1885 and the average rate for the 30 years ending 1900 was 41.95 per 1,000. It is believed that if the present good sanitary conditions prevail the low rate will be maintained.

FRACTURE OF THE ISCHIO-PUBIC RAMUS AND RUPTURE OF THE BLADDER: RECOVERY AFTER OPERATION.¹

BY

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of Columbia, S. C.

In a series of 90 cases of fracture of the pelvis with rupture of the bladder collected from the literature by Mitchell,² in 1898, a mortality of 83.3% was found. If it were possible also to take into consideration unreported cases, the actual mortality would undoubtedly prove to be even greater. On account of the rarity of the injury, therefore, together with the high mortality attending it, the following case is of interest:

The patient was a negro laborer of 16, single. His family history was negative. For several years he had had a urethral discharge, burning micturition, and at times difficulty in voiding urine.

His injury occurred in this manner: While standing between a freight car and a grain elevator an engine came up unawares and moved the car, rolling him between the car and the elevator.

I first saw the patient about half an hour after he was hurt. He was lying on his back in a shed at the oil mills in which he was employed. The examination made at that time revealed no evidence of very serious injury. The mental condition was good and there was apparently not very great suffering. Quite extensive, though superficial, abrasions of the skin were seen over the outer side of the right hip, and pressure or movement of the right lower extremity caused severe pain in the region of the right hip and throughout the pelvis and lower abdomen. The pulse was 88 per minute and of good quality. In order to investigate as to possible injury of the urinary organs, I requested the patient to void his urine, but on attempting to do so he found it impossible to expel even a drop. He was then taken to his home, where I saw him half an hour later; he then seemed comparatively comfortable, but was still unable to pass any urine. The history of gonorrhoea and dysuria gave grounds for suspicion of stricture of the urethra as a possible cause for the difficulty in emptying the bladder. I left instructions to make every effort to get a specimen of urine, using cold water over the loins and region of the bladder. The attempts at micturition were all of no avail until I returned to see the patient again eight hours after the injury, whereupon a sterilized rubber catheter was passed into the bladder without meeting any obstruction and two ounces of bloody urine were drawn off. The abdomen now, besides being very tender, was slightly distended and tympanitic. The temperature was 99° F. and the pulse had risen from 88 to 104 per minute. The diagnosis of rupture of the bladder was thus made, and I advised immediate operation, to which consent was given. The patient was taken to the Taylor-Lane Hospital, arriving there at 10.30 p.m., November 24, 1902.

Operation.—After thoroughly cleansing the abdomen, the operation was begun at 11 p.m. (10½ hours after injury), under chloroform anesthesia, Drs. Coward, Guerry, and Owens assisting.

A median incision about 8 cm. long was made just above the symphysis pubis. Having cut through the aponeuroses between the recti muscles, the peritoneum immediately came into view, the subperitoneal fat being very scanty. The peritoneum was of a dark, port-wine color, intensely congested and thickened. On snipping the peritoneum a considerable quantity of bloodstained fluid escaped, which was taken to be urine, although no odor was detected. The finger was then introduced through the incision, and the underlying intestines were found to be tightly matted together by fresh adhesions. On passing the finger deeply into the pelvis for exploration a fracture of the right ischiopubic ramus was detected, the posterior fragment of the bone being somewhat depressed and presenting a sharp, jagged edge.

Bloodstained fluid continued to escape throughout the examination. A sterilized rubber catheter was now passed into the bladder per urethram, and sterilized normal salt solution allowed to flow into it from a fountain syringe. The fluid injected into the bladder flowed out of the abdominal wound, and after a long search the rent in the bladder through which the fluid escaped was found deep down behind the symphysis pubis, in the anterior wall of the bladder, just above the vesical neck. The opening was just large enough to admit the index finger, and being so remote from the abdominal wound, its closure was a problem fraught with difficulties, which were increased by poor illumination (two kerosene lamps furnishing the light) and the frequent obscuring of the cavity by fluid welling up from the bladder. Under the guidance of touch the sides of the rent were caught with forceps and dragged upward, but the friable tissues tore away and the opening had to be sought for again with the aid of the injection of salt solution

¹ Read before the Columbia, S. C., Medical Society, February 2, 1903.

² Mitchell, Johns Hopkins Hospital Bulletin, Vol. ix, p. 5.

into the bladder. After locating the tear the second time, its upper angle was caught with artery forceps and, having dried out the cavity, the injured portion of the bladder was displaced backward (as it could not be drawn upward) in order to gain the best exposure possible. In the first attempt to suture the opening under the guidance of touch a curved needle was broken off and could not be found again. I finally succeeded in bringing the edges of the tear together by a continuous suture of fine silk. To test the closure, salt solution was again injected into the bladder, and it was seen that the bladder wound still allowed the escape of fluid, but much less freely than formerly. It being found impossible to make an accurate closure of the bladder wound owing to its inaccessibility, the cavity was dried out finally and filled with an abundant gauze drain passing from the lower angle of the abdominal wound down to the rent in the bladder. The upper half of the abdominal wound was closed with silk wormgut sutures, an abundant gauze dressing put on, and the abdominal bandage applied. A rubber catheter was introduced just beyond the posterior urethral orifice and retained in place for drainage by means of adhesive strips carried up the sides of the penis. The patient was on the operating table about two hours in all. After being put to bed his pulse was 88 per minute.

He was attended throughout convalescence by Dr. J. H. McIntosh, and the following notes are taken from the charts and records kept under his direction: Immediately following operation the patient passed a fairly comfortable night, but there was a gradual rise in pulse, temperature, and respiration, reaching 100, 100°, and 48, respectively, by 9 a.m. the following morning, when the wound was dressed. The dressings were saturated with slightly bloody urine and only one ounce of urine had drained through the catheter. The abdomen was considerably distended, tympanitic, and somewhat tender. During the day the distention became more marked and the respirations more rapid *pari passu*. By 1 p.m. the distention caused considerable discomfort, and the respirations reached 54 per minute. Calomel was administered by mouth, and at 7 p.m. a rectal enema, of water one quart and alum one ounce, was given. This was followed by a large, formed bowel movement with a great deal of flatus, which afforded great relief, and the respirations fell soon afterward to 32 per minute, and by the following morning to 24 per minute. Some distention still remaining, however, the enema was repeated, and was expelled with a great quantity of gas. The tympanites then rapidly disappeared and the respirations fell to 22 per minute.

There were no other complications of the convalescence, except that on the fifth day the patient pulled the catheter out of the urethra, and this was followed by a transient rise of temperature to 102° on the next day and increased leakage of urine from the abdominal wound. A few days later, however, small quantities of urine were voided through the urethra, and from now on the amount of urine escaping from the abdominal wound gradually diminished, while that passed from the urethra increased.

The abdominal dressings were changed as often as required by the leakage of urine (once to three times daily for the first two months). The iodoform gauze drain was pulled out and cut off a little at a time from day to day, beginning about the seventh day, until it was entirely removed; thereafter a fresh drain was loosely placed in the wound down to the bladder daily.

The patient was discharged from the hospital in robust health on the seventy-sixth day after entrance. There then remained only a pinpoint sinus in the scar of the abdominal wound, from which a few drops of urine occasionally escaped. I have learned from Dr. McIntosh that the sinus has closed entirely and that there has been no leakage from the bladder since two weeks after discharge from the hospital. The fractured pubic ramus gave no trouble other than a little lameness for the first few days after the patient began to walk.

I have been unable to find in the *Index Medicus* of the *Journal of the American Medical Association* or in the indices of other medical journals any other cases of fracture of the pelvis with rupture of the bladder reported since Mitchell's publication.

ANOMALIES OF RESPIRATION IN HIGH ALTITUDES.

BY

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of Sacramento, Cal.

During the month of August, 1902, which I spent in mountain-climbing in and about Glen Alpine at altitudes ranging between 6,500 and 10,000 feet, I made some observations regarding respiration in high altitudes that to me were new and interesting, and in one instance even startling. Whether the cases I am about to report are exceptional, or even pathologic, my observations are not numerous enough to determine. I

observed in general what, on reflection, one would naturally expect, that on account of the greatly diminished atmospheric pressure nasal obstruction develops in high altitudes from slighter causes than at sea-level, and that, even in the absence of nasal obstruction, sighing respiration is of extremely frequent occurrence.

CASE I was that of myself. It was observed very imperfectly because of the fact that the characteristic phenomena fully developed during sleep only. Lying down on the mountain-side after a morning climb I would often drop into a doze, and then in a few moments awake with precordial distress and labored breathing. In a moment this distress would cease and the breathing become superficial, when I would again doze off, to awake again with dyspnea, and so on indefinitely. When awake I breathed regularly, except for the occasional sigh, of which I have already spoken. On exertion even at an altitude of 10,000 feet I was not unduly dyspneic.

CASE II.—Mrs. —, who had a slight "cold," complained severely of nasal obstruction, particularly when recumbent, and of frequent sighing. During sleep the respiratory cycle consisted of 6 or 8 equal respirations, followed by a deep sigh and a prolonged interval of 4 or 5 seconds.

CASE III.—Mrs. —, who was in perfect health and free from unusual dyspnea on exertion, has had for 30 years, and still has, double second cardiac sound, invariable and entirely unaccompanied by symptoms. During sleep the respiratory cycle consisted of two increasing, one maximal and two diminishing respiratory movements occupying 12 seconds, and followed by apnea of 8 seconds. The maximal inspiration was accompanied by jerking of the arms, seemingly due to overflow of the respiratory impulse. The heart's action was normal at all times. During waking hours respiration was also normal, with the exception of the sighing previously spoken of, but which in this case was not more marked than in others. Gradually this respiration-cycle became less marked, but it was distinct and invariably present during sleep for two weeks from its first discovery and until the patient returned to sea-level, when it disappeared at once.

The cause, at least the exciting cause, of these anomalies of respiration would seem to be dependent on high altitude, whether, in the extreme types, engrafted on some pathologic condition, I am in doubt. The genetic chain would seem to me as follows: diminished supply of oxygen under diminished pressure; oxygen hunger; increased activity of the respiratory apparatus; exhaustion of the respiratory muscles and the respiratory center; irregular respiratory impulse. In some cases obstruction of the air passages, due to diminished atmospheric pressure, and dilation of the right heart, due to increased resistance in the pulmonary circulation, may be contributory.

A RAPID METHOD FOR HARDENING AND EMBEDDING TISSUES.¹

BY

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of St. Louis, Mo.,

AND

D. L. HARRIS, M.D.,

of St. Louis, Mo.

A simple method for hardening and embedding tissues for microscopic examination which we have recently devised has given such satisfactory results that we feel justified in recommending it, particularly in those cases in which an early diagnosis is desired; for since the necessity for preliminary hardening and dehydration is done away with, the time is much shorter than that usually required for the purpose. Notwithstanding its simplicity and the short time required, the sections obtained by this method are not inferior, so far as we can determine, to those obtainable by the slower and more complicated methods now in common use.

The method consists essentially in placing the fresh tissues in a hot 2% solution of agar-agar, to which 10% of formalin has been added. The temperature of this fluid should be kept at about 70° C. After remaining in the solution for from one to several hours the tissues are

¹ From the Laboratory of Pathology of the Marion Sims-Beaumont College of Medicine, St. Louis, Mo., Medical Department of the St. Louis University.

removed and attached to blocks with a 5% solution of agar-agar containing 10% of formalin. The heat and the formalin harden and fix the tissues at the same time that the agar-agar impregnates it. After fixing the tissues to blocks these are placed in 95% alcohol and allowed to remain from two to four hours, and the tissues are then ready to be cut into sections, which can then be stained, cleared and mounted on slides in the usual way employed for celloidin sections.

We have found that fresh material placed in the melted agar-agar for one hour and then transferred to alcohol for two hours was readily cut at 14 μ . The liver and the kidney of a rabbit were cut at this thickness even after an impregnation of only one-half hour followed by one hour in the alcohol, though the sections obtained by shortening the process to this extent, it is true, were fragile and resembled somewhat those obtained by making sections from frozen tissues.

The 2% agar-agar solution should be filtered to avoid the granular detritus which is otherwise found in the sections. The 5% agar-agar can be cleared by sedimentation in a steam sterilizer, where it is allowed to cool slowly. The agar-agar solutions may be made up in bulk and preserved in air-tight vessels to prevent evaporation. The formalin is added at the time of the original preparation in the proportion of one part of formalin to nine of the agar-agar solution.

As is evident from the description, the process consists in substituting an agar-agar solution containing formalin for celloidin. The advantage over the celloidin method being that the aqueous solution of agar-agar at once penetrates the tissue, making preliminary dehydration unnecessary.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

[May 16, 1903. Vol. XL, No. 20.]

1. Illustrations of Mixed Infections in Pulmonary Tuberculosis, with Notes on Comparative Treatments. PAUL PAQUIN.
2. The New United States Pharmacopoeia. JOSEPH P. REMINGTON.
3. Case of Funnel Pelvis with Cesarean Section. CHARLES B. REED.
4. Theories of the Transmission of Hereditary Syphilis. ALFRED SCHALEK.
5. The Treatment of Leprosy. A. H. OHMANN-DUMESNIL.
6. Anatomic and Physiologic Correspondences of Child and Adult. W. T. ECKLEY.

1.—Mixed Infections in Pulmonary Tuberculosis.—Practitioners who differentiate conditions among their tuberculous patients with a view to selecting appropriate remedies and nutrition are still in the minority. P. Paquin illustrates his paper with 13 colored cuts showing different forms of complicating bacterial invasion requiring different treatment. He also shows the various kinds of debris found. A consideration of the lymphatic system in the lungs demonstrates how important nebular intrapulmonary medication is in all cases in which the lymphatics must be reached. The circulatory system explains the success of internal and hypodermic medication. It is not good practice to apply 40 or 80 pounds of pressure to tuberculous throats, thus causing hyperemia, nor to seriously inflamed bronchi, and sometimes there is danger of rupturing the air cells. Nebulæ will not penetrate consolidated areas, which, while not receiving blood freely do absorb its essentials from neighboring sources. Proper nourishment and air are the first indications. Special complications demand special measures of relief. The juice of 4 to 6 pounds of steak daily between meals acts as nourishment and medicine both. [H.M.]

2.—The New Pharmacopoeia.—J. P. Remington gives an outline of the organization of the committee and their present method of working by correspondence, of the assistance afforded by the "Digests of Criticism," which are compilations of criticism and suggestion from pharmaceutical journals throughout the world. The idea of an international pharmacopoeia has proved impracticable, but all civilized nations should agree on a uniform strength for "potent remedies."

The new pharmacopoeia will not please every one, but will be abreast of the times. [H.M.]

3.—Funnel Pelvis.—C. B. Reed reports a case successfully operated on, and reviews the subject generally. Prognosis in general is not favorable, but the result depends on the degree and variety of contraction and especially on the operation. [H.M.]

4.—Transmission of Hereditary Syphilis.—A. Schalek concludes from a study of the evidence that the father's sperm-cell may contain the syphilitic virus and convey it to the child without participation of the mother; the maternal generative cell may contain the virus and result directly in a diseased fetus; the placental circulation permits the passage of the infectious matter either way. Several or all of these factors may combine, and the more of them are present the less probable the escape of the child; the probabilities of transmission through the mother are greater because of more ways of possible influence. [H.M.]

5.—See proceedings of American Medical Association, New Orleans, May 5-8—"Section on Cutaneous Medicine."

6.—See *American Medicine*, Vol. V, No. 20, p. 777.

Boston Medical and Surgical Journal.

May 21, 1903. [Vol. CXLVIII, No. 20.]

1. The Duties and Responsibilities of Trustees of Public Medical Institutions. W. W. KEEN.
2. Social Conditions in America in Their Relation to Medical Progress and Disease. J. M. ANDERS.
3. Differential Diagnosis in Diseases of the Gallbladder and Ducts. GEORGE EMERSON BREWER.

1.—See *American Medicine*, Vol. V, No. 20.

2.—See *American Medicine*, Vol. V, No. 19.

3.—See proceedings of the Congress of American Physicians and Surgeons, Washington, May 12 to 14, 1903.

Medical Record.

May 16, 1903. [Vol. 63, No. 20.]

1. Uremia and Its Treatment. W. H. THOMSON.
2. A Study of the Rectum, with Reference to the Causative Factors of Obstruction (with Demonstrations). LOUIS J. HIRSCHMAN.
3. Is the Gallbladder as Useless as It is Dangerous? WOODS HUTCHINSON.
4. Ocular Symptomatology in Diagnosis. HENRY B. HOLLEN.

1.—Uremia and Its Treatment.—W. H. Thomson reports a fatal case of suppression of urine, without any uremic symptoms, due probably to calculus, and concludes that the poisons generated must have been different from those of uremia. In the latter disease the poison acts like suprarenal extract, as a vasoconstrictor. He considers aconite the ideal vasodilator, and ascribes the arteriocapillary sclerosis of long standing kidney disease to high tension. The resulting obliteration further increases tension. When obliteration is widespread we cannot expect much from vasodilators, and in senile heart aconite must be given with discrimination. In puerperal eclampsia the speediest dilator is venesection, and next large doses of veratrum viride. He does not incline to the view that eclampsia is caused by deficient thyroid secretion, since similar conditions occur in acute alcoholism in men. Degeneration of visceral cells is not due to a special toxin, but to the arterial ischemia. There are some cases of deficient urea elimination in which Thomson would not prescribe aconite. Many of these are dependent on gastrointestinal, not organic kidney disease. In scarlatinal nephritis he gives calomel daily till the tongue desquamates. The danger signal here is not the appearance of albumin, but deficient quantity of urine and low specific gravity. In threatening suppression a normal saline rectal douche of two gallons, at 115° F., is most certain in its results. Uremic convulsions may be the first announcement of chronic Bright's disease, the sudden change being due to invasion of the kidneys by bacteria. Mercurial cathartics and urotropin with sodium benzoate .65 gm. (10 grains) each, should be given. Patients with cirrhosis should not eat heartily after midday. The best remedy for autoinfection is outdoor life. Increasing the arterial supply of the kidney by operation seems rational

treatment. Change from liquid to solid diet acts well in some cases of dropsy. [H.M.]

2.—A Study of the Rectum: Obstipation.—L. J. Hirschman insists that too little is known about the rectum, its diseases, and the reflex symptoms which they may cause. Numerous diseases, referred symptomatically to the genital tract, the digestive tract, and other remote parts of the body, are due largely to a pathologic condition in the rectum. Sciatic pain, incontinence or retention of urine, herpes, and nasal symptoms may arise from lesions in this situation. Obstipation is some mechanical obstruction preventing or limiting the normal fecal discharge. It may be an enlarged prostate, retroverted uterus or prolapsed ovary, etc., but it is most commonly due to enlargement and hypertrophy of one or more of the rectal valves. A thorough rectal examination with the proper instruments should be insisted upon in any case of suspected rectal trouble. The technic of rectal examination is given. Obstipation may be responsible for symptoms of intestinal indigestion, gaseous disturbances, palpitation, sciatica, acne, furunculosis, and other spinal affections and numerous reflex disturbances. The enlarged and hypertrophied rectal valve should be operated upon when it is the cause of obstipation, as it frequently is. Having exposed the valve with the speculum make a V-shaped cut with scissors from its free border to the base, then grasp and crush the free-cut edges with the author's valvotribe. Pack the rectum with iodoform gauze, with a rubber tube in the center, and keep the patient in bed for from three to seven days. [A.B.C.]

3.—The Gallbladder Useless and Dangerous.—Wood Hutchinson deals at some length upon the comparative anatomy of the gallbladder and gives a summary of his findings and conclusions from the viewpoint of the internist. They are as follows: The gallbladder is a nearly functionless organ, inadequate in size to act as a reservoir of any value for the bile, inadequate in muscular power and in mechanical position to exercise any important effect upon the pressure of the bile flow, entirely absent in many species without interfering with the processes of digestion or the vital functions in any way, capable of removal from a species in which it is normally present without noticeable injury, and chiefly notable as a settling basin for the formation of gallstones, a suitable harbor for the multiplication of pathogenic bacteria, or for the assumption of pathogenic properties by nonpathogenic forms. In short, it seems a source of danger at least double any possible usefulness which it may possess. He believes the bile itself is not so necessary to digestion as has been supposed by physiologists, and that it is for the most part an excretion. [A.B.C.]

4.—Ocular Symptomatology in Diagnosis.—H. B. Hollen thinks disregard of the eye as unpardonable as failure to feel the pulse, as ocular disturbances are often the first manifestation of important lesions. He deplors unfamiliarity with the ophthalmoscope. He points out the value of ophthalmoscopic findings, and of attention to subjective ocular symptoms, as well as to conditions noted in unaided inspection of the eye and its appendages. [H.M.]

New York Medical Journal.

May 9, 1903. [Vol. LXXVII, No. 19.]

1. Medical Education in the United States. FRANK BILLINGS.
2. Social Conditions in America in Relation to Medical Progress and Disease. J. M. ANDERS.
3. Cancer and Immunity. A. F. JONAS.
4. Report of a Case of Pulsating Empyema Necessitatis, with Three Strongly Pulsating Tumors. FREDERICK P. HENRY.
5. A Case of Epidural Abscess of Otitic Origin: Operation; Recovery. J. GUTTMAN.
6. Astigmatism Cured by Corneal Trauma. PERCY FRIDENBERG.

1, 2, 3.—See *American Medicine*, Vol. V, No. 19.

4.—Pulsating Empyema Necessitatis.—A detailed account of a case seen over 22 years ago is given by J. P. Henry. Meager notes were then published in a volume of society transactions not accessible to the general reader. The patient was a woman of 30. On the left side of her chest were three strongly pulsating tumors; one in the mammary region the size of half a large orange; a second, much smaller and of conical shape, in the left anterolateral region, *i. e.*, in the eighth intercostal space

in a line with the anterior axillary border, and a third, the largest of the three, in the left posteroinferior region, its longest diameter, about four inches, corresponding with that of the vertebral column. The large anterior tumor contained air and fluid. The patient was operated on and was known to be alive and well one year thereafter. The subsequent history is unknown. Henry adds references of 15 additional cases of pulsating pleurisy to the 68 tabulated by J. C. Wilson in 1893. [C.A.O.]

5.—A case of epidural abscess of otitic origin is reported by J. Guttman. The patient, a girl of 15, was taken with influenza, and this was followed by an acute purulent inflammation of the middle-ear. Later cerebral complications became evident, and upon opening the antrum a stream of pus came out. A fistula was found leading from the antrum downward and backward to an epidural abscess. About two ounces of pus were removed, it was under high pressure and was pulsating. The dura was covered with a thick, villous, fatty, grayish-colored granulation tissue, which was removed with a sharp spoon. The wound was packed and recovery followed. [C.A.O.]

6.—Astigmatism Cured by Corneal Trauma.—The case reported by P. Fridenberg is that of a physician who was struck in the eye with a piece of wood. The detailed ophthalmologic conditions before and after the injury are stated. He considers the mechanism of the cure to be exactly that which produces astigmatism after cataract extraction, *viz.*, the flattening of the corneal curve from scar contraction. As the corneal section is usually upward or downward the vertical meridian is affected, becomes flattened, requires a convex cylinder, axis horizontal, to increase its refraction; we have astigmatism against the rule. This decreases within the first month or two after operation, by which time an irreducible minimum is found, the amount of which depends upon the extent, position, and manner of healing of the corneal section. In the case reported there was no actual section, merely a superficial—although extensive—incision of the cornea. The astigmatism was correspondingly slight and by a most peculiar chance just sufficient to neutralize a preexisting inequality of curvature. [C.A.O.]

Medical News.

May 16, 1903. [Vol. 82, No. 20.]

1. Fracture at the Base of the Skull: Neurologic and Medicolegal Considerations. PEARCE BAILEY.
2. Notes on Blood-pressure in Man. S. S. GOLDWATER.
3. Some Recent Advances in Medical Therapeutics. THOMAS E. SATERTHWAITHE.

1.—Fracture at the Base of the Skull: Neurologic and Medicolegal Aspects.—Pearce Bailey reports 68 cases of fracture at the base, which, with those of Heer, Van Nes, and Phelps, comprise an aggregate of 494. The mortality in this series was 57%. According to statistics given 62% of the deaths occurred during the first 24 hours, and 95% during the first five days. Alcoholism profoundly affects the immediate and ultimate prognosis. The writer has been able to follow 15 of the 29 cases which recovered in his series of 68; and from these he believes the probability of mental impairment following fracture at the base of the skull is very small indeed. From certain figures given he estimates that at least 150 persons are discharged annually in New York City as cured of fracture at the base. The exceedingly small number of patients appearing at the asylums with the above history further strengthens his conclusions based upon his own cases. He says it would seem, therefore, that fracture at the base is an entirely unimportant cause of mental states which make commitment necessary or which render the patients incapable of earning their livelihoods. From this condition it is not proposed to generalize too freely. Fractures at the base can hardly be compared to those of the vault with the direct involvement of the cortex in the latter. But it seems justifiable to apply such conclusions as we have arrived at in regard to the ultimate results of fracture at the base to the ultimate results from simple concussions of the brain. [A.B.C.]

2.—Continued.

Philadelphia Medical Journal.

May 16, 1903. [Vol. XI, No. 20.]

1. Tumors of the Breast: London Lecture Delivered at the London Hospital. JONATHAN HUTCHINSON, JR.
2. A Case of Femoral Thrombosis in Acute Croupous Pneumonia. D. J. MILTON MILLER.
3. Tetanus: A Study of 57 Cases from the Records of the Pennsylvania Hospital. GEORGE WILLIAM NORRIS.
4. Gastric Carcinoma Associated with Hyperchlorhydria and with Attacks of Stupor. NORMAN B. GWYN.
5. Foreign Bodies in the Bladder. SWITHIN CHANDLER.

1.—**Tumors of the Breast.**—Jonathan Hutchinson, Jr., first briefly refers to Paget's eczema, which, in certain cases, is a precursor of malignant tumor. The supposed parasites in Paget's eczema are only the results of epithelial degeneration. As regards treatment, supposing the nipple is affected, excision of the breast is the safest procedure, since experience with all kinds of caustics and local applications has been disappointing. If it is necessary to excise the nipple and surrounding skin, obviously the patient is better without the breast, which can be of no use and which may become cancerous. Of the cysts in the breast 80% are retention cysts; they are of especial interest because of the frequency with which they are mistaken for carcinoma; their contents are almost invariably of a milky nature and a majority of the cases are cured by a single tapping. Before excising a breast, the surgeon should first cut into the substance of any suspected cancer, to make sure of the diagnosis. The knife that has entered the tumor should be at once laid aside, the edges of the incision clamped together with volsella forceps, then there can be no real risk of infecting the surrounding tissue with cancer cells. There is no evidence that carcinoma especially selects the breasts that are the seat of multiple cysts, and, unless the patient is very anxious about her condition, it is best to leave them alone. Cystic sarcomas are too frequently diagnosed as abscesses. He has done 100 complete removals of the breast in the London Hospital for Malignant Disease, with a mortality of 4%. In making a diagnosis of carcinoma of the breast, cachexia is the least reliable sign; the most important sign apart from the stony hardness of the tumor is the adherence to the skin in the early stages, and this should be most carefully looked for. Retraction of the nipple is not a very constant feature, and, therefore, not a safe one to rely upon in making a diagnosis. The glands just under the pectoral muscle and against the side of the chest are those earliest involved. In order to obtain primary union wherever possible, do not carry the incision through the middle of the axilla, but upon the pectoralis major. Avoid drainage-tubes. Never tie the arm to the chest, but always bandage with the arm away from the side. This is to avoid subsequent stiffness. Dissect out the glands that are adherent to the axillary vein, do not cut the vein. Always clean out the axilla. With regard to the value of oophorectomy in the treatment of cancer, the evidence is that in a few cases it retards the growth, and that is about the best that can be said for it. There is no safe "time limit" of cure. The more experience one has with recurrences, the more one is encouraged to operate. Even when the deposits recur in what would apparently seem a most hopeless form with multiple nodules scattered round about the scar, one occasionally gets a cure from persisting excisions. [F.C.H.]

2.—**Femoral Thrombosis in Acute Croupous Pneumonia.**—D. M. Miller reviews the literature of femoral thrombosis in acute croupous pneumonia and details the history of a case, which is the first he has seen in a hospital experience of 18 years. A possible explanation of the infrequency of thrombosis in pneumonia is the short duration of that disease. Much evidence has been accumulated to show that the thromboses of the acute infectious diseases as well as other thromboses are due to bacteria or their toxins; in the case herein reported cultures taken from a branch of the internal saphenous vein near the ankle on the third day remained sterile. [F.C.H.]

3.—**Tetanus.**—G. W. Norris details a study of 57 cases of tetanus from the records of the Pennsylvania Hospital, Philadelphia. The patients were admitted to the hospital between January, 1874, and 1903. Curiously there was an absence of tetanus cases between the years 1886 and 1893, for which there hardly appears any explanation. Of the 57 patients 48 died, rendering a general mortality of 84.2%. This includes all

varieties of cases under different modes of therapeutics. Death, while more common in the first four days after the onset of symptoms, occurred with almost equal frequency up to the eleventh day, which is contradictory to Yandell's statement, that if a patient lives five days there is good hope for recovery. The belief that the longer the period of incubation the better would be the chance of recovery has not been corroborated by this series of cases. Of 13 cases, with a urinary specific gravity above 1,026, 77% died. The first symptoms of the disease were usually pain and stiffness in the back of the neck. Fever was present in all cases. In 11 patients death occurred during convulsions, in 12 instances from asthenia without convulsions; 7 of the patients were treated by the Bacelli method, with a mortality of 85%; hence in this series it has proved valueless. He concludes as follow: Tetanus toxin is found mainly in the nervous tissues; that once united with these antitoxin is powerless in its action on already affected cells; that antitoxin is harmless but deteriorates rapidly, therefore it should be procured freshly and administered in continuous and large doses with the hope of immunizing the intact nerve cells; that all cases of wounds in which there is a possibility of tetanic infection should receive prophylactic injections of antitoxin; local treatment is of great importance, hence the infected area should be excised. When this is impossible extensive disinfection, preferably with carbolic acid, should be carried out; furthermore, that as Behring has shown, antitoxin is of benefit locally as well as systemically; every effort should be made to maintain the nutrition of the patient, for Castronuovo has demonstrated that antitoxin is of no value in tetanic animals which have been starved. [F.C.H.]

4.—**Gastric Carcinoma.**—N. B. Gwyn details a case of gastric carcinoma associated with hyperchlorhydria and with attacks of stupor. The origin of the stupor was obscure. Death eventually occurred, and a partial autopsy was obtained; 5 cm. from the pylorus, in the anterior wall of the stomach, there was a mass the size of a goose egg. The tissue removed showed the tumor to be a typical adenocarcinoma. [F.C.H.]

5.—**Foreign Bodies in the Bladder.**—S. Chandler details the history of two cases. One was a man of 58, who inserted a combination glass penholder in the urethra in order to practice masturbation; the penholder slipped into the bladder, and necessitated an anesthetic for its removal. The other was the case of a girl of 18, who at one time suffered from cystitis, and was taught how to catheterize herself. By placing the glass catheter part way into the meatus she managed to practice masturbation. The portion of the instrument in the urethra on one occasion was broken and slipped into the bladder, giving rise to a cystitis. She concealed the true cause of the condition for seven months, when she sought medical attention. The uterus was thought to be the cause of the uncontrollable cystitis. Upon exploring the bladder, however, the broken catheter was found. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

REVIEW OF LITERATURE

The Clinical Value of Urinary Signs in Hepatic Insufficiency.—L. Ingelrans and M. Dehon¹ contribute the results of a research into the value of certain urinary signs commonly considered to be of value as indicating hepatic insufficiency. The following were investigated: Alimentary glycosuria, hypoazoturia, hyperammoniuria, urobilinuria, and indicanuria. Sixteen patients having various hepatic lesions and three healthy persons formed the basis of the investigations. The principal conclusions reached are: (1) Alimentary glycosuria is frequently absent in diseases of the liver, even when the parenchyma of the organ is markedly altered. Its absence then simply proves that the glycogenic function of the liver is still retained; (2) hypoazoturia is nearly constant when the liver is anatomicly altered; (3) while it is possible that hypoazoturia and fluctuations in the azoturic ratio may not be sufficient grounds on which to affirm hepatic insufficiency, these two signs are of great value in calling the attention of the clin-

¹ Arch. de Med. Exper. et d'Anat. Path., March, 1903.

icjan to the state of the liver; (4) indicanuria is a sign of secondary importance; (5) urobilinuria appears to be a sign of cholemia and not of hepatic insufficiency; (6) the signs of hepatic insufficiency are not constantly united in any one patient. The functions of the liver are readily dissociated, and one may be at fault while the others remain in good condition. [A.G.E.]

Infantile Scurvy.—H. S. Beadles¹ reports the case of a child 22 months old. The patient was anemic, with quickened pulse and respiration, furred tongue, and a history of constipation. The gums were swollen, spongy, and purple in color. There was beading of the ribs, enlargement of the ends of the radius, ulna, tibia, and fibula, and the anterior fontanel was open. The left thigh was more than twice the size of the right, tender to the touch, and the skin tight and brawny. The left shoulder was swollen and the muscles were flabby. Syphilis was excluded. The child had been nursed until 10 months of age, since which time it had been fed on a predigested food. This food was stopped, and the child was given plain, unboiled cow's milk, slightly diluted with barley water. Raw meat juice, beef tea, yolk of egg, juice of one orange daily, some green vegetables boiled until soft and passed through a sieve and mixed with cream, were all given. Dialyzed iron, citric acid, and glycerin were administered. The child at once began to improve, and within three weeks had recovered. The author is of the opinion that the case was one of undoubted infantile scurvy. [A.B.C.]

True Hermaphroditism.—Garré² operated on an individual 20 years of age who was anxious to know the sex he belonged to. He had been raised as a boy, but of late had developed characteristics belonging to both sexes. His breasts were large, and he had a regular menstrual flow; his sexual thoughts connected themselves with the female sex, and were associated with a white mucoid discharge. Externally, also, he presented characteristics of both sexes. At the operation an apparently useless tube and ovary were removed, as well as portions of what seemed to be testicle and epididymis. Microscopic examination confirmed this diagnosis. According to Garré, this is the first case where in the living subject both ovarian and testicular structure, the latter in an aspermatogenic state, were positively recognized. [E.L.]

The Medical Treatment of Tuberculous Peritonitis in Children.—L. Guthrie³ says that in discussing this subject he is hampered by the prevalent notion that surgeons alone are able to cure this disease. His own experience leads him to think that the prognosis in uncomplicated cases of tuberculous peritonitis in children is by no means so grave as we are taught to believe and that the triumphs of surgery in curing this disease have been overrated. Of 41 patients treated at the Paddington Green Children's Hospital, 14 underwent laparotomy and 7 died, while of the remaining 27 treated medically only 4 died. Guthrie states that medicinal treatment is almost entirely symptomatic, the chief symptoms calling for treatment being pain and abdominal tenderness, flatulency and indigestion, diarrhea or constipation, vomiting and ascites. In most of the medical cases cited mercury was given, either by inunction or internally. In acute cases it is inadvisable to remove ascitic fluid unless it produces great distention and distress. In more chronic cases it should be withdrawn. In these cases there is no mystery in the results of simple laparotomy, that procedure being useful only because it lets out fluid. In dry cases, also supposed to be cured by operation, the patients would recover equally well if let alone. Surgical interference is necessary in cases of obstruction, suppuration, and perforation. Caseous mesenteric lymph-nodes should be removed. It will be observed in all of these cases something more is necessary than merely opening the abdomen and looking inside. [A.G.E.]

Myogen, a New Albumen Preparation.—Myogen is a purely animal albumen, prepared from the blood-serum of freshly killed cattle, in such a manner that the molecule of albumen cannot change in the least. R. O. Neumann⁴ has investigated its properties and reports as follows: Both the

powder and the cakes are well assimilated, the organism being able to absorb as large quantities of it as of meat; it has, however, not quite the same nutritional value as fresh meat. The cakes are probably preferable to the powder, as they are of more agreeable taste, and are more concentrated, containing 20% of albumen, 50% carbohydrate, 10% fat. [E.L.]

Experimental and Clinical Investigations with Saline Infusions.—W. Ercklentz¹ gives a detailed review of the literature on the use of saline infusions in acute anemia, intoxications, and infections. The value of the infusion in the two latter classes is due to the production of a profuse diuresis. A 0.6% solution is not the harmless agent it was formerly believed to be, as bad results have been produced by its use, both experimentally and clinically. Investigations have shown that a 0.9% to 0.92% solution is more desirable. The author gives the results of original investigations as to the value of saline infusions in cases of poisoning by various drugs. His experiments in animals show that it is possible, through increased diuresis, to wash out the poison to a considerable extent. A poison such as cantharides, however, which exerts a deleterious action on the kidneys, will diminish urinary excretion, and thus counteract the saline infusion. Likewise with a poison such as strychnin, which acts so quickly and energetically on the vital centers, the infusion will come too late. The possibility of washing out the poison also depends, to great extent, on the strength or weakness of the combination which exists between it and the bodily tissues. The author has found saline infusions to be of value also in cases of infection, in uremic conditions, and in severe anemias of apparently toxic origin. [B.K.]

Potassium Permanganate in Erysipelas.—E. T. Martynowski² has used potassium permanganate in numerous cases of erysipelas and is gratified with the results. The drug was employed in solutions simply prepared by adding enough water to obtain a deep violet color. A linen cloth folded three times and wetted with the solution was applied to the diseased area. It is not advisable to soak the linen in the fluid, but rather to keep the compress wet by pouring the lotion upon it. This method promptly alleviates pain and promotes recovery, beside having the advantages of cheapness and simplicity. The author has also tried the serum method in erysipelas, but without success. Nevertheless he is convinced that serotherapy will be the ultimate outcome of our efforts. [L.J.]

Boric Acid in Medicine.—G. Merkel³ prescribed boric acid in the form of a watery solution to 11 different patients suffering respectively from hepatic cirrhosis and chronic nephritis. They were given 30 grains (2 grams) daily for periods varying from two to eight days. In all of the cases the urine was increased to double the previous quantity; seven patients, however, complained of symptoms of gastrointestinal disturbance, such as colic, gastric pain, and diarrhea. Now inasmuch as the amount of boric acid taken in the course of the day, when meats preserved with it are used, must exceed the amount used as a drug, it goes to show that it certainly is not the harmless agent that some people are claiming it is. [E.L.]

Snake Venoms: Their Physiologic Action and Antidote.—G. Lamb⁴ finds the poisonous properties are due to various albuminous substances, each venom containing two or more differing from those secreted by a different variety. Cobra venom acts directly on the central nervous system, causing complete paralysis, the heart beating 20 or 30 minutes after respiration has ceased. It has marked distinctive action on the red cells and diminishes the coagulability of the blood. Local poisoning is marked, a deep-black slough forming. He has never seen paralysis from daboia poison. Convulsions set in almost immediately. If the dose has been large, the whole of the blood is found clotted solid. Apparent action on the central nervous system is due to carbonic acid poisoning. Death is from cardiac depression. In chronic cases coagulability is diminished, the red cells are broken up, the capillary walls are injured, becoming more permeable, and exudation occurs, hemorrhages and edemas being common. The tissues around the wound die, forming a nidus for bacteria, and death usually

¹ British Medical Journal, April 11, 1903.

² Deutsche medizinische Wochenschrift, January 29, 1903.

³ Archives of Pediatrics, April, 1903.

⁴ Münchener medizinische Wochenschrift, January 20, 1903.

¹ Zeitschrift für klin. Med., Bd. xlviii, p. 171.

² Medizinskoe Obosrenie, lix, No. 5.

³ Münchener medizinische Wochenschrift, January 20, 1903.

⁴ Glasgow Medical Journal, February, 1903.

results from secondary infection. In the bungarus or Krait family the venom causes thrombosis similar to that in daboia poisoning. In rapid cases there are paralytic symptoms like those from cobra venom. Calmette's serum is of no avail in daboia poisoning. In cobra poisoning it should be injected in a vein, 40 cc. (1½ oz.) being necessary in some cases, repeated later should symptoms come on. A ligature should be applied about the bite, and nothing else be done locally. Daboia and Krait poisoning must be treated on general principles. [H.M.]

Bacteriologic Diagnosis of Typhoid Fever.—C. Hayashikawa¹ concludes that the bacteriologic diagnosis of typhoid fever is of great importance in those cases resembling typhoid in which the clinical history cannot be differentiated from typhoid. The presence at one time of the Gruber-Widal reaction has not much value, as this reaction may appear off and on for a long time after an attack of typhoid. It is absolutely necessary to repeat the examination at intervals of three to five days. It is scarcely possible to establish a certain diagnosis by the Gruber-Widal reaction alone in a short time. The bacteriologic examination of the stools was positive in 60%; of the urine, 18.1%; of both, 65%. This is explained by the fact that in typhoid fever in Prague the ulcers of the intestines are insignificant. Examination of the roseola in 12 cases was positive in 7 cases. Puncture of the spleen was positive 17 times out of 18. For the early and positive diagnosis of typhoid fever puncture of the spleen is indispensable, at the same time harmless. In many cases the typhoid bacilli become discharged in bulk in the stools, diminishing during the next day to a very small amount. [J.H.W.K.]

Treatment of Pneumonia.—J. B. Herrick² emphasizes the following points: (1) Do not shut off fresh air from the patient; (2) do not feed according to any fixed rule; (3) give water with a free hand; (4) morphin will give good results in cases of protracted insomnia or obstinate pain; (5) fever should be controlled by hydrotherapy; (6) local applications are seldom indicated; (7) bleeding is not out of date in selected cases; (8) few pneumonics need alcohol; (9) the only rational treatment is the expectant and symptomatic. Do not follow a "treatment" for pneumonia. It will lead to useless or overdrugging of many patients. [A.G.E.]

Exercise in the Treatment of Pulmonary Tuberculosis.—Penzoldt³ makes the statement that most cases of pulmonary tuberculosis exercise much more than they should, especially when in sanatoriums for treatment. He urges many points, which make it seem that in most of the cases, even the very earliest ones, too much rest is better than too much exercise. Patients with a rectal temperature of 100.4° F. or over he places at absolute rest, giving them as much fresh air at the same time as possible. If the temperature is lower than this he permits careful walks of from ¼ to ½ hour duration, but urges the taking of the temperature by rectum immediately upon its conclusion to note the effect of the walk. If it rises abnormally he cuts the walk down or off; if otherwise, he cautiously increases it. [E.L.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

REVIEW OF LITERATURE

Simple Method of Operating for Hemorrhoids.—A. B. Mitchell⁴ has followed a simple method of operating for hemorrhoids for some years which he deems worthy of report. The sphincter is dilated and the hemorrhoids brought into view as usual. The pile is then clamped in a long, narrow-bladed forceps (Kocher's artery forceps answer well). The pile is then cut away with the forceps still in position, and a continuous catgut suture is carried through the hemorrhoidal stump, the number of turns being taken depending on the length of the stump. The forceps is now removed and the suture drawn tight and tied, thus preventing any hemorrhage and practically closing the wound to infection. Each pile is treated in the

same way. The advantages of this method are its rapid accomplishment, little loss of blood, the hemostatic action of the suture after forceps are removed, no danger of subsequent hemorrhage, and the fact that the bowels may move in the regular time and way after operation. [A.B.C.]

The Surgical Treatment of Marked Ascites.—F. Lejars¹ reviews at length the results of surgery in cases of ascites, stating that while the conclusions of the advocates of omentopexy are, in his opinion, too optimistic, this is only one of the surgical procedures that may be employed in these cases. He endeavors to prove that surgery, in a relatively large number of ascitic affections, is capable of producing a cure which other therapeutic means cannot bring about. In other conditions, impossible to cure, it is still the best means of relieving the patient and of prolonging his life. In cases of doubtful diagnosis early operation is indicated. Lejars' experience with omentopexy is limited to three cases, two of which were too late in the course of the disease to judge of the value of the operation, while in the other only temporary relief was given. He holds that a marked cirrhotic ascites is an indication for laparotomy, and to give positive results it must be done early. [A.G.E.]

Teratoma of the Sacral Region.—J. Preindlsberger² reports two cases. The tumors were congenital in both, but came under observation in the first month in one case, and not until the nineteenth year in the other. In the infant's case the teratoma was about twice as large as the child's head, and was attached to the buttocks by a broad pedicle. In the second case the tumor was the size of an orange, and was situated between the coccyx and the anus. Both tumors were cystic. The cysts were lined with squamous, cuboidal or columnar epithelium, in one or several layers, the cells in some places being ciliated. The cystic fluid in the second case contained cholesterol crystals. The solid parts of the tumors were made up of fatty and connective tissue, and also contained blood and lymph-vessels, medullated nerve-fibers, neuroglia, ganglion cells, smooth muscle-fibers, and tubular and acinous glandular tissue. The tumor in the second case also contained rests of cartilaginous and bony tissue, in one place amounting even to a rudimentary rib and costal cartilage, surrounded by striped muscle-fibers. [B.K.]

Fibrous Stricture of the Rectum Following Dysentery.—R. J. Blackham³ reports that a medical man who had resided five years continuously in India was first attacked by dysentery in 1898. This was followed by other attacks in the two following years. None of the attacks was severe, and all yielded to ordinary treatment. For five years prior to the diagnosis of stricture the patient suffered from grave irregularity of the bowels, constipation alternating with diarrhea, some "ribboning" of the stools, all of which had been attributed to hemorrhoids. Purgation and enemas became necessary in order to effect a passage. Digital examination revealed a narrowing of the gut 1½ inches from the anus. The stricture contained a central aperture, which barely admitted the tip of the forefinger. The patient returned to England, where, under surgical care, the stricture was forcibly dilated under an anesthetic and a passage of bougies resorted to. He is now convalescent, but the author is of the opinion that bougies will have to be used for several months. The stricture is believed to have been induced entirely by the attacks of dysentery. [A.B.C.]

Splenic Infections, With Reports of Cases of Splenotomy and Splenectomy.—A. L. Stavely⁴ says the pathologic conditions of the spleen which interest surgeons are tumors, splenic anemia, leukemia, tuberculosis, syphilis, amyloid disease, enlargements connected with cirrhosis of the liver, congestive hypertrophies, wandering spleen, malarial hypertrophy, infections (pyogenic), and infarcts. These are considered seriatim. Two cases are reported. The first occurred in a woman of 33, the diagnosis being splenic abscess with perforation of the kidney and discharge of pus by the urethra. A lumbar opening on the left side revealed an abscess from which a pint of pus was obtained. The second case was that of a

¹ Zeit. f. Heilkunde, February, 1903, page 49.

² Chicago Medical Recorder, April 15, 1903.

³ Münchener medicinische Wochenschrift, January 6, 1903.

⁴ British Medical Journal, February 28, 1903.

¹ La Semaine Médicale, March 25, 1903.

² Zeitschrift für Heilkunde, Bd. xxiv, 1903, Heft. 5.

³ British Medical Journal, April 11, 1903.

⁴ Washington Medical Annals, March, 1903.

woman of 32, who had an abdominal tumor reaching into the pelvis, the diagnosis of hypertrophied septic malarial spleen being made. Splenectomy was performed, the degenerated spleen being found within an abscess sac. Operation and later examination of the removed organ showed the true condition to be a complex one, consisting of displacement of the spleen, malarial hypertrophy, hemorrhage, suppurative perisplenitis, infective splenitis, thrombosis of the splenic vessels and infarction. The spleen weighed 944 gm. (31 ounces). The patient recovered. [A.G.E.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

EDITORIAL COMMENT

The Sex-determining Factors.—In an address recently delivered before a scientific society in Budapest, v. Lenhossék¹ enunciates some interesting theories regarding the factors that determine sex. He maintains that the development of male or female individuals is solely and exclusively dependent upon the presence in the ovary of two sorts of eggs, male and female. Therefore sex is a gift from the mother; while in the inheritance of other qualities father and mother share, inasmuch as the same number of chromosomes from the paternal and the maternal organism exist in the fertilized ovum. A distinction is thus drawn between the inheritance of sex on the one hand and that of the remaining qualities on the other. The spermatozoon merely serves to inaugurate the development of the ovum, and is the carrier of the transmissible parental qualities. The arguments are supported by illustrations from zoology and by observations on human twins. As regards the latter point, it is known that bival twins may be of different sex, while unioval twins are always of the same sex. If v. Lenhossék's contentions are substantiated, it follows, as he himself indicates, that the human embryo is, from the very earliest day, sexually differentiated. He rejects Schenk's theory as to the voluntary determination of sex in man. Students of this subject should not overlook the very suggestive study of Kolipinski, published in the *Medical News* of November 22, 1902.

REVIEW OF LITERATURE

Colpeurynter in Incarceration of Reflexed Gravid Uterus.—W. Albert² claims that the physician often fails to cure or uses wrong measures because of error in diagnosis; but diagnosis is not difficult when two points are sufficiently considered: (1) The cessation of the menses; (2) the immediate catheterization of the bladder in obscure conditions of the female pelvis. In incarceration of the reflexed gravid uterus, naturally the first measure is manual reposition with or without an anesthetic, as the case requires. A breaking up of adhesions by the finger may be necessary, and this in many cases may prevent abortion. When manual reposition, however, can not be effected, or signs of difficulty occur, before resorting to surgical measures the colpeurynter should be tried. Albert has used it for five years in such conditions, and reports five cases. The method is simple, but should always be preceded by emptying the bladder and bowel. The rubber balloon of moderate size is introduced between the uterus and the pelvic floor and filled with from 200 cm. to 300 cm. of sterilized water. If this does not suffice to replace the uterus, after one-half or one hour, repeat with increased amount of water, 600 cm. being about the limit, until reposition takes place. In the cases reported these measures were employed at an early stage of pregnancy, varying from the second to the fourth month, with restoration of the uterus to its normal position and the continuance of pregnancy. [w.k.]

A New Pessary for Inoperable Genital Prolapse.—Menge³ refers to the existing pessaries, points out their defects,

and claims that they all fail to meet the requirements necessary in cases of inoperable prolapse of uterus and vagina. What is necessary is a ring which can be introduced into the vagina without any injury to the distended tissues, and yet be of sufficient size effectually to support the uterus and vagina in normal position, and be prevented by a peculiar mechanism from placing itself on edge, and which can be readily introduced and removed. Such an instrument Menge has attempted to construct. The new feature in this instrument, which he calls a club pessary, is that the ring and the club are fastened together by a bayonet clasp by means of which both parts are easily separated and reunited so that they can be introduced separately into the vagina and afterward they can readily be fastened together in their proper position. Thus one has gained the possibility of introducing a large ring edgewise through the introitus, and then above this in the wider part of the vaginal canal, the club stem is attached to it and a permanent transverse position assured. One advantage of this form is that, because of the round, thick end of the club, there is no fear of pressure necrosis of the vaginal wall; and secondly, through the increased size of the cone the sidewise pressure is entirely controlled. [w.k.]

A Case of Interstitial Pregnancy.—Max v. Holst¹ reports a case of interstitial pregnancy occurring in a woman who had had six previous normal pregnancies and deliveries. In the fifth month of the seventh pregnancy, while out walking, she was overcome with faintness and was sent to the hospital. The symptoms indicated internal hemorrhage, but as there was no temperature the patient was given eight days to recover strength. The abdomen was then opened showing a mass of old clotted blood from a part of the fundus uteri. The removal of this exposed a fetus lying in the abdominal cavity. On the left part of the fundus and adjacent uterine wall there was a small enlargement the size of a hen's egg extending to the point of tubal origin. In the posterior wall of this was an extended laceration within which was a swimming mass of blood and the placenta to which the navel cord was attached. The fetus and all its attachments being removed, the walls of the interstitial cavity were drawn together with deepseated, strong silk sutures, and the edges of the wound were united with fine silk sutures; this was followed by a careful toilet of the peritoneum with closure of the abdominal cavity. The patient made an ideal convalescence. A year later the woman returned to the hospital, being seven months pregnant and suffering from distressing pain in the region between the navel and symphysis. After a few days' observation a small exploratory abdominal incision was made, and the cause of the pain was found to be omental adhesions, which were broken up and the abdomen closed. At term the patient, after a normal labor, was spontaneously delivered of a female child weighing 3,250 grams. [w.k.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

EDITORIAL COMMENT

Epinephrin (Suprarenalin) Powder in the Asthmatic Paroxysm.—The editor of this department has on several occasions called attention to the value of adrenal preparations in the treatment of that variety of asthma associated with lowered vasomotor tone. The great difficulty has been in the administration of the drug. Taken into the stomach it often fails; it must be absorbed from the tongue or given hypodermically to get the best results. The latter method is obviously to be avoided if possible. Adrenal extract or desiccated adrenal substance in powder or tablet may be held in the mouth for a time, but usually the sufferer grows impatient and swallows the drug. A few drops of adrenalin chlorid solution may be placed on or under the tongue, but this has proved an uncertain method; for just what reason it is difficult to say, unless it is because the patient swallows the solution with his saliva.

¹ *Blolog. Centralb.*, April 15, 1903.

² *Münchener medicinische Wochenschrift*, March 24, 1903.

³ *Zentralblatt für Gynäkologie*, April 11, 1903.

¹ *Münchener med. Woch.*, March 10, 1903.

Often adrenalin chlorid is effective if applied to a clean nasal mucous membrane—and this apart from its local effect, which is also helpful. Recently Abel's epinephrin has been placed on the market under the name "Suprarenalin." It is marketed both as a nonhygroscopic powder and as a solution. In the latter form it seems to have about the same powers and applicabilities as the adrenalin chlorid solution. It is the powder, however, which is so admirably adapted for internal use. Placed on the tongue it is quickly absorbed and effective. The pulse is felt to become more full and more tense in less than 60 seconds after $\frac{1}{8}$ grain is placed on the tongue of a normal adult. One-half grain was taken by the writer of this, with transient ill-effects—throbbing of the temporal arteries, sensation of constriction of the head, sensation of weight upon the chest, and slight tendency to nausea. Similar effects were observed by a physician who permitted the same dose to be given to him in the same way. Exact measurements of blood-pressure were not taken. Powders containing $\frac{1}{12}$ grain of epinephrin in sugar of milk were made up and given to a patient suffering with vasomotorial asthma. Immediate relief to a paroxysm having been brought about by application of suprarenalin solution to the nose, the powders were taken at first every hour, then every second hour, then every third hour, with the apparent effect of preventing a return of dyspnea. A suitable form for administration would appear to be tablet triturates containing, say, .003 gram and .006 gram ($\frac{1}{30}$ grain and $\frac{1}{10}$ grain) each of epinephrin, with the least quantity of sugar of milk needed to give minimum bulk. These would probably dissolve readily and be even more convenient for lingual and buccal administration than powders or solution. In a number of other conditions associated with lowered vasomotor tone—among them hay-fever, as was first pointed out by the editor of this department in July, 1898—adrenal therapy is indicated and usually effective. A series of clinical experiments, with measurement of blood-pressure, in these conditions has been instituted and will be reported in due time.

REVIEW OF LITERATURE

Therapeutic Use of Glycerophosphates.—Street¹ says that glycerophosphate of sodium after prolonged administration causes improvement in the appetite and assimilative function, greater activity in the nitrogenous exchange and a reduction in phosphatic waste. Small doses cause a disappearance of nervous phenomena, such as neurasthenia and insomnia; larger amounts may occasion wakefulness. The glycerophosphates are indicated in all cases of nervous impairment due to overwork or excesses of any kind. They are especially useful in those neurasthenic conditions characterized by vertigo, occipital headache and inability for mental effort. In premature senility, in cases of hysteria and in various forms of neuralgia they have been useful. Magnin asserts that in diabetes he has seen the sugar diminish under their employment. They are counterindicated in albuminuria, in diseases characterized by excessive organic oxidation, and especially in any nervous state characterized by acute excitability. [H.C.W.]

Unilateral Restriction of Thoracic Movement to Produce Reexpansion After Pleurisy.—Tissier (Pneumotherapy, Cohen's System of Physiologic Therapeutics, Vol. x) points out that the respiratory insufficiency of one lung after a unilateral attack of pneumonia, bronchopneumonia or pleurisy results not so much from permanent structural alterations as from muscular insufficiency. The muscles, immobilized during the active stage of the disease, tend to undergo atrophy in the same way as the muscles of a limb after fracture or an attack of arthritis. When recovery ensues, the patient fails to use the side or member affected to its full capacity. Reeducation is necessary to restore to the affected muscles their previous power, and for this purpose the best form of gymnastics is one that compels the side or member to resume its function. This

result can be obtained by restricting the movements of the member on the healthy side, and in the case of the lung a similar plan may be pursued. The healthy lung not being allowed to perform its function as before, the deficiency is made good by the diseased lung; at first with pain, but later with greater and greater ease. In cases of unilateral lesions, such as diminution of the respiratory capacity, pleural adhesions, muscular atrophy following pleurisy, which are so common, the following procedure was advised by Schreiber in 1858: During inspiration the patient applies the corresponding hand flat to the healthy side, while he raises the arm of the diseased side and places the hand upon the head. The expansion of the healthy side is thus interfered with, while that of the affected side is facilitated. In cases of unilateral pulmonary lesions Schreiber likewise makes use of a restrictive appliance designed to compress exclusively the healthy side. It consists of two metallic plates suitably lined, one applied in front and one behind, united by a semicircular band of steel. By means of a screw attached to this band the patient approximates the two plates at will, and thus regulates the degree of compression of the thorax. This apparatus should be worn almost continuously.

Puerperal Sepsis Treated with Antistreptococcic Serum.—W. T. Schwabland¹ reports excellent results from the use of antistreptococcic serum in a case of puerperal sepsis. The serum was begun the fifth day and a total of 150 cc. used, 30 cc. every 24 hours. After the use of the serum the temperature fell, the pulse-rate diminished, and the mental condition improved. Schwabland states that the serum demonstrated its specific action in this case as markedly as does diphtheria antitoxin in cases of diphtheria. [A.G.E.]

Fluoroform in Pertussis.—Stepp² reports in detail 14 cases of whoopingcough treated with fluoroform. The ages of his patients ranged from 1 month to 7 years. The duration of the disease from the beginning of his treatment varied from 11 to 28 days. In all of his cases the administration of fluoroform was followed almost immediately by a lessening of symptoms. Hence the author believes this preparation has a specific influence upon whoopingcough. The exact mode of its action is not known. Fluoroform is tasteless, odorless, and not poisonous. Two of the author's patients, aged 2 and 3 months respectively, took in a period of three and one-half to four weeks 1,400 to 1,600 cc. of fluoroform with no ill effects. The dose is 1 to 2 teaspoonfuls hourly. [W.E.R.]

Thiocol in Tuberculosis.—L. Friedmann³ considers thiocol preferable to all creasote and guaiacol preparations. It is odorless and easily soluble in water. Clinical observation and experimentation upon the lower animals proved thiocol to have a specific influence upon tuberculosis. All the author's cases treated with this preparation showed amelioration of symptoms. Friedmann also used thiocol in tuberculous affections of the pleura, the trachea, etc. Because of its antiseptic action thiocol may also be used in other bacterial diseases of the air passages. [W.E.R.]

Preparation of Patient for Anesthesia.—Cardie⁴ advises that the patient remain in bed two or three days before an operation in order to produce both physical and mental relaxation. The diet should be light, and abundant fluid ingested. The free use of water before etherization very distinctly lessens after-nausea. This it does by aiding the elimination of the ether and diluting such portions of it as are eliminated by the stomach. The purgation usually preceding anesthetization draws off a considerable amount of water from the system, tending to increase the sickness. A glass of water should be drunk immediately before taking the ether. Cardie highly recommends the administration of morphin and atropin before anesthetization. The atropin, if used in sufficient quantity, .6 to .9 mg. ($\frac{1}{100}$ to $\frac{1}{75}$ gr.), reduces the irritability of the vagus, preventing the inhibitory heart arrest seen sometimes, especially with chloroform; it also acts as a stimulant to the heart and the vasomotor centers and respiration. The morphin lessens the fear of the operation, prevents any excitement which the full dose of atropin might cause, and allows a decidedly smaller

¹ Iowa Medical Journal, April, 1903.

² Prager medicinische Wochenschrift, March 12, 14, 20, April 2, 1903.

³ Prager medicinische Wochenschrift, April 9, 1903.

⁴ Treatment, 1903, vii, p. 7.

quantity of the anesthetic to be used. Alcohol is sometimes of advantage before the operation to quiet a nervous patient, while strychnin and cocain are both serviceable on account of their stimulant influence. [H.C.W.]

FORMULAS, ORIGINAL AND SELECTED.

Lewis¹ recommends the following prescription for a sedative in neurasthenia:

Potassium bromid	15 grams (4 drams)
Tincture of ferric chlorid	12 cc. (3 drams)
Glycerin	8 cc. (2 drams)
Water sufficient to make	125 cc. (4 ounces)

A ½-teaspoonful three times a day.

Under its influence there is a decrease of the neurasthenic pains and, better, more restful sleep. [H.C.W.]

From *Merck's Archives* we take the following formula for removing rust from surgical instruments:

Potassium cyanid	16 parts
Chalk, levigated	30 parts
Soap, shaved	15 parts
Water	sufficient

Dissolve the soap in sufficient water to make, with the chalk, a thick paste, in which incorporate the cyanid. With this paste rub the blades well until the rust disappears and a polished surface is attained. The operation is rendered more rapid if the blades or other objects be soaked in kerosene over night and the surface rust scraped off with anything that will not scratch the blades. The deadly nature of the scouring paste must, of course, always be borne in mind, and the proper precautions always taken to protect the hands. [H.C.W.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 16, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
California:	Los Angeles.....Apr. 25-May 2.....	2	
	San Francisco.....Apr. 26-May 3.....	6	
Colorado:	Denver.....Apr. 11-25.....	53	
District of Columbia:	Washington.....May 3-9.....	1	
Florida:	Jacksonville.....May 3-9.....	3	
Georgia:	Atlanta.....Apr. 29-May 6.....	1	
Illinois:	Belleville.....May 3-9.....	5	
	Chicago.....May 3-9.....	14	4
	Galesburg.....May 3-9.....	4	
Indiana:	Indianapolis.....May 3-9.....	7	
Iowa:	Des Moines.....May 3-9.....	4	
Kansas:	Wichita.....Apr. 26-May 9.....	1	
Louisiana:	New Orleans.....May 3-9.....	18	
Maine:	Biddeford.....May 3-9.....	1	
Maryland:	Baltimore.....May 3-9.....	4	
Massachusetts:	Holyoke.....May 3-9.....	1	
Michigan:	Detroit.....May 3-9.....	12	
	Flint.....May 3-9.....	1	
	Grand Rapids.....May 3-9.....	1	
	Port Huron.....May 4-11.....	4	
New Hampshire:	Manchester.....May 3-9.....	2	
	Nashua.....May 3-9.....	3	
New York:	Buffalo.....May 3-9.....	3	
	Rochester.....Apr. 30-May 7.....	1	1
Pennsylvania:	Johnstown.....May 3-9.....	3	
	McKeesport.....May 3-9.....	1	
	Philadelphia.....May 3-9.....	25	2
South Carolina:	Georgetown.....May 18.....	1	patient from Charleston.
Tennessee:	Memphis.....May 3-9.....	2	imp't'd.
Utah:	Salt Lake City.....May 3-9.....	3	
Wisconsin:	Milwaukee.....May 3-9.....	2	

SMALLPOX—FOREIGN.

Belgium:	Brussels.....Apr. 18-25.....	7	
	Ghent.....Mar. 23-Apr. 25.....	6	
Brazil:	Rio de Janeiro.....Apr. 5-12.....	3	
Canary Islands:	Las Palmas.....Apr. 4-18.....	44	
Colombia:	Bocas del Toro.....Apr. 21-28.....	Present.	
Great Britain:	Birmingham.....Apr. 18-25.....	7	
	Dublin.....Apr. 18-25.....	8	1
	Liverpool.....To Apr. 25.....	69	6
	London.....Apr. 18-25.....	9	
	Newcastle-on-Tyne.....Apr. 18-25.....	2	
	South Shields.....Apr. 18-25.....	2	
	Sunderland.....Apr. 18-25.....	7	
India:	Bombay.....Apr. 7-14.....		67
	Calcutta.....Mar. 23-Apr. 18.....		7
	Madras.....Mar. 23-Apr. 3.....		1
Italy:	Palermo.....Apr. 18-25.....		1
Mexico:	City of Mexico.....Apr. 12-26.....	21	11

¹ Merck's Archives, April, 1903.

Russia:	Moscow.....Apr. 4-11.....	5	4
	Odessa.....Apr. 11-18.....	4	
	Warsaw.....Apr. 4-11.....		8

YELLOW FEVER.

Brazil:	Rio de Janeiro.....Apr. 5-12.....		29
Colombia:	Panama.....Apr. 30-May 7.....	3	1
Costa Rica:	Limon.....Apr. 23-30.....	2	
Ecuador:	Guayaquil.....Apr. 11-18.....		2
Mexico:	Tampico.....May 2-9.....	2	2

CHOLERA.

India:	Calcutta.....Mar. 23-Apr. 11.....		206
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PLAGUE.

Australia:	Perth.....To Mar. 23.....	16	8
	Rockhampton.....To Mar. 23.....	2	
	Townsville.....To Mar. 23.....	3	
Brazil:	Rio de Janeiro.....Apr. 5-12.....		2
India:	Bombay.....Apr. 7-14.....		1,360
	Calcutta.....Mar. 23-Apr. 11.....		1,779
	Karachi.....Mar. 29-Apr. 5.....	195	161

Changes in the Medical Corps of the U. S. Army for the week ended May 16, 1903:

ASHBURN, JAMES K., contract surgeon, is granted leave for one month from about May 1.

HARTNETT, First Lieutenant EUGENE H., assistant surgeon, orders are so amended as to direct him, upon his relief from duty at Fort Columbus, to proceed to Key West Barracks for duty, to relieve First Lieutenant Charles N. Barney, assistant surgeon, who will proceed to Fort Schuyler for duty.

REAGLES, JAMES, contract surgeon, is relieved from duty at Fort Snelling and will proceed to Fort Keogh for duty.

WALL, FRANCIS M., contract surgeon, is relieved from duty at Fort Thomas, and will proceed to Columbus Barracks for duty, to relieve Contract Surgeon Harper Peddicord, who will proceed to Vancouver Barracks and report to the commanding general, department of the Columbia, for assignment to duty in Alaska.

WILCOX, Lieutenant-Colonel TIMOTHY E., deputy surgeon-general, chief surgeon, department of the Columbia, will proceed to such posts of that department in Alaska as may be necessary on business pertaining to the sanitary and medical inspection thereof.

LIPPINCOTT, Colonel HENRY, assistant surgeon-general, is granted leave for one month, to commence about June 1, with permission to apply for an extension of two months and fifteen days.

ROBERTS, D. M., contract surgeon, is granted leave for one month, to take effect May 15, with permission to apply for an extension of two months.

PETTYJOHN, JOS., contract surgeon, is relieved from duty in the department of the Columbia, and will proceed to his home, Augusta, Ga., for annulment of contract.

Changes in the Medical Corps of the U. S. Navy for the week ended May 16, 1903:

SMITH, R. K., passed assistant surgeon, resignation accepted to take effect May 19, 1903—May 11.

DYKES, J. R., acting assistant surgeon, U. S. N., appointed assistant surgeon, April 18, 1903—May 11.

Changes in the Public Health and Marine-Hospital Service for the week ended May 14, 1903:

GADDINGS, H. D., assistant surgeon-general, to proceed to Elkins, Va., for special temporary duty—May 11, 1903.

CARMICHAEL, D. A., surgeon, granted leave of absence for seventeen days from May 19—May 9, 1903.

KALLOCH, P. C., surgeon, to assume temporary command of the service at Portland, Maine, during absence, on leave, of Surgeon S. D. Brooks—May 14, 1903.

BROOKS, S. D., surgeon, granted leave of absence for three days from May 19—May 14, 1903.

OAKLEY, J. H., passed assistant surgeon, granted leave of absence for three days—May 8, 1903.

GRUBBS, S. B., passed assistant surgeon, granted leave of absence for one month—May 13, 1903. To rejoin station at Gulf quarantine at expiration of leave of absence—May 13, 1903.

DECKER, C. E., assistant surgeon, granted extension of leave of absence, on account of sickness, for fourteen days from April 10—May 5, 1903.

RICHARDSON, T. F., assistant surgeon, granted leave of absence for three days from May 8, 1903, under provisions of paragraph 191 of the regulations. To proceed to Gulf quarantine station for special temporary duty—May 13, 1903.

GLOVER, M. W., assistant surgeon, to proceed to Newbern, N. C., for special temporary duty—May 12, 1903.

DUKE, B. F., acting assistant surgeon, granted leave of absence for four days from May 18—May 9, 1903.

GOLDSBOROUGH, B. W., acting assistant surgeon, granted leave of absence for five days—May 11, 1903.

GREGORY, G. A., acting assistant surgeon, granted leave of absence for four days from May 18—May 11, 1903.

KENNARD, K. S., acting assistant surgeon, granted leave of absence for twenty-one days from April 25—May 8, 1903.

STEVENSON, J. W., acting assistant surgeon, granted leave of absence for seven days from May 11, 1903, under provisions of paragraph 191 of the regulations.

ROEHRIG, A. M., pharmacist, granted leave of absence for five days from May 12, 1903, under provisions of paragraph 191 of the regulations.

American Medicine ⁸⁴⁷

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The Sick as Commercial Imports.—All are familiar with the old yarn of the enterprising western town which was so new and so healthy that it had to purchase from a neighboring State the one necessary article to start the new cemetery in a businesslike way. When a new and enterprising national profession imports famous foreign surgeons it has happened that there was a scarcity of clinical material for the operator and his entertaining hospital. Borrowing patients from a more fortunate and rival hospital in the same city provokes a smile in the students of quizzical medical sociology. But the pleasure is more pronounced when it is told that not even in a whole large city was an appropriate case of the special disease to be found. Not to lose the opportunity the aid of a neighboring city was sought. Trained nurses, attending physicians, a special private car, *tout ce que vous voulez*, were fervently offered for the loan of a single patient. One does not understand why the air, water, or other conditions necessary for the production of the desired disease are present in one city and not in the other only a short hundred miles away. It was, indeed, a pity that operators were more in evidence than patients.

"Tell them the joyous Time will not be staid,
Unless they doe him by the forelock take."

Fresh Milk.—It has not been sufficiently well recognized that one of the most important problems of the milk supply of a large city is the avoidance of too old and of soured milk because of the time required between the country milking and the feeding of the distant city babies. With the advent of the summer the Chicago Health Department reports an increase of 33½% in the number of deaths, under five, of children—138 week before last, 184 the next. This is charged to milk of poor quality, due chiefly to the fact that farmers and poor city families often have no ice, and that the milk may be from thirty-six to sixty hours old when given to the child. Under such circumstances there must be a rise in the infant mortality. With the trolley lines now running into every part of the neighboring country the abuse of long kept milk should be instantly abated. There is no reason why cold and pure milk should not be delivered at the doorstep within a few hours after the milking. This is one of the great possible blessings of the development of the trolley system. Let our health boards at once set about its utilization.

The Life-cost of Accidents.—It is strange how negligent we are as a profession, and especially as a nation, of the loss of life and the cost of accidents. It is calculated that more disability is caused by them than by consumption, pneumonia, and cardiac diseases combined. Compare this fact with the space taken up in medical and other literature by the consideration of accidents. Has there been a single paper read in the last two national medical conventions on accidents? And yet is it not certain that careful attention to the prevention of accidents would result in as much saving of life and expense to the community as the same amount given to the three diseases named? Statisticians reckon that 10,000,000 accidents occur in the United States each year, killing 60,000 persons. This number, says Dr. D. J. McMahon, of New York City, is greater than that of all the casualties of the 17 years' Napoleonic wars. In all, 68,000 working people are annually disabled for life in our country, 55,000 for more than three months, and 400,000 incapacitated for less than three months.

Bad Personal Characteristics and Official Positions.—In his presidential address Dr. Keen speaks wisely of qualities other than medical which make it advisable or necessary to exclude aspirants for professorships, hospital positions, etc. Among these he puts a "quarrelsome disposition," "other personal disqualification," "drunkenness," "libertinage," etc. We wish the matter could have been treated more in detail. It is indeed worthy of an entire lecture by one so well fitted as Professor Keen is to describe the abuse with merited indignation and discrimination. He might have spent considerable time upon the fact that when the man with quarrelsome disposition, the libertine, the drinker, etc., does manage to get the coveted position, there is no critic that criticises, except in vague general terms, no censor that is really incensed, and all are friends of the great succeder. Time might also be spared to plead against the common custom of making such appointments often depend upon what Mr. Dooley calls "infloence," political intrigue and cunning, whereby the most capable and the most modest, the least "otherwise disqualified," are certain to be beaten by the "pusher" and "hustler." Then there are so many types of "personal disqualification," so many other

characteristics which may be as bad as drunkenness and libertinage. For instance, the man with a fad, who sees everything medical from his hobby-horse, or through the blue goggles of his specialty. There is the man ruined by his avarice, who does not know or pretends that he does not know that his tricks of charging and getting excessive and unjust fees make him the despised of colleague and public; from this habit may also arise all the arts of the secret advertiser, the cunning seeker after office, etc., in order really to get new patients. One man in a western city is famous for writing thousands of letters to all and sundry upon every possible suggestion, medical or nonmedical; another in an eastern city advocates every popular reform, and as carefully ignores every unpopular one, although this may be a thousand times more needed. There are also the unadulterated egotist who is always on the lookout for getting his name and 'fame before others' eyes, the religious hypocrite, the "soured man," the LL.D. hunter or parader, the antivivisectionist, the plagiarist, the stealer of other men's ideas and selfish utilizer of their ambitions, the gormandizer of a score of hospital positions, the surgeon with a fury for operating—the list could be made much longer!

The Antivivisectionist as a Self-describer.—If one will take any number of a typical antivivisectionist journal, *e. g.*, *Dawn*, Vol. 4, No. 10, just sent us, he must marvel at the expert way in which these good-bad people describe themselves in their supposed descriptions of us. For instance:

It is not sympathy that the world stands so sorely in need of; it is understanding—understanding which savors of a just interpretation of motives, etc.

Now, nine-tenths of these people do not understand, do not try to understand, our motives, but are all the time lashing themselves into a fury by their emotions or their "sympathy," in order to drown the need and duty of understanding.

Again, on the same page of *Dawn*:

Keep thee far from a false matter, etc.

And yet every issue of every antivivisectionist journal is filled with "false matters." *Dawn* especially, and surely this number is so filled, setting forth the following theses:

1. That vivisection is immeasurably cruel.
2. That its methods are those of cowardice, treachery and deceit.
3. That it is a menace to human life; in one word, murderous.
4. That it is a deliberate corrupter of children and youth.
5. That through the strong and influential institutions where it flourishes, backed by an aggregate of enormous wealth, it would escape question and molestation by blunting and depraving the public conscience.
6. That it is a threat to personal liberty, as shown in the steady multiplication of "serums," to be by-and-by successively forced upon the people by compulsory "health" laws of corrupted legislation.
7. That it is a travesty upon real science, in its empty achievements and in its preposterous promises of favors to come, two of the latest being the procuring of bodily immortality and the restoring of the dead to life.

Now, of course, vivisection is "cruel" in the sense

Dawn implies, but there is no such vivisection among scientists today, and—

1. There is plenty of such vivisection among the meat-eating antivivisectionists.
2. The methods of the antis are those of cowardice, treachery and deceit.
3. Antivivisection is a menace to human life; in one word, murderous.
4. It is a deliberate corrupter of children and youth.
5. That through the strong, etc., etc., it is blunting and depraving the public conscience.
6. That it is a threat to personal liberty, etc., etc.
7. That it is a travesty, etc., etc.

Lastly, the motto of *Dawn* is, "Unless what you accomplish is useful, your glory is your folly."

If this motto could be understood by the foolish!

But the anti does not fail to relieve the tedium of tragedy by occasional mirth-provoking paragraphs. As for instance:

Meanwhile the antimicrobe physician goes his rounds fulfilling his mistaken mission, administering his poisons to the healthy and unhealthy alike, to will and to do, not of his own wit and pleasure, but the will of the most exacting professional tyranny, tolerated by a mercenary and unthinking age, to depart from whose behests would mean to him professional ostracism. Mr. Lincoln's apothegm begins to assert its force. The schoolmaster is abroad. Brave men resent their intellectual slavery. Lorenz, Elmer Lee and a gathering host have thrown off the yoke of bondage with remarkable relief and unqualified success. Osteopathy has erected its colleges and despatched (*sic*) its beneficent missionaries.

Lorenz and Elmer Lee! Science and soapsuds!

Pneumonia 125% more fatal than tuberculosis—such is the statement of the Bulletin of the Chicago Health Department. In view of this amazing fact it is justifiable to say that although having no such an eye-catching name as the "Great White Plague," pneumonia deserves far more attention of profession and public than it gets. It is desirable to collate the statistics of the whole country and not those only of one or more cities. But there can be no doubt that pneumonia is in our country a more fatal disease than tuberculosis, and none about the advisability of giving the greatest attention to the greatest enemy. Probably the chief reason for the increase of the pneumonia mortality is the general neglect of popular teaching as to the infectiousness of the disease. Over-attention to the contagiousness of one or more affections is likely to produce under-attention to that of another even more dangerous. Somehow the people will not care for the fact in the case of pneumonia, and a general crusade for popular education is most urgent.

Cleanse and Sterilize the Filters.—It seems sufficiently difficult to get people to buy and use good filters, and those who do so are likely to think that they have no further duty to keep them clean. It has been demonstrated that filters finally permit the bacteria to fill the pores and even multiply on the inside, so that under these circumstances they do not protect against the infections of water-borne diseases. Boards of health should be authorized to conduct the examination and laboratory tests of domestic filters. Railway companies, public and office buildings, etc., especially need looking

after by some official of the local health board with power to demand and execute protection against this method of propagating disease. Where this is not done all conscientious private consumers, corporations, schools, etc., will see to it that their filters are periodically cleansed and sterilized.

Mendicants are criminals, nine-tenths of them with criminal records, is the report of those who have investigated these wretches who are allowed to parade their simulated miseries upon our streets. Those who are in fact legless or armless have lost those undesired and useless organs as tramps in stealing rides on railroad trains, etc., and even the few really blind of the many that pretend to be so, were made so purposely, or are glad they are so. New York City is ridding herself of these impostors by the simple expedient of showing up their frauds. In the slang of these worthies, "New York is jimmied." By taking the good arms out of splints or the sound legs out of casts, exposing the sham blind, and the malingering paralytic, punishing the frauds, etc., the streets are cleared of them. Other cities are yet to learn the lesson. "Chi Slim" made a large income, some \$50.00 a week for years, in an hour or two a day, in New York, playing the paralytic. "British" was almost as successful. "P. P." is the name given by the fraternity to the plaster-of-paris bandage men. The "sap" men are the crutch and cripple frauds. The "cane men" are those who go no farther than canes. The "human crab," the "human dog," the "human alligator," are other types. The "crust-thrower" is the fellow who slyly drops a moldy crust of bread before the passer-by, and then seizes it as if with hunger. The "duckets" or "dockets" are those who parade signs, verses, etc., on placards. When "Florida Shine," "Boston Charlie," "Toronto Peg," "The Crane," "Dutch Harris," "St. Louis Joe," or "Chi Slim" gets arrested, his companions of "the trust" contribute and hire a lawyer for him, or secure means for his escape. •

The sober second thought as to child labor was emphasized by several at the recent Atlanta Conference. The sentimentalist is of excellent service, provided he or she are not allowed to make the laws before the physician, the statistician, and political economist have had time to give reason and justice to the measures of relief proposed. The Mayor of Macon, Ga., who is also president of a manufacturing company, says that manufacturers are not in favor of child labor, and that work in the mills has been "a godsend" to both children and parents, and that the mills have restricted instead of increasing the total amount of child labor. He contends that the necessity is deep-rooted in our social system, and before it can be stopped there must be real preventives in the form of checking unrestricted marriages, poverty from inheritance and misfortune, from death of parents, etc. "We are in Georgia suffering more from idleness than we are from ignorance." An excellent statistician, Mr. Hoffman, of the Prudential Life Insurance Company, says that unwarranted conclusions are being drawn and hasty proposals made

in the matter of legislation because of the lack of a broad basis of evidence and careful statistics. It is quite probable that our public schools are as great producers of ill-health as the mills. It was found that in Cleveland 25% of the girls and 18% of the boys had to withdraw from the high school mostly because of bad health, and that in other places as high as from 36% to 48% of the children were affected with bad eyes, headache, sleeplessness, etc. It is plain that legislation must be founded upon a better basis of investigation and a more cautious gathering of facts than has so far been shown. The evil is evident, but, as usual, the method of cure is by no means so certain.

A Noisy or Noiseless Fourth of July.—Good parents and really patriotic citizens have long dreaded the annual epidemic of deaths, accidents, tetanus, increased illness, etc., which has invariably followed a noisy Fourth-of-July. The more noise the more death and injury; but the less patriotism, is a pretty safe rule. Regret must therefore be expressed for the public declaration of the mayor of an eastern city that he believes in a fire-cracker Fourth. Perhaps that is a better plan than to publicly condemn the toy cannon, etc., and privately condone all offenses against the unexecuted law. The toy-pistol boy is often the criminal in the making. The "Chicago idea" is said to be to celebrate noiselessly by means of good literature, speeches, etc., but Minneapolis tries to abolish the noise-making, and replace it by innocent games and athletic sports. These methods are surely more hygienic, and will cheat the doctors out of their yearly crop of emergency cases and accidents, but from the anti we will scarcely get credit for such worthy or unworthy motives.

A Great Scientist on Mortality Statistics and Smallpox.—Spencer and Wallace and many other great men have convinced themselves, and have attempted to bring the world to their view, that vaccination is far worse than useless, and that other causes have been those ridding the world of the horrible and death-dealing smallpox. But even they and all other anti-vaccinationists are convinced that smallpox is loathsome instead of lovely, and that it brings death and suffering. It remained for another great scientist, Dr. Thomas Mulligan, according to the newspaper reports, an eclectic practitioner, to take the sole remaining step in the logic of the anti. At the convention of the Connecticut Eclectic Medical Association on May 12, Dr. Mulligan is said to have contended that "smallpox is a good thing to have in a community. It crowds out other diseases, and lowers the deathrate. It is therefore something to wish for rather than to fear." When smallpox does prevail, he said, there are fewer deaths from it than from any other disease, and in years when it rages violently there are fewer deaths from all causes than in years when there is no smallpox. Dr. Mulligan condemned the use of vaccine virus and antitoxin because, he said, "their use prepared the victim for either another disease or an early grave." If Thomas has not been vaccinated he should surely be allowed to put his theory in practice. We suspect he can show good scars.

Governmental Responsibility for Military Sins Against the Public Health.—The interdependence of military and social life is again illustrated by an incident that has occurred in England. The much criticised War Office is again brought up standing by the fact that there has been a narrow escape from an outbreak of typhoid fever in London and thirty or more industrial centers from the sale and distribution of army blankets from the fever hospitals in South Africa. The danger has only been averted by the energy and vigilance of the sanitary authorities. It is said that experts have discovered the army blankets warehoused were blood stained and infected with typhoid bacilli. These blankets were sold in South Africa by the authority of the War Office after the close of hostilities, and there was carelessness in neglecting to classify the superfluous army stores, disinfect all the goods and destroy those used in the fever hospitals.

The Smoke Nuisance.—It was said at the time of the anthracite strike that its worst result would be to perpetuate the black-smoke nuisance, as the public would get so used to this that all attempts to stop it would be futile. The energetic Dr. Lederle, of New York, does not agree to this let-alone policy and is bringing to court all offenders of the law against black smoke. Other cities, however, are unconcerned about this destroyer of health, pure air, and sunshine. It is hoped that Dr. Lederle's example may incite other health officers to a most desirable emulation.

Pneumonia Epidemic.—The *Chicago Tribune* states that Surgeon Banks, of the Marine-Hospital Service, has reported to the central office in Washington that Chicago is suffering from an epidemic of pneumonia. He quotes the figures of the city health department to show that the deaths from that disease in the last two months are 22% of the entire mortality. From all causes in the last two months there have been 5,341 deaths in the city, and 1,186 of these have been caused by pneumonia. The disease has reached almost epidemic proportions. In this report it is related that as many as four deaths have occurred in one family, and that six friends who attended the funeral of a victim of the disease were fatally attacked.

The Cigar Stump and the Street Boy.—A source of infection not hitherto emphasized, but which deserves attention in connection with the street boys of every city, has been the subject recently of investigations in the University of Padua. These investigations, says a note in the *Boletín Mensual de la Lliga contra la Tuberculosis en Cuba*, have proved, "as might have been expected, that the stumps of cigars smoked by consumptives may transmit tuberculosis. The experiments described by L. Peresico establish the fact that the ends of cigars are virulent two weeks after having been smoked by a consumptive, if kept dry: but they lose their power of infection in ten days if kept in a damp place." This must be because the germs are transferred to the water, not because they are destroyed.—[*Charities.*]

Rush Medical College is rapidly approaching the standard which it has set as to requirements for admission, namely, such requirements as will ensure the possession of a bachelor's degree by every graduate of the college. Another step is taken in advance this year, and the requirements beginning with the summer quarter, 1903, will be increased so as to demand 12 majors (14 years of ordinary college work) in addition to a four years' high school course, one-half of which must be in specified branches specially preparing one for the study of medicine, and which must include one year of college chemistry in addition to a year of high school chemistry, and a thorough course in elementary biology; in lieu of these 12 majors, however, nine will be accepted if the work is done at the University of Chicago in the branches specially recommended as a premedical course. In June, 1904, another advance will be made, and in June, 1905, the completion of the Junior College course at the University of Chicago, or an equivalent thereof, will be demanded, and the preliminary work must have covered a year of college chemistry (inorganic), one major of organic chemistry, one major of college physics, a thorough course in biology, and a reading knowledge of French and German.

AMERICAN NEWS AND NOTES.

GENERAL.

Dead from Cholera.—News from Manila is to the effect that Mabini, the former Minister of Foreign Affairs of the Filipino Government and a member of Aguinaldo's Cabinet, is dead from cholera.

Manila Clean City.—Governor Taft's executive secretary lately arrived in San Francisco, and he is quoted with the following remark relative to the sanitary condition of Manila: "Manila is now the cleanest city of its size in the world, with less crime than any city of which I know."

Plague Stamped Out at Peru.—Mr. Calderon, the Peruvian Minister, has received a cablegram from his government stating that no cases of bubonic plague have appeared in Peru since the seventh instant, when four cases were found in Callao. Callao has been isolated since the first appearance of the plague, and the government has opened the port of Ancon, 21 miles to the north, for the exportation and importation of merchandise, so that trade may proceed as usual with other countries.

Fevers on the Isthmus.—General Hains, a member of the Isthmian Canal Commission, who has just returned from the isthmus, says that fever is prevalent there, and that it is quite dangerous to white men. He says it is either yellow fever or such a malignant type of malarial fever as to be as bad as yellow fever. The condition can be improved, but it would require control by the government of sanitary measures. He thinks it would take about a year to place the canal region in proper sanitary condition.

To Study Tropical Fevers.—Professor George E. Beyer, of the department of biology and natural history at Tulane University, has gone to Vera Cruz, Mexico, where, with other members of the Fever Commission appointed by the United States Marine-Hospital Service, Professor Beyer will this summer make investigations similar to those conducted last year, when Professor Beyer and Dr. Pothier, under direction of Dr. Parker, of the Marine-Hospital Service, investigated the connection between the mosquito *Stegomyia fasciata* and yellow fever.

Adulterated Food Imports.—Careful investigations made by United States Government chemists has shown that Germany is sending to the United States every year immense quantities of foodstuffs into which harmful preservatives have been introduced. Other countries are probably sending foodstuffs to which the same objection could be made, but so far it appears that Germany is the chief offender. A measure which was put through Congress at the closing hours of the session authorizes the Secretary of the Treasury to refuse entry of foodstuffs which the Secretary of Agriculture finds to be adulterated so as to be injurious to health. This amends the previous law which authorized the exclusion of adulterated foods, but which required our officers to prove that they were harmful. The new law relieves them of this

Length of Life Increasing.—The *Indiana Medical Journal* is authority for the following: Medical men are discussing a lecture by Professor Pflüger, of the University of Bonn, on longevity, in which he asserts that the average length of human life is steadily increasing. He maintains that one-third of all the deaths registered in Munich are due to heart disease, brought on by the immoderate use of beer, and that tobacco also claims a large percentage of the victims. Among 40 centenarians who have come under his notice there was only one smoker, while nearly all professed to a moderate use of alcohol. What Professor Pflüger most seriously warns people against is the thought and fear of death. The mind must be occupied, he says, in order to secure longevity. Hard-working men who retire rarely live much longer.

The Flight of Mosquitos.—Captain S. P. James, who has lately written a book on malaria and mosquitos, had for many years made a study of anopheles in India. He states that the usual distance of flight of anopheles rarely exceeds half a mile, and at this distance from the focus of infection a person is practically safe from malaria. He found that altitude had no particular influence unless beyond 4,000 feet. He said: "Complete protection from malaria and black water fever may be ensured by any individual who is willing to take the trouble to pay scrupulous attention to the use of a good mosquito curtain at night, and to protect himself adequately from being bitten by mosquitos during the evening hours. If these simple precautions are taken it is quite unnecessary to use quinin as a prophylactic. No other precautions than these have been used by any of us during our tours through some of the most malarious parts of India, and none of us have experienced a day's fever during this time. By the use of the same precautions also, and without taking any quinin, Dr. Stephens previously passed two years in the most malarious parts of Africa without a single attack of malaria."

EASTERN STATES.

Diphtheria at Newport.—It is said that diphtheria has appeared among the naval apprentices on the vessel "Constellation" and on the monitor "Amphitrite," where many boys are on board. The disease appeared among the apprentices some two weeks ago and camps were established upon the line. It gained ground and 740 boys were transferred from the barracks to the above named vessels where it was thought they would be safe. The precaution was not successful.

Coroner's Office Abolished.—The *Sanitary Bulletin* says the "coroner's inquest" is a thing of the past in New Hampshire and the office of "medical referee" has been created to take the place of the coroner's office. The law provides for the appointment of 16 physicians for the State, to investigate suspected criminal causes of death. It is not infrequent that such investigations require skilled professional knowledge, and it would seem remarkable that a law which places such investigations in the hands of a layman should have remained so long on the public statutes. The medical referee plan which has been in operation for some years in other States is far superior to the old coroner system.

NEW YORK.

Treatment of Rabies.—It appears as an outgrowth of the late injustice which patients have been subjected to in the treatment of rabies by certain persons connected with the New York Health Department that President Ernest Lederle has caused a room to be set aside in the main building in the Health Department which is to be fitted up and utilized exclusively for the treatment of all such patients applying to the department for treatment.

Use of Soft Coal.—An exchange says that Dr. Lederle, the Commissioner of Health, is determined that the users of soft coal in defiance of the sanitary code throughout the city shall be made to desist, or shall be punished. The commissioner has again ordered out the health department patrol tug to skirt the shores of the North and East rivers to search for ordinance violators. Wherever a factory chimney belched out the dense black puffs which indicate bituminous furnace fuel or at least a 30% bituminous fuel alloy, the tug put for shore and arrested the engine-room chief of the offending manufactory.

To Restrict Consumptive Camps.—Governor Odell has signed the bill prohibiting the establishment of any hospital or camp for consumptives in any town in the State without the formal consent of the supervisor of the county and the town board of such town. He has filed his reasons for signing such bill, which appear, however, not altogether satisfactory to the medical profession in Greater New York, who consider that great hardship is inflicted upon the tuberculous poor of the city on account of this veto. They assert that it will be practically impossible to gain the consent required from the numerous officials before such hospital or camp can be erected.

Birthrate in New York.—Statistics compiled by the Board of Health show that the population of New York is increasing at a remarkably rapid rate. The births reported in Manhattan borough alone during the first four months of the present year were 2,000 in excess of those reported in the same period last year. The cosmopolitan population and the large proportion of foreigners in the city may account for the high birthrate. The health department now holds any physician accountable who neglects to report a birth. There has been a falling off in the percentage of deaths. The city has also gained enormously by foreign immigration. The Board of Health has estimated that the population of the city has grown from 3,437,202 at the time of the last federal census in 1900 to 3,732,930 at present.

PHILADELPHIA, PENNSYLVANIA, ETC.

Recognition of Homeopaths.—The committee on charities and corrections from the council has approved an ordinance authorizing the Director of Public Health and Charities to establish five wards in the Philadelphia Hospital under the care of homeopathic physicians. There will be a surgical ward for men, another for women, a medical ward for men, another for women, and a medical and surgical ward for children.

State Board of Health of Pennsylvania.—The fifty-fourth meeting of the State Board of Health was held May 23, in Philadelphia. Among the matters considered was a resolution calling for a conference with reference to bubonic plague in California. The present smallpox situation was discussed. Benjamin Lee, the secretary, reported that during March and April there were 1,416 cases of smallpox, and 61 deaths therefrom in this State. Included in this number are: Philadelphia, 219 cases and 20 deaths; Pittsburg, 153 cases, 15 deaths; West Fairfield township, Crawford county, 137 cases; St. Mary's, Elk county, 100 cases; Tyler, Clearfield county, 55 cases; South Fork, Cambria county, 50 cases, and fourteen other towns or townships throughout the State in which there were from 20 to 50 cases in each.

Cerebrospinal Meningitis at League Island Navy Yard.—In spite of the energetic efforts of the officials at League Island Navy Yard to stamp out the few cases of cerebrospinal meningitis aboard the receiving ship "Minneapolis" it turns out that additional cases have appeared, and this time on the monitor "Puritan." The vessel has been used as an auxiliary receiving ship during the crowded condition at the navy yard and nearly 400 were quartered aboard her. Two landsmen were found afflicted with the disease and sent to the naval hospital.

Dean of Hahnemann Medical College Resigns.—Dr. Dudley, for seven years dean of Hahnemann Medical College, has resigned that office. He says he has not been sustained in his administration, particularly with reference to reforms in the school and changes in the curriculum, and complains that as a result the school has deteriorated. The average for many years until within the past eight years has been 65 to 70 matriculates. Last year only 52 entered and this year there were but 43. He retains the professorship of hygiene and the institutes of medicine.

Smallpox.—The number of cases of smallpox reported in Philadelphia indicate that the disease is on the increase. This is unusual for the season of the year. During the week ended May 16, 30 new cases were reported. The previous week there were 26 cases, and the week before 16. This situation of affairs is not confined wholly to Philadelphia. From Connecticut comes the complaint that smallpox exists in a number of towns in the State, notwithstanding vigorous efforts are being made to stamp it out. Chicago likewise complains of more cases of smallpox than the city has shown for some time. The \$50,000 recently appropriated by the Legislature of Pennsylvania to be used by the State Board of Health for combating this disease should be promptly utilized in stamping out the disease by vaccination and otherwise.

WESTERN STATES.

To Electrocute "Bugs."—It is stated that an employe of the Minneapolis Water Works Department has devised a plan to kill typhoid and other germs which may be present in the water by the application of electricity. The system, which provides for the aeration of the water and the electrocution of the germs by a strong current from a dynamo, has been tested. It is stated that a bacteriologist reported the plan successful from the fact that 70% of the germs were destroyed. It appears that the remaining 30% might occasionally cause disease.

Application of Electricity to Remove Foreign Body.—It is reported that an apprentice at the navy yard at Vallejo, Cal., who was severely injured recently by a piece of steel flying from a tool and imbedding itself in his face had the foreign substance removed by an electrician, who had arranged an electromagnet of his own design for the purpose. The magnet, which was capable of lifting 500 pounds, was held directly over the orifice and the current turned on. In an instant the piece of metal flew from the wound and attached itself to the magnet.

Great Quarantine of Cattle.—From Denver, Colo., comes the news that what will be the most extensive quarantine of cattle in the West for many years will be in effect within a few days as the result of the general prevalence of the mange. Governor Peabody will issue his proclamation today. Other States and Territories to the number of six or eight will come under the same rule before the end of the week. Cattle from the Mexican border to Canada will come under these regulations and practically all of the territory from the Rockies to the Missouri river will be affected.

New Law With Reference to Drugs and Druggists.—The law recently passed by the Legislature of Illinois and signed by the Governor, and which is to become operative July 1, provides in part as follows: It shall not be lawful for any druggist or any person to retail or sell or give away any cocaine hydrochlorate, or any salts of, or any compound of cocaine, or any preparation containing cocaine, or any salts of or any compound thereof, except on the written prescription of a physician or dentist, licensed under the laws of the State, which prescription shall only be filled once, and must have written plainly on it the name and address of the patient. Provided, that the provisions of this section shall not apply to sales at wholesale by any manufacturer or wholesale dealer, who shall sell to the retail druggists, or other person so sold, as original packages only, when such manufacturer or wholesale dealer shall have affixed to each box, bottle, or package containing such cocaine hydrochlorate, or salts or compounds of cocaine, or preparations containing cocaine, a label specifically setting forth the proportion of cocaine contained therein. Any druggist or other person who shall retail or sell any cocaine hydrochlorate, or salts or compounds of cocaine, or any preparation containing cocaine, or salts or compounds thereof, in violation of this act, and any druggist or other person who shall prescribe any cocaine hydrochlorate, or salts or compounds thereof, to any person addicted to the habitual use of cocaine, or any preparation or compound thereof, in any form, shall, for the first offense, be fined not less than \$50, nor more than \$200, and for each subsequent offense not less than \$200, nor more than \$1,000, and if the person so offending shall have a license as a physician, dentist, or pharmacist, such license shall be revoked.

FOREIGN NEWS AND NOTES

GENERAL.

Blaming the Piano.—A Berlin physician of renown, believing that excessive practice at the piano is responsible in a measure for the alarming spread of nervous diseases, has instituted a campaign against beginning the musical education of children at the early age now customary both in this country and in Europe. In his opinion no girl should be permitted to enter upon the study of music before the age of 16, and even then the hours of drumming upon the keyboard should be restricted to two a day. Of 1,000 girls who undertook piano practice before the age of 12, 600 later became afflicted with some form of nervous disease, but of 1,000 whose musical education was neglected, only 100 ever suffered in this manner.

CONTINENTAL EUROPE.

Comparison of Sexes in Italy.—Official figures of a recent Italian census show that in Italy there are 16,155,130 males against 16,320,123 females. Until within recent years Italy was the sole country in Europe in which the males exceeded the females and this reversal of sex predomination in that country is attributed to excessive migration on the part of the males. The census of those having ability to read and write was 31.2% in 1872. In 1877 a law requiring compulsory education was put into effect, yet the recent census shows only 48.5% of the Italians are able to read and write. Complaint is being made by the newspapers of that country that the enactment requiring compulsory education is not being enforced.

OBITUARIES.

Thomas G. Morton, one of the foremost physicians of Philadelphia, died May 20, at Cape May, after an illness of two days, aged 68. He was graduated from the medical department of the University of Pennsylvania in 1856, and shortly afterward became an interne in the Pennsylvania Hospital. Later he was appointed attending surgeon to that institution. During the Civil war he won a national reputation as a hospital manager. He organized various military hospitals, and some of the systems perfected by him at that time are still in vogue in well-regulated hospitals throughout the world. He was one of the founders of the Polyclinic Hospital, and he also founded the Orthopedic Hospital, and up to the time of his death he held a position on the consulting staff of this hospital. He was surgeon at the Satterlee Hospital and consulting surgeon at the United States Army Hospital at Chestnut Hill, beside holding positions in many other hospitals, including the Philadelphia Hospital for the Insane; St. Joseph's Hospital, the Wills Eye Hospital, the Jewish Hospital, Howard Hospital, the Woman's Hospital, and the Pennsylvania Institution for the Deaf and Dumb. His many services to the State on various boards and commissions included the erection of a State Hospital for the Insane for the Southern district of Pennsylvania, as chairman of the committee on plans and buildings of the commission appointed to carry out this work in 1876. In 1880 he was chosen president of the Pennsylvania Society for the Restriction of Vivisection, and the same year vice-president of the Society to Protect Children from Cruelty. In 1883 he was appointed a commissioner of the State Public Charities, and in 1886 he was made chairman of the State Committee on Lunacy. In 1886 he introduced at the Pennsylvania Hospital a bed elevator, and in 1874 a ward dressing-carriage, for which he received a medal at the Centennial Exhibition. He belonged to many societies and organizations, among them being the College of Physicians of Philadelphia, the Philadelphia Academy of Natural Sciences, the American Medical Association, American Surgical Association, Philadelphia County Medical Society, the Philadelphia Board of Education, and the Philadelphia Academy of Surgery, of which he was president. He was a frequent contributor to the *American Journal of the Medical Sciences*, beside publishing many standard works, including "The Transfusion of Blood and Its Practical Application," and jointly with Dr. William Hunt, "The Surgery of the Pennsylvania Hospital." Among his most recent works is a history of that institution.

John P. Bryson, in St. Louis, Mo., May 5, aged 57. He was graduated from the Humboldt Medical College, St. Louis, in 1868. He was professor of genitourinary surgery in the medical department of Washington University.

John B. Burdett, at Jersey City, N. J., May 21, aged 70. He was graduated from the New York College of Physicians and Surgeons in 1856, and had practised in Jersey City since 1855.

Israel Pattison, at Oelwein, Iowa, April 26, aged 62. He was graduated from the University of Buffalo in 1867, and was for many years a surgeon of the Great Western Railway.

Andrew J. Sauer, of Baltimore, Md., May 20, aged 30. He was graduated from the Baltimore Medical College in 1894.

J. W. Kirkpatrick, of Wyoming, Iowa, May 13. He was graduated from the Rush Medical College, Chicago, in 1888.

H. D. Shrader, of Washington, D. C., May 21, aged 52.

SOCIETY REPORTS

SIXTH TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Held in Washington, May 12, 13 and 14, 1903.

ASSOCIATION OF AMERICAN PHYSICIANS.

[Specially reported for *American Medicine*.]

Address of the President.—The president, JAMES STEWART (Montreal), acknowledged the great honor conferred upon him in making him president of the Association of American Physicians, and said that the Association was one whose work had made it known and respected wherever modern medicine was taught, and that he appreciated most highly the compliment paid, not only himself, but his colleagues across the line; he felt that it was a matter for which all should be deeply grateful that the Canadians had been received into the Association from the beginning in such a generous manner. The existence of the Association, which was one of clinicians, pathologists, bacteriologists, and chemists, was an index of the advancing character and increasing precision of the work. He said that it was apparent, in contrasting the work performed by the Association since its inception in 1886 with that of the last few years, that there had been a considerable change in the character of the papers read; that the proportion of more or less purely scientific papers had steadily increased in numbers and value; that the papers of the more or less purely clinical type had been from the first of a high order and that they continued to be of the same high character. He considered the program of the meeting an index of the very valuable and laborious work that would be recounted during the session. Stewart said, quoting the words of a recent writer, "The new century begins its history from a vastly higher standpoint all round than its predecessor did. Our chief hope for the future lies in the desire, which has become so much more acute within the last few years, to get away from the bondage of theories and hypotheses and to be able to question and cross-question facts till their meaning becomes plain. The true students of medicine are now everywhere struggling to get at the heart of the disturbing influence which breaks up the harmony of health and life." The part that many members of the Association were taking in the solving of these problems that had so long resisted investigation was very gratifying, and the very recent splendid contribution to practical medicine made by one of the members would stand forever to the glory of American medicine. He spoke highly of the way in which hospitals and research laboratories had been endowed in the United States and Canada, and considered it a harbinger of a time that would come when the recurring waves of charlatanism would cease. He said that the names of Johns Hopkins, Rockefeller, Morgan, Vanderbilt, Strathcona, and others would live to be blessed for ages. In closing, STEWART paid a tribute to the members who had passed away during the last year, all of whom he said were men of high promise who had left behind them much evidence of excellent and abiding work. These men were Wyatt Johnson, who died of septic poisoning acquired in the postmortem room of the Montreal General Hospital; Frederick A. Packard, who died of typhoid fever; and Major Walter Reed, whose death was caused by appendicitis and whose fame rested mainly upon the researches conducted on the yellow fever commission of the United States Army.

Bathycardia (Low Heart).—E. G. JANEWAY (New York) proposed this term to signify a low position of the heart due to anatomic conditions; not to disease. The patients all have long flat chests, and there was generally difficulty in placing the apex of the heart, the tendency being to place it too high rather than too low. It was liable to be mistaken for other conditions of the heart and often led to the supposition of an abnormal state of the lung.

Discussion.—OSLER (Baltimore) said a very interesting condition might be the descent of the heart in conditions of great hypertrophy, especially hypertrophy of the right heart, which caused bulging in the right parasternal area. The condition was sometimes mistaken for aneurysm. WILLIAMS (Boston) asked if there was any record of the position of the tube and the distance from the patient when the radiograph was taken and said that it made considerable difference whether the tube were near or far away. It was of importance that there should be attached to the radiograph a memorandum indicating the position of the tube as only in this way could the radiographs of different cases be compared. McPIEDRAN (Toronto) asked if Professor Osler referred to hypertrophy with dilation. He had had a few days ago a death due to mitrostenosis, without dilation but with extreme hypertrophy. There existed on the thorax no sign of any derangement. In closing, JANEWAY said that the radiographs had been taken by Dr. Caldwell and he had no memorandum of the exact distance at which they were taken; they were rather to show the position of the heart than anything else.

Posttyphoid Sepsis.—FRANCIS DELAFIELD (New York) said that the different fevers following typhoid, which might be due to the typhoid bacillus or to other infections, must be

distinguished from the true relapses of typhoid fever, and a number of charts were exhibited explaining the diagnostic points. He considered the question of the moderate rise of temperature occurring a short time after the end of typhoid fever and lasting but a few hours, and the posttyphoid fevers lasting for weeks. In order to bring these fevers to an end the author considered it necessary to get the patients out of bed and give them solid food; some improved on being given solid food alone, but it was usually necessary to get them out of bed as well.

Discussion.—**KOPLIK** (New York) thought it common to see the temperature run as illustrated in the charts. Where the child had been sick with typhoid fever for several weeks and the temperature had fallen to normal, he immediately gave the patient food in spite of the low temperature which might exist. He did not believe it proper to starve these cases, for it had been his experience that the temperature would disappear when the patient was gotten out of bed and given proper food. The condition was due to lack of nutrition or to some reinfection aside from that of typhoid fever. **PEABODY** (Boston) agreed with **Delafield** and **Koplik**, and thought the best solid food to begin with in these cases was hard boiled egg, boiled until a touch would reduce it to a fine powder. This he considered easier to digest than the soft boiled egg, because the work of coagulation had already been done. **ROBINSON** (New York) thought there were a certain number of cases in which this plan would not be a good one, and that if food were given the temperature would not drop. He thought the use of mild purgatives would do much to lessen the number of these unexplained cases of rise in temperature.

[To be continued.]

AMERICAN GYNECOLOGICAL SOCIETY.

[Specially reported for *American Medicine*.]

SECOND SESSION (CONTINUED).

Discussion on papers of **THADDEUS A. REAMY** and **REUBEN PETERSON** (of May 13). **P. A. HARRIS** reported a case of cancer of the cervix operated on seven years ago and the patient is still well, but most patients die within two years. He had operated on one case of cancer of the vulva in a woman of 70, but recurrence caused her death 2½ years later. **C. P. NOBLE** said cancer of the cervix is worse than cancer of the uterine body. He recalled two cases operated on 15 and 13 years ago that are now well. The vast majority have recurrence. Hysterectomy cures about 10%. The curet and zinc chlorid are efficient agents for removing the diseased tissue. He has operated on four cases of cancer of the vulva. Three of the patients are dead, one appears well 1½ years after the operation. **J. W. BOVÉE** had seen no case of cancer of the vulva sufficiently early for operation. The early cases of cancer of the uterus demand more extensive operation than late ones, which are merely palliative. The cautery is a valuable instrument in these cases. **I. S. STONE** reported a case of cancer of the cervix which was cured by operation. The cautery cures a few of these cases and should be used. In sloughing cases zinc chlorid should be used before operation. The electric angiostribe is a good thing but does not scar all the raw surfaces. **MATTHEW D. MANN** said some of the most hopeless cases of cervical cancer turn out the best, and vice versa. He did a high cervical amputation eight years ago for cancer of the cervix and the patient is still well. He has had three cases of cancer of the vulva. One case after curetment of the diseased part improved for a time under Röntgen ray treatment, but recurrence caused her death. The Röntgen rays should be tried in these cases, some are benefited. **REAMY** closed the discussion of his paper by calling attention to the fact that it dealt with cancer of the cervix only, which is claimed by some to be incurable. A few permanent cures established the fact that the disease is originally local. **PETERSON** closed the discussion of his paper by stating that not always in cancer of the vulva are the lymphatics involved. He believes that here, as elsewhere in the body, we have two forms of cancer: (1) Diseased area is small, soft, and after operation recurs early; (2) diseased area usually large, and there is often no recurrence after operation.

Should the Uterus be Removed When Operating Through the Abdomen or Vagina in Cases of Double Pyosalpinx.—Several papers were contributed on this subject. **P. A. HARRIS** said: When suppuration has become well established in both tubes, their excision is the only operation which can be relied upon to effect a cure. By excision is meant the removal of the lumen of the tube to the uterine mucosa. Less radical operations, as hemisection and disinfection of the ampullas and larger portions of the tube, probing and washing of the tube and amputation of distal portions of pus tubes are incomplete operations, and are proportionately unsuccessful in that they leave behind a diseased sinus, which not only continues to exist, but is productive of discomforts and other ill consequences to a greater or less degree. In bilateral excision of double pyosalpinx sufficient ovarian stroma may be left to influence and continue menstruation in at least 95% of any large class of cases operated upon. The ovaries frequently participate in suppuration which they derive from pus tubes. But in them suppuration is more easily terminated, and excision is not advised, excepting for extensive abscess of the ovary

at the time tubes are excised, or a belief or knowledge that the suppuration in the ovary is tuberculous in character. Simple excision of double pyosalpinx affords the maximum degree of relief, with a minimum of mutilation, and interference with the functions of the pelvic organs. The complaints arising from the existence of endometritis often cease after simple excision of double pyosalpinx. If the symptoms of endometritis continue and greatly harass the patient, the uterus may be removed by vaginal section. The price of removal of the uterus in every case of double pyosalpinx may be partly estimated by the following results: 1. Loss of menstruation in every instance. 2. Partial or complete extinction of the sexual quality in a large proportion of the cases, together with incomplete physical capacity for sexual participation. 3. Injury to the nervous system of the patient, arising from her knowledge and appreciation that she has been prematurely and possibly unnecessarily deprived of these and other qualities which render her physically and to a certain extent morally inferior to other women. **ANDREW F. CURRIER** had prepared a paper which in effect said: If this is proposed as a matter of routine the writer would reply emphatically, No. If it is proposed as an expedient, when the uterus itself is diseased, extensively diseased, the writer would say, Yes. It may also be removed if it has been greatly injured in the extrication of the appendages, or if it should seem to be required as a means of controlling troublesome hemorrhage. To remove the uterus in a young woman may possibly produce unfavorable mental effect as a consequence, near or remote. To remove the uterus from one near, at or past the menopause may add an element of risk to the operation. To remove the uterus may weaken the pelvic roof, and may introduce an element of danger from enterocele. To remove the uterus unnecessarily is bad morally, for it tends to establish the impression of the unimportance of the organ and that it may be unhesitatingly extirpated by any one who has the requisite skill. To remove the uterus on the ground that it may possibly be the seat of malignant disease in the future is assuming more than clinical history teaches in the great majority of cases, and is, moreover, a reproach to surgery, making it destructive instead of conservative. **I. S. STONE** said no organ should be removed unless absolutely necessary. In a large majority of cases the pus found in diseased adnexa is sterile, therefore the chief element of danger from sepsis is eliminated, and the uterus is not the seat of dangerous microbial infection. An exception to the above rule may be found in puerperal infections. When purulent adnexa are removed the uterine cornua should be excised and the uterus permanently sealed, and thus made a barrier against further, and also to permit effective treatment of that organ should it later become necessary. Hysterectomy requires additional time, causes further traumatism, and necessitates changes in the anatomic relations of vagina, bladder, etc. If necessary to drain the pelvis by way of the vagina, the usual route through the culdesac posterior to the uterus answers every purpose. Many women object to panhysterectomy, and the question of its effect upon the mental status is still *sub judice*. **MATTHEW D. MANN** said that almost the sole cause of pus tubes is gonorrhoea, though there may be a mixed infection. The gonococcus infects the surface of mucous membrane and spreads by continuity of structure as no other germ does; hence preceding infection of the tubes there is uterine infection. This may cause serious trouble, and since the organ is now useless, especially if the ovaries are removed, it should be removed. If left the uterus may become the seat of cancerous disease, but this is, of course, rare. In acute infection removing the uterus secures the best means of drainage. The result by the vaginal route, when the uterus is always removed, warrants its removal in operating by the abdominal route. The woman's sexual life is unaffected by the removal of the uterus, hence nothing need be feared from that source. The additional time taken for its removal is more than counterbalanced by the securing of good drainage. **HENRY C. COE** (read by abstract) said the uterus is by no means always diseased in these cases, and when so it can be successfully treated by curetment. Should one or both ovaries be healthy and left undisturbed the retained uterus will permit menstruation and prevent the disturbances attendant upon an early climacteric. The chances of pregnancy are too remote for consideration. In most cases ample drainage can be secured without removing the uterus. Hysterectomy does add to the immediate and subsequent risks of the operation, recent favorable statistics notwithstanding. Atrophy of the vagina in young married women is an objection to hysterectomy, and may lead to marital unhappiness. Much depends on the condition of the uterus at the time of operation. If the organ is thoroughly softened and diseased, the seat of fibroid changes, or extensive laceration, no question remains as to the propriety of its removal. The wishes of the patient must be considered. Many women prefer to take the risk of a second laparotomy or vaginal hysterectomy rather than have everything removed at the first operation. **C. P. NOBLE** (Philadelphia) gave a summary of his personal experience with operations in cases of double pyosalpinx. Removal of the ovaries produces no effect on the sexual desire. He has never seen a vaginal hernia result from removal of the uterus. Some advantage results to young nulliparas from leaving the uterus and ovaries, in other cases they should be removed. He has operated on 58 cases of pyosalpinx with abscess of one or both ovaries, and has had 1 death. He

almost uniformly removes the uterus. In 6 cases similar to the above, but with intraperitoneal suppuration, he has had 4 deaths. In these no hysterectomy was done.

Discussion.—GORDON favored the removal of the uterus in these cases. It is an infected organ and liable to be the seat of leukorrheal discharge and a focus of congestion and pain. BACHE EMMET asserted that the uterus does not remain long infected even when the disease passes on to the tubes, hence it is unnecessary to remove it unless it is the seat of disease. It affords support to the pelvic viscera and should not be wantonly sacrificed. J. W. BOVÉE said much depends on the condition of the uterus at the time of operation. He does not remove the uterus unless there is some special indication for it. THADDEUS A. REAMY advised against removal of the uterus unless there was some pathologic condition specially indicating it. DUDLEY favored removal of the uterus if the pyosalpinx is septic—often the pus is sterile. The social condition of the patient, her wishes and a number of other things must be taken into consideration before hysterectomy is advised. The uterus assists materially in the diaphragmatic action of the pelvic floor, and in maintaining the pelvic organs in correct position, hence it should not be unnecessarily removed.

[To be continued.]

AMERICAN ASSOCIATION OF GENITOURINARY SURGEONS.

[Specially reported for *American Medicine*.]

SECOND SESSION.

Acute Vesiculitis with Special Reference to Treatment.—J. P. TUTTLE (New York City) described the anatomic location of the seminal vesicles, and stated that the symptoms were more often rectal than of the genitourinary system. He condemned Valentine's apparatus for irrigation of the urethra, considering it dangerous from its causing distention of the ducts, thus carrying infection up to the vesicles. The diagnosis can only be made positive through rectal examination. Pain is referred to the perineum and rectum, and with vesiculitis is associated with epididymitis. There is tenderness along the vas deferens. In a few cases he uses counterirritation with either silver nitrate saturated solution or electrocautery over the congested area and on the anterior wall of the rectum. Very commonly he uses cold irrigations of the rectum (temp. 55° F. prolonged); occasionally hot irrigations (temp. 110° to 115° F.). He closed his paper with a warning against too hot or too cold irrigation, and also against the use of the ordinary rectal irrigators.

A Further Report of the Author's Method of Exposing and Draining the Seminal Vesicles.—EUGENE FULLER (New York City). For the technic of the operation see "A Preliminary Report" in the *Journal of the American Medical Association*, May 4, 1903. He reported a second series of 12 cases, 9 of which were operated upon for the relief of chronic vesiculitis, 3 for draining vesicular abscesses. There were no deaths, but in one case an extensive perforation of the rectal flap occurred. In these cases sexual power which had been lost was recovered in from five to six months after the operation.

Discussion.—HUGH H. YOUNG (Baltimore) considers chronic prostatitis more difficult to cure than chronic vesiculitis. If the chronic prostatitis is relieved, he considers that the vesicular condition rights itself. GEORGE K. SWINBURNE (New York City) cited a case in which the symptoms of vesiculitis suggested prostatic disease, but the prostate was found to be normal. GEORGE R. KEYES, JR. (New York City) advocated draining the vesicles through the rectum, as causing no increase of infection and being of much simpler operation.

A Vesical Calculus of Unusual Dimensions.—ABNER POST (Boston) reported the case of a male, aged 66, who had symptoms pointing to vesical calculus; namely, frequent urination, sudden stop of flow of urine, pain, discomfort, and difficulty in standing. These symptoms dated back 14 years, when the patient had had a urethral hemorrhage. Examination showed dulness over the pubes, inability to enter a catheter into the bladder properly, urine foul. This last was relieved by urotropin. A suprapubic incision was made and the bladder exposed, and with difficulty the calculus was removed. The wound was closed and dressed, and there was continuous irrigation of the bladder. The patient died five days later. The calculus measured three-quarter inches in its largest circumference, and weighed 660 grains.

Some Suggestions in the Management of Prostatitis About to Enter Catheter Life.—GEORGE K. SWINBURNE (New York City). This paper will appear in a future issue of *American Medicine*.

Cancer of the Prostate.—ROBERT H. GREENE (New York City) states that statistics in regard to cancer of the prostate are very meager. This is probably due to the fact that cancer of the prostate is so small as to render careful pathologic examination of the gland necessary in order to discover the cancer. He estimated that cancer is present in 5% to 10% of cases of enlarged prostate, and quoted two cases reported by Brooks and Greene in which cancer was found in 58 examinations of enlarged prostate. He considers the residual urine bears no relation whatever to prostatic cancer. Pain is referred to the perineum, rectum, and also to the sciatic nerve. The youngest case reported was in a man aged 49; average age is 68. For the secondary

enlargement of the lymphatics he refers to 71 autopsies of cancer of the prostate, in 85% of which the glands were infected, 30% inguinal, and a still larger percent postmesenteric and the glands along the iliac vessels—5% axillary glands. He reported a case in which the patient had a burning in the perineum, a small amount of residual urine, and slight enlargement of the prostate. Prostatectomy was performed. The right lobe was found to be cancerous, and the left lobe of the organ was simply hypertrophic.

Medicolegal Studies in Cases of Alleged Syphilis.—ABNER POST (Boston). At the request of the author, because of legal complications, this paper was not abstracted.

THIRD SESSION.

Demonstration of Author's Ureterocystoscope.—J. TILDEN BROWN (New York City) states that in the use of his instrument the patient is placed in a dorsal position, with the lower end of the table elevated; legs supported on a lateral leg rest, and the instrument and irrigating apparatus at one side. The instrument consists of an obturator acting also as a catheter for the preliminary bladder irrigation; telescope, on the under side of which were two tubes, through which the ureter catheters passed. The lamp was an open one. With this instrument he was enabled to irrigate the bladder, cystoscope it, and also to catheterize the ureter separately. The proximal ends of the catheter were covered, so that no contaminating material could enter them during the manipulation, and the urine so drawn off could be examined bacteriologically without having been contaminated.

Use of the Cystoscope in the Study of Prostatic Hypertrophy.—HUGH H. YOUNG (Baltimore) states that in the ordinary cystoscope the field of vision is at right angles to the shaft of the instrument, the focusing distance being about 2.5 cm. In its use on the prostatic orifice the tissues are so close as to give great magnification and contract the field of vision to about 60°; therefore, in order to use the entire orifice—namely, 360°—it requires six different views of 60° each. He had devised an instrument to look backward, but because of the imperfections due to poor instrument makers it was not as yet entirely satisfactory. The object of his paper was to show how to make ordinary cystoscopy useful in examining the prostatic orifice. He exhibited two series of charts, the first series showing the different shapes assumed by the prostatic orifice from pressure either lateral, anterior, posterior, or their combinations. The enlargement of the middle lobe particularly gave a Y-shaped appearance to the orifice, thus giving two lateral passages into the bladder, making accurate cystoscopy difficult. The second series showed the appearance of the different segments within the limits of the field of the cystoscope. One of the chief faults of the cystoscopic examination of the prostatic orifice was the inability of the operator to determine the character of the enlargement, thus enabling him to make a more complete removal without a possibility of leaving any behind.

Report of a Case of Filariasis.—J. TILDEN BROWN. This case was previously reported before the Pathological Society of New York and published.

Some Observations on the Surgical Treatment of Chronic Bright's Disease.—RAMON GUITERAS (New York City) had read a preliminary report before the Association in 1902. The theory of the operation was that the circulation in the kidney is increased by anastomosis formed with the surrounding or enfolded tissues. In the general summary of these cases and those collected from literature the results shown were good. A fair percentage were cured and a large percentage were improved.

Discussion.—EDEBOHLS (New York City) stated that he had not reached any definite conclusion in regard to the operation, recognizing that some time must elapse before definite results. He mentioned the indefinite value of animal experimentation. He cited a postmortem on a case of his operated on four months previously. Serial sections were made and showed enormously enlarged vessels entering the new-formed kidney capsule from the surrounding fatty capsule. Those cases which had survived the operation showed improvement, with a uniform result of a steady increase in the elimination of urea. Subjectively all the cases were reported as feeling much better. In his operation he simply decapsulates the kidney and returns it to its fatty bed, where it is firmly supported. He considers that the operation will have to go through certain amount of evolution before finding its definite place.

Rupture of the Kidney.—F. S. WATSON (Boston) reported 5 cases of his own and the results of examination of 660 cases gathered from literature. The causes of rupture were varying, muscular action causing 10%. He was struck by the slight force necessary for rupture to take place. Blows over the front of the abdomen with the patient on his back was one of the causes of rupture. The kidney was never ruptured on one side with an accompanying injury to an organ on the opposite side. Intraperitoneal symptoms were usually due to rupture of the peritoneum. Tumor formation occurred in 143 cases. Hemorrhage was the frequent cause of death. In all the cases there was a striking absence of injury to the omentum or the intestine. **Indications for operation:** (1) Marked and persistent hemorrhage; (2) presence of a rapidly increasing tumor or area of dulness in the loin; (3) development of a tumor in the loin 10 days or more after the injury; (4) immediate operation when

there are signs of free fluid in the abdominal cavity; peritonitis or other peritoneal injuries. *Treatment:* Expectant, incision, and tamponing, nephrotomy, and finally nephrectomy. In nephrectomy the fatalities were greatest—21%.

Some Observations on the Effect of Catheter Drainage on the Functions of the Kidney and Pyelonephritis.—ARTHUR P. CABOT (Boston) considers that the back pressure on the kidney by enlarged prostate or other causes is relieved by constant and thorough drainage of the bladder by a retained catheter. This gave a relief of tension and freedom to the glomeruli and tubules of the kidney. As a result there was a considerable increase in the amount of daily urine and a proportionate increase in the elimination of solids. The catheter drainage should be continued until urine is normal. *Method of removal:* 1. All urine through the catheter is stopped for short intervals, the intervals being gradually increased. 2. The withdrawal of the catheter for gradually increasing intervals. He does not consider that the catheter treatment should supersede other operative procedures on the prostate.

Discussion.—EUGENE FULLER (New York City) spoke of the element of bacterial nephritis occurring through back pressure of infected urine and it is relieved by this method.

AMERICAN ASSOCIATION OF PATHOLOGISTS AND BACTERIOLOGISTS.

Third Annual Meeting, Held in Washington, May 12, 13 and 14, 1903.

[Specially reported for *American Medicine.*]

SECOND SESSION.

This session attracted a larger attendance than any of the sessions, because of the general interest in the question of the discovery by Dr. Councilman of the cause of smallpox. The session was devoted entirely to the papers upon variola.

A Bacteriologic Investigation of Vaccine Virus.—W. T. HOWARD, JR., and W. H. WEIR (Cleveland) gave the results of a series of studies upon the vaccine virus offered in the open market by several firms. Extensive tables classifying the results are exhibited, and the literature discussed. The work is confirmatory of the work done by many others in this country and abroad. The new facts of interest are limited to the finding of actinomyces in several of the preparations, which were discussed in a separate paper.

The present status of the question of vaccine virus was well summed up in the discussion by Dr. ROSENAU: Vaccine virus often contains germs of a more or less suspicious nature and in greater or less quantities. But we do find pure vaccine virus, and the matter is perfectly analogous to that of another bovine product, milk. It has been demonstrated that pure milk can be obtained with the proper care, and such is the case with the commercial preparation of vaccine virus. It is merely a question of cleanliness.

A Study of Actinomyces Obtained from Vaccine Virus.—W. T. HOWARD, JR. (Cleveland) described the cultural characteristics of the organisms which he has isolated.

Discussion.—BERGEY (Philadelphia) touched upon the weak point in this paper—the means employed in the diagnosis of actinomyces, since the pathogenicity of the organisms isolated and studied by Howard had not yet been determined.

Streptococci in Variola: (a) Relation of Streptococci to Variola.—R. G. PERKINS and G. O. PAY (Cleveland) described the results of a routine examination of 40 autopsies of variola cases, 38 cases showing the presence of streptococci in the skin lesions; in many of the cases streptococci were found in the heart's blood. The time of the blood invasion seems to be independent of the course of the disease. Streptococci are present in all severe cases of variola, but have nothing to do with the etiology of the disease. (b) **Identity of the streptococci in variola.** The conclusion from these studies was that various streptococci occur in variola. The point of entry is probably the bronchial mucous membrane. (c) **Serum treatment in variola.** Perkins and Pay have studied the effect of treatment with specific streptococcus serum. The results were negative, as one might expect if the streptococcus of the particular case did not happen to be the one used in the immunization of the animal from which the specific serum was taken.

The Agglutination Properties of the Blood-serum in Variola and Varioloid for Red and White Blood Cells.—W. T. HOWARD, JR. (Cleveland) has studied the effect of serum taken from variola patients upon the red and white blood cells from vaccinated and nonvaccinated patients, and from patients suffering from variola. The conclusions reached are: 1. The blood-serum of variola patients causes agglutination of the red and white cells of vaccinated and nonvaccinated individuals, and of rabbit's corpuscles, but does not agglutinate those of the ox. 2. This serum has no hemolytic effect.

Observations on the Bacteriolytic Complement-content of the Blood-serum in Variola.—R. L. THOMPSON (Boston) [read by W. R. BRINCKERHOFF] has used a modification of the method used by Longcope—the reactivation of the amboceptor found in the heated serum of animals by the complement of the human serum, which method permits of using

much smaller quantities of the human serum. Thompson concludes from his studies that there is a diminution of the bacteriolytic complement in the early stages of the disease, followed by a rapid return to the normal complement-content, except in cases of severe infection, where this return to the normal condition is not seen.

A Study of the Bactericidal Properties of the Blood-serum in Variola and in Varioloid.—R. G. PERKINS and G. O. PAY (Cleveland) by the use of Longcope's method, have reached the conclusion that there is a loss of complement in the early stages; later stages show less loss of complement, especially in infectious involvements. Wasting suppurations cause a loss of complement.

In the *discussion* of this paper HEKTOEN called attention to the fact that normal serum contains no complement for the streptococcus; we therefore cannot speak of a loss of complement as explaining the infection with streptococcus. Further in regard to Longcope's method, we must remember that very small amounts of normal serum suffice to kill very large numbers of the typhoid bacillus, and that we must bear in mind the phenomenon described by Neisser and Wechsberg.

A Study of the Etiology and Pathology of Variola.—R. G. PERKINS and G. O. PAY (Cleveland). This comprises inoculation and cultural experiments which have been entirely negative. No new contribution to the pathology is reported.

In the *discussion* EWING (New York) asked if Perkins has seen any specific lesions of the female genital tract. COUNCILMAN reported that they have found the same lesions in severe cases in the mucous membranes as in the skin; in one case lesions were found in the ovary, and in one case in the stomach. He referred further to the enormous streptococcus infection which occurs in all severe cases. PERKINS replied to Ewing that they have noted no lesions of the genital nor of the gastrointestinal tracts.

Studies on the Infectiousness of the Late Stages of the Skin Lesions of Variola.—W. R. BRINCKERHOFF (Boston) discussed the length of time that may ensue before the death of the contagium in the crusts of the late stages, and describes the results of culture experiments. By using fresh rabbit serum Brinckerhoff has found a method in which the contagium can be demonstrated; the rabbit serum causes the death of the greater number of the saprophytic organisms which occur in the crusts. The presence of the contagium was determined by inoculation into the cornea of the rabbit. A disc 88 days old gave positive results. The contagium could not be passed from one tube to another. Passage through a Berkefeld filter removes the contagium. Out of 12 corneas seven showed positive results. The conclusions were that the contagium is present in the crusts, and can remain alive for a long period; by appropriate treatment the specific contagium can be separated from the bacteria present in the crust, and can be made to grow under artificial conditions.

Studies on Variola in the Ape.—G. B. MAGRATH and W. R. BRINCKERHOFF (Boston) have made an important contribution to our knowledge. After a discussion of the literature and a description of the methods used, they describe the results in six inoculation experiments. Two monkeys developed local lesions only; one developed a local lesion, followed later by a general exanthema. The lesions contained the specific organism. Another monkey developed a primary lesion, with secondary papules in the vicinity. They conclude that monkeys are susceptible; the disease in monkeys is typical, and is accompanied by a disturbance of the leukocytic equilibrium. The lesions are essentially comparable with those of man, and contain both forms of the variola organism.

The Fat of Pneumonic Exudates: Microscopic Demonstrations.—H. A. CHRISTIAN (Boston). In the early stages of pneumonic exudation a substance giving certain reactions may be constantly found within the polynuclear leukocytes; in the later stages these cells contain a substance, also of fatty nature, which, however, gives a different reaction. The exact nature of these substances could not be determined.

Intracellular Enzymes and Antienzymes.—PHEBUS A. LEVENE and L. B. STOOKEY (New York) dealt with the presence of antienzymes in the tissues of the body. The conclusion is that such antibodies are present. Immunization experiments were reported, with positive results, but the paper was too long for the allotted time, and was not finished.

The Etiologic Factor in Variola, with Lantern Slides.—W. T. COUNCILMAN (Boston). It is impossible to report here this paper, since it consisted almost entirely of a demonstration of an excellent series of photomicrographs of the organism which Councilman has already described in preliminary publications. Of the most interest to the profession at large is the report of the discussion, and of the manner in which the paper was received. WELCH (Baltimore) says that he feels that Councilman has found the real thing. This opinion he bases upon his knowledge of Councilman's work and from the paper just read and from the photographs shown. We have here a definite structure and are not dealing with degeneration products. The discovery of the intranuclear forms of the parasite forms a very decided contribution to our knowledge. There are still many gaps to be filled, but Welch feels that America must be congratulated upon the work of Councilman. BERGEY (Philadelphia) reports that he has made a study of variola and has convinced himself of the correctness of Councilman's discovery. He was not able to see certain transition forms which have been

now brought out by Councilman between the stages of the parasite. HOWARD (Cleveland), since reading a preliminary communication sent to him by Councilman, has been able to find certain of the stages. EWING (New York) confesses that he has been working upon the opposite idea, but yet inclines to the idea that Councilman has found the specific organism. However, he would like to have certain facts explained before accepting the discovery entirely. He refers to the fact that these bodies have been seen by other observers, except the intranuclear forms, which is the most important advance in our knowledge, and yet these observers have differently interpreted the bodies. He is not yet ready to abandon the theory of degeneration products, and will await a satisfactory explanation of the disappearance of the nuclear contents.

[To be continued.]

AMERICAN ORTHOPEDIC ASSOCIATION.

[Specially reported for *American Medicine*.]

SECOND SESSION.

Hip Disease Considered with Special Reference to the Combined Treatment.—R. TUNSTALL TAYLOR (Baltimore) is of opinion that the diagnosis of this disease should be made by aid of the skiagraph and the tuberculin method relegated to history, because other conditions, such as syphilis, leprosy, etc., are known to give a positive reaction also. Anti-syphilitic treatment is dangerous, as serious results often happen from the delay in trying the test. The combined method should be employed in the treatment of the disease when it fails to respond to mechanical treatment, though never in the acute stages. The operation consists in making an anterior incision, erosion of the diseased area, disinfecting with formalin solution and suturing, leaving only a small wick drain extending to the bone and withdrawing it on the third day. Carbolic acid as a disinfectant is dangerous, producing death in some instances. The combined method was tried on the following groups: (1) Favorable cases in good condition; (2) cases in which suppuration was inevitable; (3) septic cases with discharging sinuses, and resulted (1) in good motion; (2) no shortening; (3) shortening duration of the disease. Dr. Taylor illustrated with patients and skiagraphs. The value of the x-ray in hip-joint disease cannot be overestimated, as it clears up all questions of diagnosis and should be employed throughout the course of treatment to determine the proper time to allow functional use and to anticipate any complications or relapse.

Discussion.—SIR WM. HINGSTON (Montreal) spoke in glowing terms of the paper and asked the advantage of the anterior incision over the posterior one commonly employed. He said Lorenz was not on trial, but his method of treating congenital hip dislocations; time alone would work out the best method. STARR (Toronto) laid claim to originating the carbolic acid treatment and said ill results following its use were due to following it with alcohol, which dissolved the coagulate of albumin formed by carbolic. He also favors early incision and complete suturing. MCKENZIE (Toronto) recommends that hospitals use tents (out door) during the pleasant months and believes the atrophy following hip disease is the result of traumatic lesion, not long mechanical treatment. TAYLOR, in closing, said that the anterior incision avoids damaging the muscles. He had had evil results following his use of carbolic acid, though no alcohol was used in conjunction with it.

The Correction of Deformity at the Hip, the Result of Disease: A Study of Best Methods and Best Positions.—V. P. GIBNEY (New York). Question, "Does the disturbance of the reparative process by forcible correction under an anesthetic cause a recurrence of the disease?" and reported the following cases: Case I.—Girl, aged 9, had been treated for considerable time and thought cured. She began to walk badly and symptoms returned. Forcible correction was performed and a plaster cast applied, the patient being kept in bed on account of a slight rise in temperature. A suspicion of fluid justified aspiration of the joint, with negative result. Night cries became intense and operation was performed, a permanent cure resulting. Incision was made above the trochanter, diseased portion removed with curet and wound closed with suture. Case II.—Boy of 15 asked for treatment to overcome a deformity of hip. The deformity was corrected and a plaster cast applied. The deformity returned and was overcome by osteotomy and the application of plaster cast. The boy developed measles during the course of the treatment and was removed from hospital. After recovering from the measles the hip was as bad as ever. Forcible correction was again applied. Later two sinuses appeared, but closed, leaving the hip still deformed. Gaunt's subtrochanteric osteotomy was then performed, but the condition was not finally cured till a cuneiform osteotomy was done. This case illustrates that no evils result from treatment and that forcible correction bears no relation to tuberculous meningitis. Gibney would recommend the subcutaneous method, since it is a "bloodless" one.

Discussion.—A. J. STEELE (St. Louis) reported congenital dislocation of the hip in a patient 8 years old. Lorenz advised forcible reduction. He divided the adductors and followed Lorenz's advice, and repeated the operation with good results, till a few weeks later the patient died of spinal meningitis (tuberculous). He doesn't advocate forcible reduction. JOHN

RIDLON (Chicago) reported five cases in three patients, all chronic. In four he cut the adductors and flexors and reduced; in one he cut the adductors and flexors and couldn't reduce; therefore he did an osteotomy close to the acetabulum, divided and broke the bone. Results: All the patients lived, the deformity was corrected, and good motion obtained.

Some Points in the Treatment of Hip-joint Disease.—GEO. B. PACKARD (Denver) states that there are many methods of treating this disease, most of which are successful; the acute symptoms of pain and spasm leave and the condition improves. In any method of treatment three points should be borne in mind: (a) How long should the treatment be continued? The following case will serve to answer the question. Girl, aged 14, suffered from double hip disease, with marked muscular atrophy. Both limbs were brought into position with no displacement of heads of femurs nor suppuration resulting. Flexion of the right femur occurred and crutches were used for five years, the weight being borne by the left limb. Bony ankylosis formed at the right hip, while the left limb, though in use, atrophied. (b) Massage, after the subsidence of the acute symptoms is often the means of preventing a recurrence of the disease and improving the atrophied condition. (c) Constitutional treatment for this disease has been neglected. Fresh air and abundance of sunshine is as necessary here as in tuberculosis elsewhere. The diet should consist largely of meats, fats, eggs, and milk, with an egg and glass of milk between meals and the anemia combated with iron, arsenic, etc. Neglect of this general treatment is often the cause for poor results.

Resistance of Tissues as a Factor in the Manual Reduction of Congenital Hip Dislocations.—E. H. BRADFORD (Boston) states that the practical use of this method of reduction is limited by the surgeon's power and the strength of the resisting tissues. Variations in the surgeon's strength may be disregarded; but the resistance is of great importance and the danger of using great force on strongly resisting tissues is fully realized in irreducible hip cases. To extend the usefulness of the method of reduction by manipulation it is necessary to determine as exactly as possible the relative importance of the resisting tissues and whether or not the resistance may be overcome by other means than stretching. 1. The Lorenz method is applicable in most cases in children under 6 years of age. 2. In irreducible cases in older children it may be necessary to incise the capsule and divide the tendons of the *adductor magnus* and the hamstring group at a distance from the hip. Why doesn't the Lorenz method and cutting of the capsule reduce the luxation? Because of the long fiddle-bow tendon of the adductor magnus. Experiments on the cadaver and on patients have proved that it is impossible to dislocate the hip by traction unless this tendon is severed. Lawer Bartlett, of Boston, seeing the method of traction Lorenz employed, has constructed an apparatus which will even dislocate the hip without dividing the adductor magnus tendon. It consists of a frame for each limb ending at the trochanters in a double cylinder, which has a handlike cup to fit shape of hip, and on outer side a handle to act as the fulcrum. This is grasped and, the feet having been fastened to frame, the frame is abducted. The fulcrum being at the trochanter, the head is forced down. If necessary a wrench can be applied to the handle, thus permitting more force to be applied.

[To be continued.]

AMERICAN DERMATOLOGICAL ASSOCIATION.

[Specially reported for *American Medicine*.]

FIRST SESSION (CONTINUED).

An Unusual Case of Tuberculosis Cutis (?).—T. C. GILCHRIST reported this case in a negro girl of 16, whose mother is living and well; father died of malaria. She is the youngest of 10 children, all of whom are living and well. She had prominence of eyeballs, and was treated at a dispensary in which probes were used in her eyes. Soon after lesions were noticed at the inner canthus. One year later the same were noticed at the side of the nose. Later she had sore throat and huskiness of voice. Upon throat examination the uvula was found destroyed; a scar in right tonsil, also in left larynx with dull, red, irregular nodules, covered with scabs which bled easily; two small pustules on the upper lip. There were no other eruptions. The submaxillary glands were enlarged and looked tuberculous. Upon microscopic examination, nodules with apparent organized bodies were seen resembling blastomycetes. Most of them were situated in giant cells, but some were not. Tubercle bacilli could not be found in the tissue. The enlarged glands of the neck were removed, and large numbers of similar bodies were found in them, and the majority of them had undergone definite calcareous degeneration. A guinea pig was inoculated intraperitoneally with this gland tissue, and it died in four weeks. Small nodules were found in the liver; these nodules contained large numbers of similar bodies to those found in the gland and skin lesion of the patient. The bodies were present in necrotic areas in the liver, and there were many commencing pathologic areas present in which no bodies could be found. No tubercle bacilli were present in the guinea pig. This experiment showed definitely that these bodies were

not inanimate objects, otherwise there would not have been found necrotic areas and much multiplication of these bodies. The death of the animal was apparently due to the presence and growth of these bodies. Further extended experiments with glands which were excised later from the patient did not produce definite results. Pathogenic lesions were produced in a dog and a guineapig. Bodies similar to those found in the patient were found in the cervical glands of the dog, which was killed four weeks later. A mold was grown in another case and in a potato a pathogenic streptothrix was obtained. Nothing could be grown on any medium. Five years from the time the patient first came under observation, scrapings from the nose of the patient were injected into a guineapig which on examination, four weeks later, showed tubercle bacilli.

Discussion.—M. B. HARTZELL said Gilchrist failed to prove this a case of tuberculosis; he did not demonstrate that a new infection could not cause the condition five years later. H. W. STELWAGON stated that making successive experiments and finding negative results and then at five years finding tubercle bacilli, does not prove that the organism was the primary cause.

Note on a Method of Early Diagnosis in a Case of Leprosy.—F. J. SHEPHERD detailed the case of a Chinaman, who had been in America two years and was admitted to Montreal General Hospital with a skin affection of an erythematous type. Redness and thickening of the skin on arms and forearms were marked, which was more noticeable in warm weather; in areas, size of a 25-cent piece to those of a 50-cent piece, similar patches were to be seen on the face. These were not painful, but itched greatly. Some of the areas were anesthetic, and all were covered with branny-like scales of a brown color. In the neck both external jugulars were much enlarged and the cervical glands were also much enlarged. The hands were perfectly normal. Both ulnar nerves were very much thickened. Leprosy was suspected, and the city authorities were anxious for positive diagnosis in order that the patient, if suffering from leprosy, might be sent home, as the Canadian Pacific Railway had offered free transportation. One of the ulnar nerves was cut down upon, a portion of the nerve was removed, and upon examination was proved to contain numbers of the bacilli of leprosy. Thus the diagnosis was positively established.

Discussion.—P. A. MORROW thought that in this case the symptoms were sufficient, and the bacteriologic examination was not necessary to make the diagnosis. He said the nasal secretions should be examined. The nose is the primary seat of lesions of leprosy. In a very large percentage of cases of leprosy the disease is identified by finding leper bacilli in nasal secretions. He said that physicians in charge of leper colonies in countries where leprosy abounds say that leprosy and catarrh go hand in hand. It has been shown that the posterior auricular nerve is the first nerve involved, and this is an aid in the diagnosis.

Officers for 1903-1904.—President, Joseph Zeisler, M.D., of Chicago; vice-president, M. B. Hartzell, M.D., of Philadelphia; secretary and treasurer, C. J. White, M.D., of Boston. Next place of meeting, Niagara Falls.

The Use of the Röntgen Rays in Dermatology.—H. W. STELWAGON said there is much difference of opinion as to apparatus; there is room for improvement over what we already have. Some dermatologists prefer the static; he preferred to use the storage battery and found advantage in the large coil and a six-inch spark. Low vacuum should be used, as it is safer, and better results are obtained from it. For the protection of the physician's hand, mittens lined with lead foil give good service. He obtained the best results from the use of x-ray in lupus vulgaris and epithelioma. He does not believe it should be used in all skin diseases, and especially when there is inflammation. The Flinsen light is of more value in lesions of the mucous membrane. In administering the treatment one should begin with a minimum dose and give short exposure. Some persons are more susceptible than others, hence it is difficult to determine the amount of flame we are giving each individual, as we do not know what the acting element of the flame is.

W. A. PUSEY's paper dealt most with the rational basis and indications for x-ray. There are found changes in the tissue and in bacteria on which the x-ray is used. All observers agree that in normal skin subjected to x-ray there is a hyperplasia of the epidermis followed by an increase in the pigment and proliferation of cells without mycosis. Later there is disintegration of cells. There are similar changes in the appendages of the skin. Atrophy of nails, hair, and glands. Upon the blood-vessels there are inflammatory changes; the cells of the intima are swollen. In diseased tissue there are changes similar to normal tissue. Tissue taken from nodules of cutaneous carcinomas showed disintegration—the nuclei are broken down and scattered; later the areas of carcinomatous tissue were filled with connective tissue. The bloodvessels showed marked endarteritis. There is degeneration and absorption of the diseased cells without effect on the healthy stroma. The Röntgen ray has a distinct effect on bacteria; when used on acne and syphilis they clear up and disappear; this may not be due to x-ray *per se*, but diseased cells are destroyed, phagocytosis is increased, and the healthy cells are better able to resist. The indications for the Röntgen rays are: (1) To remove hairs, especially in syphilis and tinea tonsurans; (2) in exfoliation of

nail substance; (3) to cause atrophy of sweat-glands; (4) to decrease the activity of the sweat-glands, especially valuable in acne roseacea; (5) for its destructive effect on bacteria in the tissue, the most brilliant results being obtained in lupus; (6) for stimulation of metabolism of skin, a very valuable adjunct in eczema, psoriasis, and lupus erythematosus; (7) for destroying tissues of low resistance, as in epithelioma; (8) to relieve pain and itching, especially of value in eczema and pruritus.

Discussion.—DUHRING said that he had used the Röntgen ray for a number of years and was convinced that it is of great value in many diseases. He has found the low vacuum to give the best results and does not have the inflammatory results on the surrounding tissue. To obtain results one must persist in its use, making applications every other or every third day. JAMES C. WHITE recommended the temperate use of the Röntgen ray as a therapeutic agent. It must be used with extreme caution, and especially where inflammation exists and in syphilis and psoriasis. He said he had seen serious results follow in the careless, injudicious use of the x-ray. He thought other remedies ought to be used along with the x-ray in tuberculous skin diseases and in carcinoma. WILLIAMS (Boston) said we have for the treatment of skin diseases a remedy of great value in the x-ray, if used with the greatest care. He said he had used it on 150 cases of superficial newgrowths, which had responded to its use. The disadvantages are the long time in treatment and the necessity for many exposures. He said he determined the amount of flame he used in each case by means of the fluorometer, thus avoiding any untoward effects. F. J. SHEPHERD said that he treated most x-ray burns by cutting out the burn and doing skin grafting. He believed the best results were obtained by using the low vacuum with short exposures and daily treatment. He thought that carcinoma of mucous membrane ought to be left alone by the dermatologist and properly treated by the surgeon.

[To be continued.]

THE AMERICAN OTOLOGICAL SOCIETY.

[Specially reported for *American Medicine*.]

FIRST SESSION.

A Case of Mastoiditis with the Picture of Osteomyelitis, Extension to the Occipital Bone and Abscess Under the Deep Muscles of the Neck.—H. KNAPP (New York) had performed two operations, both very extensive in that they required the removal of all the cellular structure about the mastoid process and backward to the occipital bone, but without interfering with the tympanic structures; a complete recovery with preservation of good hearing resulted.

Discussion.—GRUENING advocated commencing the operation in such cases at the tip of the mastoid instead of first opening the antrum in the usual way. He believed that in that way we would frequently find that the pathologic process had progressed to the tip of the mastoid and left the antrum and that the dangers of reinfecting the antrum would be diminished. DENCH advocated always cleaning out or removing the tip of the mastoid with every case, even though the disease appeared to be limited to the antrum. BACON also believed in the routine opening of the mastoid tip, but CROCKET, while in favor of opening the tip first, so as to prevent infection of the healthy antrum, did not believe it would be necessary as a rule to remove the tip, and thought that less deformity would follow the operation if found possible to leave the bony tip in place.

Abscess of the Cerebellum, with Specimen: Report of a Case of Abscess of Temporo-sphenoidal Lobe; Operation and Recovery.—EMIL GRUENING (New York) presented the clinical histories of two very interesting cases. In the first an abscess in the cerebellum was diagnosed, and from the history of a chronic suppurative otitis media on the left side and the clinical features most prominent in the case it was concluded that the abscess must be situated in the left lobe. An operation was performed on that side of the head, but the child died some days later and the autopsy disclosed an abscess in the right lobe of the cerebellum, the side opposite to that on which the ear trouble had existed. The second case was an interesting one of cerebral abscess with no very definite symptoms other than the history of otitis media, subnormal temperature and slow pulse. An operation was performed with very satisfactory results.

Discussion.—DENCH said that one point that should be emphasized in these cases of cerebellar abscess was the fact that they often give rise to so few symptoms. He cited a case in which he thought he had done a very complete and careful mastoid operation. The patient did well for several days and then suddenly he noticed a foul odor about the dressings. The next day the temperature jumped to 104°, and the patient died before removal to the hospital could be accomplished. Autopsy revealed an abscess of the cerebellum, and yet this patient had no symptoms pointing in that direction, except possibly a little mental dulness for a few hours before death. RICHARDS cited a somewhat similar case, and added that in his experience a foul odor about the wound or dressings demanded a careful investigation. TANSLEY said that in abscesses of the brain he had usually noticed one symptom as fairly constant, that the patient turns the eyes to the side opposite that on which the brain

lesion is situated, and has difficulty in looking the other way. RANDALL (Philadelphia) said that he had frequently noticed this nystagmus, but that in several cases he had seen the eyes turned toward the affected side.

Report of a Case of Acute Otitis Media with Sinus Thrombosis; Mastoidectomy, Excision of Internal Jugular Vein; Serous Meningitis, Exploratory Craniotomy; Death; Autopsy.—E. B. DENCH (New York) stated that in spite of the extensive operation this patient did very well up to a few hours before death, which seemed to result from the rupture of a large vein at the base of the cerebellum. One interesting feature of the case was that during the operation the fourth ventricle was opened and yet the patient survived what has heretofore been considered a necessarily fatal accident for more than a week, and then the cause of death was in no way connected with the opening of the ventricle.

The Clinical Value of the Encephaloscope.—FREDERICK WHITING (New York) exhibited a series of these instruments varying only in size, which are in effect simply enlarged forms of the urethral speculum. He described his method of using them and the conditions under which they were of service. By introducing them into the wound and using proper illumination one can examine an abscess cavity in the brain and study the pathologic conditions not only of the pus sac and its side walls, but the entire drainage route. Its greatest value seemed to be as an aid to the postoperative dressings of such operations.

Discussion.—MCKERNON and DENCH testified to the usefulness of this new instrument, as they had seen it employed by Whiting and had used it a few times themselves.

[To be continued.]

AMERICAN OPHTHALMOLOGICAL SOCIETY.

[Specially reported for *American Medicine*.]

FIRST SESSION.

SAMUEL D. RISLEY (Philadelphia) presented a memorial to the late W. F. NORRIS (Philadelphia).

CHAS. H. WILLIAMS presented the report for the Committee on Standards and Methods of Examination, recommending a series of test-type cards, both for distant and near vision testing. The report of the committee was accepted and a resolution adopted appropriating sufficient money to prepare such cards so that they might be furnished to members of the society at the mere cost of printing.

Tuberculosis of the Conjunctiva.—EDW. JACKSON (Denver) stated that the patient, a girl 10 years of age, with a history of previous good health, had a sudden attack of fever associated with vomiting and swelling of the left cheek and eyelids. The first oculist who saw her made the diagnosis of syphilis, but in spite of treatment she continued to lose weight, and the swelling of the face increased and involved the glands about the angle of the jaw. On the conjunctival surface of the lids there were masses of granules, somewhat resembling trachoma, and in the retrolarsal fold considerable fatty necrosed tissue. The granules when examined closely bore a striking resemblance to miliary tubercles, and microscopic examination of the necrotic tissue showed typical tubercle bacilli. Under the general treatment for tuberculosis and the local use of a wash of trikresol, 1-1,500, the patient made a rapid recovery.

Discussion.—KNAPP (New York) said that he had a fresh case of tuberculosis of the conjunctiva under observation and that he had seen other cases which had all the principal symptoms but in which he was not able to demonstrate positively the bacilli. In view of the difficulty of catching these organisms, however, he thought that should not necessarily determine us against the diagnosis. BURNETT (Washington) remarked that he had seen quite a number of cases of tuberculosis of the conjunctiva, particularly among colored children. His treatment had been thorough curetment of the ulcer, followed by the application of formalin 1-60.

Localized Tuberculosis of the Eye.—J. A. SPALDING (Portland, Me.) reported: Case I.—A. B., a healthy boy of 8 years, with family history free from tuberculosis, fell from an express wagon, hitting his head and elbow, but escaping without any serious injury. Six weeks later he was seized with an intense chill, headache, pain in the left temple, and vomiting, followed by a rise of temperature to 104°. For about a week he had a subnormal temperature every morning and a rise to 102° every afternoon and complained of constant pain in the left temple. He became apathetic and his head was drawn noticeably backward. His physicians could not agree upon a diagnosis. Ten days after the first chill his parents noticed a yellowish reflex from the left pupil, redness of the eyeball, and loss of sight when the right eye was covered. After a few days all of his local and general symptoms decreased in intensity, but a week later there was a recurrence of all the symptoms except the orbital pain, and two weeks later the patient was brought to Dr. Spalding. Enucleation was advised, under the idea that the yellowish mass might be a glioma and the general symptoms due to purulent meningitis. The result of the operation, however, was a surprise, in that every symptom ceased as if by magic and for more than four years the patient has had no trouble. Microscopic examination of the eyeball showed that

it had been entirely destroyed by tuberculosis. Case II.—A delicate boy of 7, who had suffered an attack of ophthalmia in infancy, which terminated in the loss of sight in the left eye. The blind eye became painful and congested, and the right eye showing symptoms of sympathetic irritation it was considered necessary to enucleate. Following the operation the boy's general health begun at once to improve. Microscopic examination of the eye disclosed a tuberculous tumor springing from the choroid.

Report of a Case of Acute Glaucoma Incited by the Use of Euphthalmic for Diagnostic Purposes.—W. H. RING (New Haven) related a case in which, as indicated in the title, a few drops of euphthalmic, employed for the purpose of dilating the pupil to permit better ophthalmoscopic examination of the eye, was followed some hours later by an attack of acute glaucoma.

Discussion.—KNAPP (New York) said that he had seen three cases of acute glaucoma following the use of euphthalmic, but they all occurred while the patient was still in his office, and all subsided promptly after the application of eserine. He still employs it, believing it to be the most manageable mydriatic we have for such examinations, but he always detains such patients in his office for a half hour or so to watch them. POOLEY reported a similar case occurring in an eye where there had been no suspicion of increased tension, but on the other hand a marked myosis, and said that he did not see how we could accomplish much by detaining such patients a half hour, as the trouble usually appears after a much longer period. PYLE (Philadelphia) reported the details of a case in which homatropin was used and glaucoma came on after 72 hours, requiring posterior sclerotomy in addition to the local use of eserine and massage to secure relief.

Concerning the Possible Etiologic Factors in Tobacco Amblyopia Revealed by an Analysis of the Urine of Cases of this Character.—GEO. E. DE SCHWEINITZ (Philadelphia) had the assistance of an expert physiologic chemist to examine the secretions in a series of cases of tobacco amblyopia, and reports in detail the results of these careful examinations. It is impossible to abstract such reports fairly, and the paper should be read in full.

Diseases of the Eye in the White and Negro Races.—H. D. BRUNS (New Orleans) has carefully reviewed the case histories of 17,311 eye cases seen in the hospital during the years from 1893 to 1901. He finds certain characteristic differences as to the frequency of the same disease in the white and negro races. Blepharitis marginalis and hordeolum are found less frequently in the blacks than in the whites, while chalazion is much more common in the blacks. The negro is almost entirely immune to trachoma and diseases and injuries of the lacrimal apparatus are extremely rare. Phlyctenular disease of the conjunctiva is very common, while purulent conjunctivitis was unexpectedly rare considering their opportunities for infection. Diseases of the cornea are quite frequent and apt to be more destructive in the negro race and affections of the iris and choroid are likewise more common than with the whites. Anomalies of the muscles are almost unknown and refraction errors not frequently encountered.

Discussion.—KOLLOCK said that his experience was exactly in line with that of Bruns. He had seen considerable tobacco amblyopia among colored women who did not use alcohol. He had found that in treating the negro no matter for what condition it was usually necessary to give mercury because of the great prevalence of syphilis. HOWE said that several years ago he had examined the lids and conjunctiva in microscopic sections and had not been able to demonstrate any anatomic or histologic differences between the white and negro races.

[To be continued.]

AMERICAN MEDICAL ASSOCIATION.

Fifty-fourth Annual Meeting, Held at New Orleans, La., May 5 to 8, 1903.

[Specially reported for *American Medicine*.]

Section on Practice of Medicine.

FOURTH SESSION (CONTINUED).

Sources and Manner of Plague Infection.—W. J. CALVERT gave a historic sketch with reference of the great pandemics of plague which have occurred from time to time throughout the world, laying some stress on the fact that we are now in the presence of a somewhat mild pandemic. These pandemics have universally spread from a central epidemic, and have followed the various lines of commerce until becoming fairly general. Plague is essentially a disease of the lower animals. *Bacillus pestis* was described and its peculiarities given. Germs of the disease are conveyed for the most part by clothing, rats, cotton goods, mice, flies, fleas, and convalescent patients, in whose mouths it may be found for many days. In adults about 60% of the buboes are inguinal, 25% axillary, and the rest cervical. Among children cervical buboes preponderate. It is most probable that infection is received through some superficial wounds either in the alimentary tract, the respira-

tory apparatus, or through the skin. Where the disease abounds the vast majority of the cases occur among the poor, where dark, poorly ventilated houses are inhabited, and where the entire hygienic environment is conducive to ill-health.

Prophylaxis of Plague.—J. J. KINYOUN asserted that early diagnosis of plague is very important, but is often difficult to make, especially in the beginning of an epidemic. Many of the first cases die unnoticed and among many Oriental peoples are often unattended by a physician. Plague may assume such a variety of forms that it can be mistaken for anthrax, tonsillitis, mumps, diphtheria, erysipelas, pneumonia, acute pleurisy, malignant pericarditis, endocarditis, peritonitis, appendicitis, acute nephritis, meningitis, acute rheumatic fever, typhoid, typhus relapsing, and malarial fevers, acute dysentery, miliary tubercle, septicemia, pyemia, and syphilis; hence the difficulty of early diagnosis. Many mild cases are doubtless overlooked at the beginning of an epidemic, though the ambulant type is not so frequent as is commonly supposed. Filth, dampness, and general unhygienic conditions are the predisposing factors. But for the Chinese Exclusion Act, the United States would doubtless long ago have suffered from plague, but as it is the act does not wholly exclude this disease. Difficulties arise from the fact that plague frequently occurs in isolated localities where no facilities for examination exist. Bacteriologic investigation is necessary for correct diagnosis. The measures to be inaugurated in case plague is suspected come under the following headings: Isolation pending a diagnosis; segregation under medical supervision of contacts and suspects; disinfection of premises; sanitary measures in the immediate vicinity; destruction of all vermin, and their laboratory examination; and general measures against dissemination of the disease. In maritime commerce, where plague is suspected, health officers should look to the personnel of vessels, cargo, the vessel itself, the maritime quarantine, etc. Bombay received its present epidemic supposedly from a vessel. It is fortunate that our vessels in the Pacific do not actually touch at Oriental ports, otherwise all vessels would be infected. Sanitary authorities should have wider authority and not be held strictly to the letter of the law.

Discussion.—F. G. NOVY stated that Yersin and not Kitasato discovered *Bacillus pestis*. It should be remembered that plague is a disease of the lower animals, and it enters the system by way of a wound. The vitality of the germ is not so great as some seem to suppose; it is easily killed. It escapes from the body by way of pus from buboes, urine, saliva, etc. Vaccination against plague is used to some extent and gives immunity for several months. Yersin's serum when given promptly, copiously and properly gives perfect results. He detailed the history of a laboratory student infected with plague of the pneumonic type, whose life he saved by subcutaneous and intravenous injections of large quantities of Yersin's serum. E. RIXFORD (San Francisco), when called upon, stated that he had been with the conservative element in his city and State in the recent threatened epidemic in San Francisco. His people are not proud of their record, but they feared quarantine and its effects and naturally wished to avoid them. They believed that the national and State governments were fully competent to take care of the condition. Had the world three years ago known as much about plague as it now does all the serious difficulties in the Western cities would have been avoided.

FIFTH SESSION.

Sources and Manner of Infection of Typhoid Fever.

WILLIAM H. WELCH said the primary cause of typhoid fever is of course *Bacillus typhosus*, and this germ must gain access to the alimentary canal. The disease cannot be produced by hypodermic injection of the bacilli, and there is no clinical proof that germs taken by the air into the respiratory organs ever produce enteric fever. Practically they are eliminated only in the urine and feces, their occurrence in the sputum being too rare for serious consideration. Some 15% to 20% of cases will show the bacilli in the urine, and they remain there during convalescence and for some time after. Dosage at the relative number of bacilli necessary to cause infection is important, and must depend much upon the age and condition of the patient. Individual predisposition is both acquired and hereditary. The main source of infection is the *patient*. Could we properly treat the urine and fecal discharges of patients the disease would soon die out. Direct contagion occurs rather more frequent than is commonly supposed, but even then is rare. Tracing the source of an infection is often difficult, and from the nature of the case proof is often wanting. Drinking water is the main immediate source of the infection; yet this fact was long opposed by Pettencoffer and his school of hygienists. Water may become contaminated from contaminated surroundings, such as soil. The present conditions in this country which permit and favor a contaminated water-supply, and the questions involved in their correct solution, constitute the most urgent problem for our hygienists today. Sand filtration probably promises the most hopeful means of solution. Contaminated soil may lead to infection of the patient in a number of ways, such as through the drinking water, vegetables, flies, swallowed dust, and the various food articles. Milk by becoming contaminated after leaving the cow is a very fruitful source of infection. It should be remembered, however, that the *patient* is the ultimate source of the disease.

Prophylaxis of Typhoid Fever.—J. S. FULTON stated that among the American soldiers in the Cuban war one-half of all the cases of typhoid fever were unrecognized as such. Our medical colleges without exception need to teach more completely the recognition of typhoid fever. Dogmatic should give way to rational instruction; didactic should give way to bedside teaching. Confusion between malaria and typhoid is far too common, and often a case is diagnosed as the former when in fact it is the latter. A careful examination of blood from many subjects thought to have malaria in Maryland during the past four years found only 5% of cases to be malarial. There appears to be a widespread delusion that malaria is a considerable cause of mortality, when the fact is that many so-called malarial cases are in reality typhoid. The commonly accepted view that typhoid fever is for the most part a disease of large cities is erroneous. Statistics quoted by the writer go to show that typhoid cases occur in almost inverse ratio to the population. Rural mortality and morbidity are nearly three times that of the largest cities, as found from the census reports; while prophylaxis can be made to a large extent effective as applied to large cities, it cannot, by its widest conceivable extension, have a marked effect on the total typhoid mortality of the country; for municipal prophylaxis is concerned only with the least part, and not in immediate relation with this least part of the general morbidity from typhoid fever. The largest prime factor in the dissemination of typhoid occurs in the rural districts, where human excrement admits of distribution by wind, water, animals and insects. Special hygiene should consist essentially in defense against excremental contamination, including the general care of water and food, screening of privies, destruction of flies and other insects, and their exclusion from dwellings, etc. Typhoid fever cases should be isolated, and all the belongings of the sick, the hands of the attendants, and the excreta, so soon as passed, should be disinfected. The need of a rapid, simple and cheap method of disinfecting the feces of typhoid patients is urgently needed.

Discussion.—J. H. MUSSER said that early diagnosis can now generally be made by culture, blood-serum, etc., and there is little excuse for early failures. The conscience of physicians, to say nothing of the public, is not awakened to the dangers of typhoid fever and its prophylaxis. Wells near privy vaults and milk are common sources of epidemics. Communities, and most of all city authorities need to be educated to the urgent demand for prophylaxis against typhoid fever. He believed that it would pay each practitioner to have a trained assistant, skilled in laboratory work, to assist him by laboratory examinations and otherwise, when fewer mistakes would be made in diagnosis. If this cannot be done, then government control of all excreta, and of all sources of contagion from the patient should be had, while the practitioner should assume only the medical care of the patient. Urotropin is a valuable remedy, and should be given all convalescent cases of typhoid to disinfect the urine and prevent cystitis. All excreta should, of course, be thoroughly disinfected. DELANCEY ROCHESTER gave the history of an epidemic which occurred in Buffalo. The immediate source of the contagion was found to be milk, and on tracing this further it was found that the ultimate source was from the hands of a workman engaged in distributing the milk and in whose family typhoid fever existed. He stated that for disinfecting the stools of typhoid patients chlorinated lime is the best agent. KRAUSS condemned lay inspection as incompetent. The use of screens for doors and windows should be made compulsory to prevent infection from flies and other insects. He believed with Fulton that many mild cases of typhoid are charged to malarial infection. FRANK WARNER stated that cities should have water purified by sand filtration, and that physicians instead of engineers should have general superintendence of the water-supply. The engineer's duty should be to get the water to the people, and there his responsibility should end. He knows nothing about the purity or impurity of water. J. N. HURTY holds that prophylaxis should be accomplished by the proper care and disposition of all human excreta, from whatsoever source. Since flies come from the excreta of horses, all dejecta from this source should be carefully cared for. H. M. SEWELL stated that individual susceptibility should be taken into consideration. The "mountain" fever of Colorado is now called typhoid when severe, and he thinks the milder cases are probably due to the maladministration of the various organic forces of the body, resulting in a general lowered vitality. Such patients are easily infected with typhoid or other pathogenic germs. E. K. ROBINS holds strongly to the view advocated by Happel that there exists in the South a continued fever which is neither malarial nor typhoid, and which resembles neither except in duration. He has seen 90 cases within the past year the average duration of which in each case was two weeks. JAMES TYSON insisted on the general advocacy of boiling all drinking water. The poor perpetuate the disease by not complying with this essential. Filtration should, of course, be demanded, but it will not completely and continuously remove the obnoxious germs. J. J. WALSH held that civic duty alone should be sufficient to prevent typhoid fever. For every case of enteric fever which occurs some one is criminally responsible. W. SHROPSHIRE held that while the boiling of water materially reduces the danger it is not sufficient to prevent epidemics, which can easily arise from vegetables, flies, dust, etc.

[To be continued.]

Section on Surgery and Anatomy.

THIRD SESSION (CONTINUED).

The Value of Enterostomy in Selected Cases of Peritonitis.—FRED. B. LUND (Boston) reported three cases of intestinal obstruction occurring after operations for appendicitis with general peritonitis. The obstruction was relieved by forming a temporary artificial anus and the opening in the intestine was later readily closed by a secondary operation. Lund made a strong plea for the use of enterostomy in many of these cases of obstruction, which are due largely to distention with gas from paralysis of the intestine. The obstruction is relieved at once if the intestine is given a chance to empty itself. In these cases a more extended operation would mean the death of the patient in many cases.

Discussion.—TINKER (Baltimore) said the method of treatment suggested by Dr. Lund and used so successfully in his cases has also been employed for a number of years by Finney in the treatment of such cases in the Johns Hopkins Hospital. By bringing the intestine only up to the abdominal wall, not drawing a loop out, a secondary operation for closure of the enterostomy opening as was employed by Lund has not been found necessary. FOLLIS employed this method in treating typhoid perforation, bringing the perforation up and suturing it into the wound before this method of treatment was reported by Escher of Trieste. The method is also valuable in the treatment of cases in which there is soiling of only a part of the peritoneal cavity. To attempt to relieve obstruction in these cases by any other method would frequently mean infecting the entire peritoneum. PORTER (Ft. Wayne, Ind.) believes that very many cases of general peritonitis die because of distention and tympanites. A number of these cases can be saved by making enterostomy early. Porter has not found it necessary to do a secondary operation for the closure of the opening. In his cases the intestinal opening has closed spontaneously. THOMAS (Spokane, Wash.) has employed this method in a number of cases of general peritonitis with fatal results in all. The indiscriminate use of an operation of this kind without first removing the main cause of the trouble he considers entirely illogical. BULLITT (Louisville, Ky.) thought that Thomas had misunderstood Lund's position. In such cases the usual method of treating the causes of peritoneal inflammation are always first employed. Then, if distention with resulting obstruction occurs later, this operation may be employed successfully in many cases in which the condition is so desperate that more extended operation would result fatally. LUND, in closing, stated that he did not advise this method for indiscriminate use, but he believed that it would turn the scale for a favorable result in some desperate cases.

Cholecystectomy versus Cholecystorrhaphy and Cholecystostomy.—F. D. SMYTHE (Memphis, Tenn.). The safety of the life of the patient demands removal of the gallbladder in malignancy and gangrene. It is important where the cystic duct is obliterated, though not demanded as life-saving measure. When operating for stones, if the gallbladder presents macroscopic evidence of disease, infection, thickening, etc., it is decidedly safer to do cholecystectomy. Gallbladders that are the seat of inflammation, cholecystitis, hydrops, with an appearance of fair health, on closer examination show infection, should be treated by removal. Other operations on the gallbladder often prove only palliative, the risk is as great as the radical treatment, which avoids relapse. Cholecystostomy and cholecystorrhaphy are not curative except in a small percentage of cases; secondary operations are frequently demanded for closure of fistula, re-formation of stones, hydrops, with its attendant pain and empyema. Where the patient's condition is extreme, incision with gauze drainage or cholecystostomy is justifiable occasionally as an alternative; rarely, if ever, the operation of election. The gallbladder is not an essential organ, and when the seat of disease requiring surgical aid extirpation should be the rule.

Dangers Attendant on Attempt at Gaining the Period of Interval in Operation for Appendicitis.—RICHARD H. GIBBONS (Scranton, Pa.). Division into subacute and acute varieties is all that is in appendicitis necessary for practical purposes. Further division or subdivision serves merely to confuse the diagnostician. An obscure or doubtful diagnosis serves to delay the operation until the opportune moment has passed. By palpation we can determine whether or not the appendix is involved by subacute inflammation. This is the refinement of McBurney's test as given to us by Edebohl's, each of which has its own value as applied to the acute or subacute varieties of the inflammatory involvement. On the recognition of the relative value of these tests and their application, and prompt action taken from the knowledge gained therefrom, will depend the relative danger of early as compared with late operation. The dangers increase as we allow time to flit away in the vain hope that lost opportunity may come back to us, which is quite unlikely. No amount of medical treatment or dietary adjustment can ever make amends for such reckless determination. Early surgical intervention should be the shibboleth of every honest medical man.

Discussion.—NILES (Salt Lake City). Whichever way we choose in selecting the time for operation, we occasionally fall into error. Niles advocates early operation as safest in most cases, however. OCHSNER (Chicago) has been frequently misunderstood in his views upon the treatment of appendicitis. So

long as the infection remains within the appendix, the appendix should be removed if the diagnosis can be made. There is a time when the infection is outside the appendix after perforation has occurred, and in these cases Ochsner finds that the treatment which he has so frequently advocated (giving absolutely nothing by mouth, neither food, liquids, nor medicine, washing the stomach and using rectal feeding) will save 97% of the cases. In all cases the appendix should be removed whether before perforation has occurred or in the cases in which his treatment has been employed, after the acute symptoms have subsided. MAYO (Rochester, Minn.): All reputable surgeons agree that practically all cases of appendicitis should be operated upon within the first 48 hours if possible. After perforation has occurred, the condition is like that of a patient some time after a snake-bite when the poison has become disseminated through the entire system. When infectious material has escaped into the abdomen and general infection has followed, it is impossible to remove the septic material by operation. In these cases the treatment suggested by Ochsner should be employed, and it will reduce the mortality from the 12% or 15% which follows if all cases are operated upon to 2% or 3%.

FOURTH SESSION.

Sunshine and Fresh Air vs. Röntgen Rays and Finsen Rays in the Treatment of Tuberculosis of Bones and Joints.—DEFOREST WILLARD (Philadelphia). The inhibitory action of light upon the growth of tubercle bacilli was demonstrated in the laboratory some years ago. While the bacilli are not directly exposed to the light when patients are treated, by being sent into the open air and sunshine very marked improvement frequently follows when such treatment is employed. Willard strongly advocates the treatment of tuberculosis of the bones and joints as well as of the soft parts by sending the patient out of doors in the sunshine, protecting their eyes from the sunlight if necessary by the use of green glasses, having them live in tents, and feeding large quantities of milk and eggs. The sanitarium treatment of disease of the hard as well as of the soft tissues will give correspondingly good results and tent life in the pine woods is especially favorable. The bactericidal action of light seems to be almost entirely in the blue violet and ultra-violet rays. In the laboratory electric light has a more powerful effect on the growth of bacteria than has sunlight, but this is not true in practice. The disadvantages of the Finsen light treatment are that a very large staff of nurses are necessary to carry it out, only a small area can be exposed, the treatment must be continued for a long time, and the cost of running a 4-lamp lens is not less than \$3,000 a year. The x-ray has also considerable germicidal power. The hard tube has greater power than soft tubes. It is very important to protect the skin in these cases. Further experience is needed to determine the best system for placing the tube, the length of exposure, and the extent of area to be exposed. All these methods are still in an experimental stage. The mechanical and other established methods of treatment should not be neglected. These newer methods promise to be of some aid and everything which will help us in the battle with disease should be employed. At least five years' experience in the use of these methods is necessary before we can say definitely what is their real value.

[To be continued.]

Section on Obstetrics and Diseases of Women.

SECOND SESSION (CONTINUED).

The Better Methods for the Repair of the Perineal Structures.—H. O. MARCY (Boston) said there is no general acceptance of any well settled method. The repair of an organ implies an accurate knowledge of the anatomy and function of the parts. The union of the transversi interdigitating with the levator ani muscle is the more common part to suffer injury. The repair of an injured organ should include its restoration so far as possible to its original normal condition. (Here followed by the author quite an exhaustive study of the anatomy of the pelvic floor, the function of the component parts and the conditions resulting from injury of these parts.) In considering the restoration of these structures attention was confined to methods found especially valuable in the author's experience. In his earlier experience he found that in resecting the posterior vaginal wall the line of division was not the mucous membrane from the underlying structures, but the attenuated posterior vaginal muscle. The separation is not difficult. Thus it is easy to differentiate the levator loop and to bring it with the ends of the separated transversus perinei into easy inspection. A further dissection upon either side of the sphincter ani makes the wound of sufficient size for easy manipulation. For holding the parts in coaptation he devised a lateral support by means of disjointed pins, which held the parts after the manner of ordinary safety-pins. Later he obtained tendon sutures from the tail of a kangaroo, which proved reliable, since when he has used only chromicized tendon sutures. The first step in the operation is to dilate the sphincter. The index and middle fingers of the left hand are introduced into the rectum and retained there. The septum is thus made tense. After a buttonhole incision in the posterior vaginal wall a special knife resects this wall, injuring neither vagina nor rectum.

Separation is often made much with the fingers. The posterior third or more of the vagina is thus separated from its attachments quite to the crest of the rectocele. This flap is held forward by an assistant. The deep sutures are carried through the transversi and levator ani muscles by a large curved needle, the eye being near the point. When drawn upon moderately these stitches coaptate the widely separated structures upon the median line and in fixation. The remaining tissues are united by a light continuous running suture. This stitch the author of the paper calls the parallel suture since the needle is inserted parallel to the long axis of the wound. In complete laceration there must be reconstruction of both rectum and vagina by separately reuniting them by continuous suture, care being taken not to penetrate the bowel or vagina. The operation is completed as in the incomplete laceration, except that the retracted fibers of the sphincter ani muscle must be freed and sutured. By free dissection and the use of buried absorbable sutures, the parts are entirely restored to their former normal anatomic condition and physiologic function. In complete laceration a large rectal tube should be inserted. The results of this operation have been remarkably good in the hands of the author of the paper.

Discussion.—GOELET (New York) doubted if deep through-and-through sutures would succeed in all hands, because, unless carefully tied, constriction would result. He considers it important to avoid handling the parts excessively by having a stream playing upon the field of operation. DUNSMAN (Missouri) believed that failure often results because of a faulty method of introducing the sutures. They should be introduced at the outlet of the vagina and should make their exit at the outlet. The desire should be to narrow and lengthen the vagina, and this is promoted by the use of two layers of sutures. HAYDEN (Indiana), while he did perineorrhaphy according to books, met failure for 15 years; he has used a flap method, catgut sutures, by which the muscles and then the mucous membrane are coaptated. CARSTENS (Detroit) believes that by the usual method nothing is accomplished further than the puckering of the tissues like a purse. He uses from two to five layers of sutures, 30 to 40 stitches. It is ideal surgery to use buried sutures. DUDLEY (New York) by diagram explained the method and emphasized the necessity of properly coaptating the parts of the transversi perinei and the levator ani muscles. GRAHAM (Indianapolis) illustrated a method of perineorrhaphy used by her with uniform success for several years.

The Repair of Cystocele by Utilization of the Anatomic Attachments of the Anterior Vaginal Wall.—E. REYNOLDS (Boston) said cystocele should be treated as other hernias. Success in the repair of cystocele rests on an adequate conception of the anatomy of the anterior vaginal wall. The wall is firmly attached at its lower end to the pubes and at its lateral edges and upper lateral corners to the pubococcygeal and allied transverse muscles. These are only reinforced by the support of the posterior wall below. During labor the entire vagina is distended. The supports of the posterior wall are distended and often lacerated, but the supports of the anterior wall are subjected to little strain during the passage of the head. After labor the anterior wall is distended, but its edges are held firmly in place. When cystocele supervenes a portion or all of the anterior wall remains distended and useless, while its attachments are usually intact. Cystocele is a hernia of the bladder through the foramen formed by the attachments of the anterior vaginal wall. It is to be treated by excision of the hernial sac—the anterior vaginal wall—after separating it from the bladder, and suture of the raw edges of the firm tissues directly to each other. The exact shape of the excised portion is less important than the fact of its excision. The form of the excision should be adapted to the case. In descent of the cervix the vaginal wall is freed high upon either side, the excision being horse-shoe in shape. He has had excellent results in his work.

[To be continued.]

Section on Diseases of Children.

THIRD SESSION.

Infant Feeding: Its Relation to the Diarrheal Diseases of Infancy.—JAMES G. MASTIN (Chicago) said that the young infant was capable of digesting starch and sugar in proportion to the secretory capacity of the pancreas, and that starches, sugars, and fats in excess tended to exhaust the secretory powers of the digestive glands. Early and repeated examinations of the milk were demanded in order that a proper mode of living might be inaugurated. The digestion of the newborn infant having been once impaired it was a difficult task to restore the normal balance. When the breast milk was deficient one or two supplemental feedings with artificial food were required, and cow's milk, so modified as to secure the same proportions of proteids and sugar as in breast milk, afforded the best substitute food. The very great value of breast feeding could be inferred from Holt's statement, that out of 1,943 cases of death from infantile diarrhea only 3% of the cases had been nursed exclusively at the breast.

Discussion.—GEORGE W. ACKER (Washington, D. C.) said he could recall many mothers who refused to nurse their offspring and who had avowed their determination to do this even before the birth of the child. In some cases he had known the

wearing of corsets to be responsible for a deficient supply of breast milk. According to Holt, only about one American woman in ten was able to nurse her infant up to the third month, yet the milk of a mother, even if poor, was better than modified or laboratory milk. JOHN C. COOK (Chicago) said that although children often appeared to become seriously ill from a single indiscretion in diet it would usually be found that this illness was only the culmination of a long period of improper feeding, by which the child's powers of resistance had been lowered. SOUTHWORTH said that while no doubt some forms of diarrhea were due to the Shiga bacillus, he believed a very large proportion of the more acute intestinal disorders were not connected with this bacillus. In some cases of Shiga bacillus diarrhea that he had observed the stools had not been very frequent nor had they contained much undigested food and the autopsies showed varying degrees of enterocolitis. TULEY said that in the case criticised by Dr. Southworth he had endeavored to preserve maternal nursing, but the nervous excitability of the mother had caused a cessation of the lacteal secretion. It should be remembered that a child was not able to digest as strong a formula of modified milk in hot as in cold weather. A new idea had been given him by an old and efficient negro monthly nurse, *i. e.*, that by feeding the newborn infant only on water for the first three days and then putting the infant to the breast the child was not only good-natured and did not lose weight, but by avoiding the early and fruitless tugging at the nipples the mother was saved from the misery of sore nipples. A. C. COTTON declared that every time one took away from the baby even a mouthful of breast milk an injury was done the little one. He said that he had previously reported about 50 cases of disturbed lactation resulting from excessive coitus. DAVIS said that, according to her experience, the application of the infant to the breast within a few hours after delivery was not a tiresome process to the mother but a physiologic one and this procedure caused the milk to come in more gradually. It was true that the little one could go a considerable time without food, yet Holt had reported inanition fever from this cause. In some of the cases reported she had taken pains to exclude coitus as a disturbing factor.

Case of Probable Gummata of the Liver in a Child of Six.—M. OSTHEIMER (Philadelphia) reported this case, which had been studied with great care.

Discussion.—R. B. GILBERT (Louisville) reported two illustrative cases. C. F. WAHRER (Fort Madison, Iowa) reported a case of obscure syphilitic disease, with heart manifestations, which had puzzled him a long time until he had finally discovered that syphilis was the underlying factor, and then everything had cleared up promptly.

Influenza in Children.—WILLIAM CARVER WILLIAMS (Chicago) took the position that influenza was a much more serious disease in children than was generally supposed. The statistics of the Chicago Board of Health were quoted to show that not infrequently in cases in which the clinical diagnosis was diphtheria the bacteriological culture showed only the presence of the Pfeiffer bacillus of influenza. The chronic form of influenza received too little attention. The author's conclusions were: (1) Children of any age are susceptible to influenza; (2) repeated relapses and grave sequels are frequently observed in cases in which the initial seizure was mild, and (3) the clinical diagnosis should always be supported by microscopic examination, as such an examination was often of great value in connection with future developments.

Discussion.—CHARLES G. KERLEY (New York) referred to the fact that he had had this year ten cases in which it had been necessary to perform paracentesis of the membrana tympani. A symptom which was usually marked in influenza was extreme prostration. He was disposed to think that some of the cases reported as typhoid fever in children were really examples of the grip. P. J. BARCUS (Crawfordsville, Ind.) commented upon the fact that when scarlet fever and influenza were prevailing at the same time the type of the former was apt to be mild. H. M. McCLANAHAN (Omaha) said that he had noticed that in these cases of grip hydrotherapy for the control of the fever was not so well borne as in other diseases. He met with more cases of ear disease associated with grip than as a complication of scarlet fever. He favored the use of quinin in doses of 6 to 12 grains given by rectal suppository. JOHN C. COOK (Chicago) said he had known two infants born of women who were ill with the grip die suddenly within 48 hours after their birth. He had also recently seen a number of cases of cerebral disorder apparently due to the grip. In several cases of the grip that he had seen at the beginning of the last epidemic there was present an eruption closely resembling that of scarlet fever. The differential diagnosis from that disease was made by the absence of the sore throat, the rapid pulse and the high temperature of scarlet fever and the presence of the symptoms of the grip. HANNA (Tennessee) also reported a case in which the eruption had been scarlatiniform. WILLIAMS, in closing, spoke of a series of cases in which the eruption had closely simulated that of scarlatina, but was not associated with the other symptoms of that disease.

FOURTH SESSION.

Capillary Bronchitis.—PHILIP F. BARBOUR (Louisville) said that the great danger of capillary bronchitis was that the lungs would be "drowned in their own secretion." The congestion, spasm and dryness present in the first stage consti-

tuted the chief indications for treatment. The second stage was characterized by increased secretion. The excessive amount of mucin in the tissues of the child made the secretion of mucus in the bronchial tubes relatively greater than in the adult. During the coughing or vomiting spells the head of the little patient should be placed lower than the body in order to get the aid of gravity. Emetics were useful, but should be employed with much judgment so as not to cause undue exhaustion. They should not be resorted to oftener than two or three times in the 24 hours. He had found strychnin useful because of its power to improve the muscular tone and so favor expectoration. It should be given freely, or nearly up to the point of producing the physiologic effect. The chief danger in this disease was from the plugging up of the bronchioles with the secretion, and the consequent atelectasis. No remedy was superior to atropin or belladonna for this purpose. Aconite tended to equalize the circulation and withdraw blood from the congested area; it also tended to prevent the extension of the inflammation along the mucous membrane. Its depressing action on the heart could be obviated by the coincident administration of digitalis.

[To be continued.]

Section on Sanitary Science and Hygiene.

SECOND SESSION.

Drainage, Sewerage and Water-supply of New Orleans.

—GEORGE G. EARL (New Orleans). An exhibition of a map of New Orleans and vicinity preceded the paper, with a history of the formation of the soil of New Orleans from alluvial deposits. He stated that 80 miles to the west of the city, 40 miles to the east of the city, and 80 miles to the south of Lake Pontchartrain was built up by the Mississippi river in this manner. Exhibition of map of New Orleans, showing streets. New Orleans is composed of 900 miles of streets, 600 miles of which were open and 400 of which were in resident districts. Thirty-one square miles of the city are well settled. The Mississippi river is often at gulf level. Description of Lake Pontchartrain, with a description of the canals or "bayous" leading to it. Position and origin of Metairie Ridge, one of the highest points in the city, stating that it was formed by alluvial deposits from a former "bayou." Twenty-three square miles south of Metairie Ridge is the district especially to be considered in a drainage system. Only eight square miles of this district has natural drainage, and nine square miles are below gulf level. The section with natural drainage is eight feet above the mean gulf level and ten feet above high-water level. The annual rainfall in New Orleans is 60 inches. On March 14, 1903, there was a record fall of eight inches in six hours. A description of the present method of disposing of sewage in the city was given, with the imperfections of it. Only a few hotels, the charity hospital, and a few office buildings have a sewerage system. These are private mains. The New Orleans water-supply is from cisterns, from artesian wells, and from the Mississippi river. The unfiltered water of the Mississippi river has been little used for drinking purposes owing to the large amount of suspended matter in it. An unsuccessful attempt was made in 1892 to filter this water on a large scale. Exhibition of a map showing the drainage system of New Orleans. There are four sets of systems corresponding to the four principal canals. That portion of the city along the river is the highest portion, and so drainage is toward the swamps. The smaller gutters of the system lead to medium-sized canals at right angles to the main drainage canals. The main canals lead to pumping stations where the water is raised to a higher level. The drainage canals of New Orleans are three times the size of those in Chicago on account of the excessive rainfall in this section. The present system is only a temporary system, as later the city will drain into Lake Borgne instead of into the swamps. A description of the means of accomplishing this are given. The drainage system will be distinct and separate from the sewerage system. There are objections to making the drainage system the outlet for sewage. In New Orleans there is no gravity which is necessary for a sewerage system and there is no natural water-supply. The necessary amount of water to carry off the sewage of the city is 100 gallons per capita per day. Exhibition of map showing the proposed sewerage system. The Mississippi river is the natural outlet for sewage and this is proposed. Exhibition of map showing the points at the lower end of the city at which sewage will be discharged and eddies in the river to be avoided. A concentration of the flow is essential. At the beginning of each lateral sewer there will be a large flushing tank to be refilled when empty and these will take the place of the natural supply. The average rate of flow through the sewers will be 2 to 3 feet per second. One-third of the soil moisture, which is very great in New Orleans, will be carried off by the sewers by leakage through the joints. At one time it was thought possible to obtain a natural supply of water from the rivers north of Lake Pontchartrain, but just the building of a canal would cost \$4,500,000, and the level would have to be 200 feet higher at the source than at the outlet in order to overcome the friction. A description of the proposed plant for purification of the Mississippi river water was given. It will cover 78 acres in the upper portion of the city

and it can supply sufficient water for a city of 1,000,000 inhabitants or its output will be 40,000,000 gallons per day. Mississippi river water at New Orleans contains $2\frac{1}{2}$ tons of solid matter to 1,000,000 gallons. A description of the plan for the distribution of the water after purification. There will be a large reservoir wherein the unpurified river water will be contained. This reservoir can supply the city for 12 hours. The water will be allowed to settle in the reservoir and 35% of the solid matter can be gotten rid of thus. The addition of aluminum sulfate, 4 grains to the gallon, will form a coagulum which will purify the water after the coagulum is settled, but the water will be run through three sand filters. Only 3% of the filtered water required to wash the filter. The system outlined never failed to satisfy all requirements for a potable water. The successful operation of such a system depends upon the simplest form, and he is positive that this plant will operate successfully.

Discussion.—SWARTS (Providence, R. I.) asked why the pumping stations in the drainage system were so far from the river. EARL replied that he found that they gave the best distribution. J. S. FULTON (Baltimore) wished to know if simple sedimentation of the water would not take the place of alum coagulum. EARL replied that it is impossible to get rid of the milky suspended matter by simple sedimentation. S. G. EGBERT (Philadelphia) said that there was no criticism of the paper and he was glad to hear that New Orleans was taking such measures to improve the sanitary condition of the city.

[To be continued.]

Section on Nervous and Mental Diseases.

SECOND SESSION.

Ambulatory Automatism.—HUGH T. PATRICK (Chicago) reported three interesting cases together with a brief review of the literature and a discussion of the nature of the trouble. He compared the etiologic relationship between epilepsy, hysteria, mental failure and degeneracy, and related cases illustrative of the different varieties of the affection. He expressed the opinion that the vast majority of cases that really deserve the name of ambulatory automatism, in which the patients traveled long distances covering a considerable period of time, and during which they performed many ordinarily complex acts, should be declared hysterical or at any rate implanted on hysterical basis.

Discussion.—H. G. BRAINARD (Los Angeles, Cal.) reported two cases of ambulatory automatism which had come under his observation. ALBERT E. STERNE (Indianapolis) stated that this trouble usually appeared about the time of adolescence. He mentioned one such case in which the condition was associated with profound hysteria. In another case coming under his observation, it was unquestionably associated with epilepsy, and the hysterical element was entirely wanting. WILLIAM J. HERDMAN (Ann Arbor) said that unquestionably a fundamental relationship existed between the mental phenomena attending epilepsy and hysteria, and those of hypnotism and what is known as double personality. They could all be looked upon as species of the same generic condition. The more we learned of normal psychology, the better would we be able to understand these various phases of a fundamental condition. LANGDON said the discussion proved that these cases of ambulatory automatism were not so rare as the literature on the subject led one to expect. He detailed two cases coming under his own observation. C. C. HERSMANN (Pittsburg) said he had seen a few cases in young, hysterical girls. F. SAVARY PEARCE (Philadelphia) emphasized the importance of trauma as the possible exciting cause in some of these cases. D. I. WOLFSTEIN (Cincinnati) said that in dealing with this class of cases the possibility of simulation should always be borne in mind. It was often very convenient to forget things and disappear suddenly. PATRICK, in closing, said he did not agree with Herdman that epilepsy and hysteria and hypnotism had the same fundamental basis. He thought they were very distinct from one another. The absence of hysterical stigmas did not prove that the case was not one of hysteria. In one of his cases of ambulatory automatism which was unquestionably hysterical there was only one exceedingly slight stigma, which consisted of an area of anesthesia about one ear. There were no ocular symptoms.

Penetrating Wound of Both Cerebral Hemispheres, with Recovery.—W. S. LINDSAY (Topeka, Kan.) gave this case, which was that of a young man who attempted suicide by shooting himself in the head with a 32-caliber ball. The bullet entered half an inch above and anterior to the meatus of the right ear, and passed entirely through the skull, penetrating both cerebral hemispheres. He made an uneventful recovery, and no sequels developed. Since the receipt of his injury the young man took up the study of telegraphy and had become quite an expert operator.

Relation of Epilepsy to Chronic Gastrointestinal Diseases.—G. W. McCASKEY (Fort Wayne, Ind.) stated that the real pathology of epilepsy was at present entirely unknown. There was probably some inherited organic defect in the nervous system, the precise nature of which could not be determined by our present means of research. The resulting instability rendered the individual liable to symptomatic phenomena

known as epilepsy. These phenomena were excited by causes which would not be operative with a healthy nervous system, and when so excited would tend to recur. Chronic gastrointestinal diseases by toxic and reflex influences excited, perpetuated, and exaggerated these phenomena. Their proper treatment was very important, but their obstinacy in yielding to treatment indicated that they were possibly in part the result of the nervous instability.

[To be continued.]

Section of Laryngology and Otolaryngology.

FOURTH SESSION.

Secretary J. F. BARNHILL read a proposal from the Academy of Ophthalmology, Otolaryngology and Laryngology in regard to holding a congress of prominent specialists of eye, ear, nose, and throat, to meet every five years.

How Far Should the Specialist in Rhinology and Otolaryngology Presume to Treat the Systemic Condition?—C. M. COBB (Boston, Mass.) contended chiefly that the specialist should treat with certain limitations the systemic condition when the systemic condition is responsible for the local disturbance in the ear, nose, or throat. GEO. F. COTT (Buffalo, N. Y.) reported three cases. First, prolonged intubation, caused by stenosis following diphtheria, occurring in a girl aged 6 years. Tracheotomy was performed alternating with intubation for six months beside three operations for stricture, with final recovery. Second, esophageal obstruction, due to an upper alveolar plate. This was located by x-ray opposite the sternal notch. Third, partial extirpation of larynx.

Early Manifestations of Laryngeal Tuberculosis: Their Recognition and Treatment.—H. H. BRIGGS (Asheville, N. C.) dealt with the relation of tuberculous laryngitis to tuberculous diathesis, and its resistance to ordinary topical treatment. Stress was laid upon the characteristic yellowish-gray color of parts in diagnosis. Prophylaxis should be secured for laryngeal lesions in cases of pulmonary tuberculosis (secondary cases). This includes removal of all abnormalities in the nose or throat.

The Immediate Relief of Hysterical Manifestations in the Larynx by Suggestion.—H. M. LOEB (St. Louis) reported several cases illustrating his plan. Suggestion is all that is done, except a general treatment for the hysterical state is employed. The suggestion should be systematized to be successful.

Discussion.—BARNHILL (Fall River, Mass.) asked that the paper of Loeb be considered in a serious light. He had himself seen good results follow similar methods. HOMER DUPUY (New Orleans) reported a case illustrating systematic suggestion. Treatment of hysterical aphonia relieved by suggestion and manipulations in vault of pharynx, where the patient was told trouble resided. There was a relapse after four months and the patient would not submit to repetition of treatment. LOEB (St. Louis) said that suggestions must not be too definite, and this was probably the fault with Dupuy's case.

Some Recent Experiences with Chronic Suppurations of the Ear.—PHILIP HAMMOND (Boston, Mass.) reported three cases: 1. Occurring in a girl who had chronic suppurative middle-ear disease for three years. A rapid cure followed ossiculotomy. 2. Case of purulent meningitis complicated by pneumonia. The patient, a man, died. 3. Was that of a boy who had pain in the right ear, with suppuration for three years. The dura was exposed over a considerable area and the operator found it in last operation dark and covered with granulation. The patient died unconscious the morning following operation. Hammond thought caries of ossicles or temporal bone more common than usually supposed.

Discussion.—HOMER DUPUY (New Orleans, La.) thought Case II of Dr. Hammond's demonstrated clearly the fact that secondary septic infections could result without serious involvement, as in this case the suppurative process was limited to the middle ear. BARNHILL (Fall River, Mass.) asked that a note of warning be sounded concerning the dangers of middle-ear suppuration. The attention of the general profession should be called to the vital danger of this condition. The danger is that little pain or other objective symptoms are displayed.

FIFTH SESSION.

The chairman appointed the following gentlemen a committee to bring about the general meeting of all societies devoted to ophthalmology, otology, and laryngology: Snow (Syracuse, N. Y.), Baker (Bay City, Mich.), and Loeb (St. Louis). John F. Barnhill (Indianapolis, Ind.) was elected chairman of the section for the following year. Otto T. Freer (Chicago, Ill.) was elected secretary, and the retiring chairman, Dr. Richards, was elected delegate of the section to the House of Delegates by unanimous vote. The retiring chairman will in future be a delegate to the House of Delegates according to unanimous agreement of the members of this section.

Distribution of bloodvessels in the labyrinth of the ear was demonstrated by GEORGE E. SHAMBAUGH (Chicago), with exhibition of some most excellent preparations and drawings, beside a fine lot of lantern slides, metal casts, of the middle-ear. Dr. Shambaugh was tendered a unanimous

vote of thanks by the section for his most excellent original work in this line.

Perisinus Abscess of Lateral Sinus, with Metastasis in Liver and Sternoclavicular Arthritis.—GORDON KING (New Orleans) reported this case, which occurred in a boy 14 years old who had had a suppurating ear since childhood. There was a discharge of thick fetid pus from the left ear, but there was no evidence of mastoid involvement. There was a development of hepatic pain, which subsided with copious evacuation of pus from bowels. Exploration of mastoid showed extradural abscess in contact with sinus wall, but no sinus thrombosis. There was also a metastatic abscess of the sternoclavicular articulation. The patient recovered completely. The case is given as an illustration of the fact that secondary metastatic infection may result from middle-ear suppurations without sinus thrombosis. Dr. King suggests that the germ-bearing leukocytes burrowed their way through the thin walls of the sinus, thus giving rise by their presence in the blood-current to the metastatic processes.

Report of a Case of Cerebellum Abscess, with Exhibition of the Specimen.—GORDON KING (New Orleans) stated that the peculiarities of this case were continued normal temperature and absence of other characteristic symptoms. Death was caused by rupture of abscess into dural space. The case was seen for chronic suppuration of middle ear.

Proof of Efficacy of Treatment by Aseptic Drainage in Acute Suppurative Otitis.—H. GRADLE (Chicago) claimed for the method that it would prevent a serous discharge from becoming purulent.

The Great Value of Drainage and Ice in the Early Stages of Mastoiditis.—SARGENT T. SNOW (Syracuse, N. Y.) stated that desirable conditions were acute cases without intracranial involvement, close observation of the patient, drainage maintained by supplementary incision if necessary, intelligent and faithful nursing. Application of ice must be constant.

Discussion.—J. T. BARNHILL (Indianapolis, Ind.) urged thorough asepsis of the external auditory canal, auricle, and drum membrane in all paracentesis procedure or other procedures on external or middle-ear. He endorsed Dr. Gradle's paper fully. He cautioned against too great conservatism in early mastoid inflammations in discussing Dr. Snow's paper. COBB (Boston, Mass.) agreed with Dr. Barnhill in opposing any great conservatism in acute mastoid conditions. D. A. KUYK (Richmond, Va.) related a case illustrating the dangers of conservatism—apply ice and hot water alternately in early stage of acute mastoid inflammation. In spite of inflammation and bulging of mastoid area in this case temperature remained normal, and the child apparently improved in every respect, but the operation disclosed a large amount of foul-smelling greenish pus. In concluding his paper Snow said he did not intend to advocate ultraconservatism.

Deformity of the Nasal Septum in Atrophic Rhinitis: Shall We Operate?—KATE W. BALDWIN (Philadelphia) urged correction of all deformities in these cases.

Section on Cutaneous Medicine and Surgery.

SECOND SESSION.

Officers Elected.—Chairman, H. G. Anthony; secretary, R. R. Campbell; delegates, J. Schamberg and G. W. Wende.

Treatment of Leprosy.—A. H. OHMANN-DUMESNIL (St. Louis) referred principally to chaulmoogra oil, which has long been in use, but only because, as a rule, it made some improvement. It never cured. He advises its administration by the mouth, hypodermically and locally. Reducing agents, such as ichthyol, do good, but do not cure. He referred to Carasquilla's serum and the antivenene of Calnette. He did not have much faith in them, but he did believe that serum therapy was the only hope.

Discussion.—SCHAMBERG (Philadelphia) reported having used antivenene in one case with no result. ROUSSEL (New Orleans) referred to one case in which potassium chlorate had apparently cured the patient. FORDYCE spoke of the spontaneous disappearance of the nodules of leprosy. He believes the prognosis better in anesthetic types.

Some Notes on the Treatment of Lichen Planus.—JOS. ZEISLER (Chicago) thought, as a rule, treatment should be based on the etiology. We know little of the cause of lichen planus. The frequency of the disease in his clinic was 3.10%. It was comparatively rare in dispensary practice. It is of most frequent occurrence in persons between 30 and 50 years. Most cases were in hard workers. Shock seems to play a great role in its production. Arsenic, while believed to be a specific by some, does not always succeed. He prefers tepid antiseptic baths, followed by cold douches along the spine. Protiodid of mercury alone, or combined with a general tonic treatment, gives good results. The x-ray also gives good results, especially in the hypertrophic form.

Discussion.—BAUM (Chicago) referred to the diminished urea elimination in these cases, and suggested that if the kidneys were looked after better results would follow the usual plan of treatment—elimination was what was wanted.

Some Clinical Observations on Chickenpox.—JAY F. SCHAMBERG (Philadelphia) was quite sure that variola and

varicella were not similar. He thought the vaccinal condition of patient and the existence of premonitory symptoms were important points in the differential diagnosis. The eruption of smallpox prefers exposed surfaces, the palms and soles being often affected, reports to the contrary notwithstanding. He referred to a case in an unvaccinated child with only a score of lesions and another with approximately 3,000 lesions. Though chickenpox is usually said to be rare in adults, he has seen a good many cases. The incubation period is longer in chickenpox than in smallpox—usually about 15 days.

Diagnosis of Cutaneous Syphilis.—ISADORE DYER (New Orleans) insists that the current method of classifying syphilis into the arbitrary divisions of primary, secondary and tertiary stages is wrong. They should be changed for teaching purposes. He never saw a student obtain a comprehensive idea of syphilis from the average textbook. The period of incubation is from 5 to 100 days. Dyer speaks of several types of chancre, many of which are double; the Hunterian chancre is the usual type and this varies much in size. He has seen them as large as a half-dollar piece. The excoriated lesion is next in frequency. The excoriated lesion with a tendency to breaking down at the edges is not unusual. Some forms cannot be distinguished from herpes. Postherpetic ulcers sometimes last two months. Has never observed the conventional copper color in early syphilis.

Discussion.—H. G. ANTHONY (Chicago) said that the copper color was often observable in early syphilids of the roseola type. He referred to a patient who had chancres on his penis, his tongue, and his fingers simultaneously. He said that one chancre did not follow the other in these cases. They all came out simultaneously, and glandular enlargement only occurred in connection with one of the chancres. He does not believe it possible always to make a diagnosis from the chancre alone. DYER, in closing, insists that the macular syphilid is never copper colored.

A Case of Pemphigus Chronicus.—WILLIAM FRICK (Kansas City) reported this case as occurring in a woman aged 52. The eruption was first seen on labia majora. Two years later a general outbreak occurred lasting two months, accompanied by chilly sensations and fever. He thought the condition rare. A large percentage of the cases recover temporarily, but the majority relapse, with a mortality of about 17%. His treatment consists of general tonics, light foods and baths rendered antiseptic by mercuric chlorid 1-5,000. The patients remained in this about 15 minutes three or four times a week. If absorption of mercury is feared baths of 1-20,000 should be used.

A Case of Lupus Vulgaris.—R. R. CAMPBELL (Chicago) reported this case, detailing certain interesting features. The case occurred in a woman 48 years old. The lesion appeared on the site of a papilloma which had been removed three months previously. It was not of the classical type of lupus. Looked much like tuberculosis verrucosa cutis. Campbell thinks that lupus is distinctly contagious; often comes from inoculation in various ways. He saw four cases in boys who had been circumcised.

Discussion.—ZEISLER (Chicago) called attention to the looseness in diagnosis of skin tuberculosis. He thinks we should stick to the classical types and not cover up shortcomings in diagnosis by the general term of tuberculosis cutis. He does not think it unusual for lupus to begin late in life. He says it is not difficult to differentiate lupus from tuberculosis verrucosa cutis. The latter usually appears on the backs of the hands. CAMPBELL, in closing, said that he does not believe that tuberculosis verrucosa cutis is always limited to the backs of the hands. This seems to be the classical type, but he has seen it on the patella and other places on the body.

[To be continued.]

Section on Ophthalmology.

SECOND SESSION (CONTINUED).

Pathology of the Cervical Sympathetic.—JOHN E. WEEKS (New York) considered the appearance of the normal ganglia as compared with the appearance of the ganglia removed in cases of glaucoma. In the latter there was excess of pigment in the ganglion cells; the cells were not round, and even appeared shrunken; there were eccentric nuclei, with occasionally only the nucleolus visible; the cells were at times vacuolated and there were "mast" cells—evidences of degeneration. The author further referred to the methods employed in the examination of the tissue.

Discussion.—BLACK (Denver) believed that it could be concluded, from the statistics presented, that the operation was one of value. The operation, however, should not be tried as a last resort, but a first one in proper cases. He had some doubts as to the permanency of the results. FREEMAN (Denver) said that one of the surgeons of that city had operated on 10 cases, removing both the superior and middle ganglions, with no undesirable results following the proceeding, with the exception that sometimes a neuralgia resulted. He considered the operation one of value. SAVAGE (Nashville) believed that the sympathetic nervous system is the power that nature has given for the correction of

astigmatism. This power to correct a portion of the astigmatism, which certainly existed in every eye, was not in Muller's muscle nor in the third nerve, but in the sympathetic system. SUKER (Chicago) thought the consideration of the physiology of the sympathetic system in relation to glaucoma exceedingly interesting; the exact physiologic tract of the fibers was not yet known; if you excised the ciliary ganglia as well as the superior there would still be some sympathetic reaction from the rami communicantes coming down through the fifth nerve. There might be restitution through the crossing of the fibers, which might explain why some of the action is restored. From being very enthusiastic some years ago he had become quite conservative. JACKSON (Denver) thought we were not yet in a position to speak definitely as to the utility of the operation in glaucoma. He thought, with Dr. Black, that excision did most in the cases favorably influenced by eserin; it will do good in cases that would be benefited by iridectomy. It was of value in cases where one eye had been lost and it was difficult to get a patient's consent to operation upon the other eye. Where the patient will not submit to iridectomy, though indicated, sympathetomy may be expected to be useful. DESCHWEINIZ (Philadelphia) said it had been impossible to read in detail the experiments upon which his conclusions had been based; he had not attempted to go into the question of the pupil-dilating fibers which do not run in the sympathetic; a great many of these fibers do not run in the sympathetic at all, but in the trigeminal. He believed, with Suker, that it would not be right to excise the middle ganglia. He did not believe it was those cases in which eserin did good that the operation was of most value, because eserin does good where the filtration angle is closed, while sympathetomy has done good in the cases where there has been doubt as to whether the angle was blocked. WILDER (Chicago) said the ganglions excised did not show any increase in connective tissue, but increase in the adventitious tissue could be seen in the coats of the vessels. He thought there was doubt sometimes as to whether we should resort to sympathetomy first or iridectomy first in the cases of simple glaucoma. He was skeptical of the value of iridectomy in true simple glaucoma, where the anterior chamber was of normal depth; and it was in such cases that sympathetomy did good. BALL (St. Louis) said that in the examinations made of the ganglia excised for exophthalmic goiter the same pathologic changes had been found.

Retinal Disease Limited to the Region of the Macula Lutea.—HENRY GRADLE (Chicago) gave a description of various types of retinal disease sharply limited to the region of the fovea or that adjoining it. The reduced central vision corresponded to a well defined, but easily overlooked lesion. The paper included the report of five cases.

Discussion.—DAYTON (Lincoln) said the first two or three cases simulated the changes that might occur in senilia; that such changes did occur in the pigment and nervous epithelium of the retina in senile cases. The condition should also be carefully studied in reference to traumatism. Such changes might also be seen as the result of the electric light. COXOR (Detroit) had observed a somewhat similar case in a physician of 40. HAWLEY (Chicago) was reminded of three cases of a similar nature, which he reported, and referred to the influence of autointoxication from the intestinal tract as a factor in the trouble.

CASEY WOOD (Chicago), Chairman of the Committee on Pathologic Exhibit, made a few remarks on the various methods of preparing and preserving ophthalmic specimens for the museum, saying in part that back in the seventies these preparations were preserved almost entirely in alcohol which so contracted it that the proper relations of the parts were destroyed. Later it became the custom to make colloidal preparations. Then Priestly Smith, of Birmingham, had introduced the method of putting them up in gelatin. To this method there was the objection made by the pathologists that no sections could then be made. He considered the gelatin method, if one used great care, the best for the large specimens. Fluids, generally formalin, were used where one desired to be able to take sections. The most beautiful method of preserving the specimen in fluid was that of Greefe, where in a formalin solution the specimen is adherent to the jar. Dr. Brown had gilded refined gold by also making minute photographs of the specimen which were attached to the jar.

Skiascopy as a Method of Precision.—EDW. JACKSON (Denver) said the first step toward rendering skiascopy a method of precision was shortening the distance between the patient and the examiner. He deprecated the method of practicing skiascopy at a distance of a meter; it could not be exact; the correctness of measurements made at that distance could not be relied upon. He advocated working at a quarter of a meter, and for this distance the source of light must be reduced to 2.5 mm. or less; there must also be a reduction in the size of the sight-hole, which should not be more than one-half the diameter of the source of light. The correctness of measurements made at this distance depended upon precision and exactness in instruments and methods. Exact skiascopy meant working at a distance of a quarter or a half meter, the accurate measurement of that distance, the adoption of the source of light, and the sight-hole to the distance, and care to bring the source of light close to the conjugate focus of the retina.

[To be continued.]

ORIGINAL ARTICLES

A CLINICAL REPORT OF NINE CASES OF FRIEDREICH'S DISEASE: HEREDITARY OR FAMILY ATAXIA SO CALLED, WITH COMMENTS ON NOTEWORTHY SYMPTOMS.

BY

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The disease now commonly known as Friedreich's disease or hereditary ataxia has a history that dates back more than 40 years, nearly as long as the disease from which it was differentiated with so much difficulty—locomotor ataxia. In 1861 Friedreich, then professor of medicine in Heidelberg, presented at the Congress of Spire a report of three cases of locomotor ataxia which showed some remarkable features, particularly in regard to the time of the development of the disease and its occurrence in more than one member of the family. It was not until two years later when he published a report of autopsies made upon some of these cases that he contended for the separation of them from locomotor ataxia, and maintained that the disease was distinguishable not only in its etiology, but in its clinical delineation. Although in the beginning his teaching met considerable opposition both in his own country and abroad, 15 years later his claims were substantiated beyond question by his further contributions and by those of his pupil, Fr. Schultze, now of the University of Bonn. Since that time the contributions from Europe, America, and Australia have been very numerous, so that today the clinical features of the disease are as well recognized as those of locomotor ataxia and the morbid changes which are found in the spinal cord after death are as constant and typical as those upon which the latter disease is dependent. Despite the considerable literature of the subject, indicative of the study that has been given to it, there is still something to be learned of the disease from a clinical standpoint and vastly more of its causation. Cases of Friedreich's disease that show variation from the classic picture of the disease should be recorded as should those in which anything bearing on the etiology of the disease can be made out. It is for this reason that I publish a report of the cases that have been seen in my clinic during the past five years.

The most striking features of Friedreich's disease are (1) its occurrence in more than one member of the family, and (2) its development in early life, usually about the time of puberty. Aside from these two factors nothing is known of its etiology. If the present-day conception of the genesis of the disease is correct, or approximately so (that it is an evolutionary defect or teratologic manifestation), then very little further can be known.

Despite the fact that the commonest designation of this disease is hereditary spinal ataxia it is most exceptional to find any history of direct transmission from parents to offspring. In some instances a direct hereditary transmission can be traced through three generations. An example of this has recently been published by Hoffman.¹ However, the distinguishing feature of the disease from the point of heredity is its occurrence in several members of the same family, and for this reason the term "family ataxia," which is sometimes given to it, is to be preferred. The explanation of the fact that the disease is not transmitted directly may be that the vast majority of the victims of Friedreich's disease are incapacitated from procreation before they have reached a marriageable age. There must be other reasons, however, for there are a number of cases on record in which the disease did not develop until after early maturity;

for instance, Case VII of this series. The patient, a married man, has children, and his sister, a victim of the disease, is also married. In contrast to this there are many cases in which there is no evidence whatever of neuropathic taint of any kind in the family history, such as in Case III, a very intelligent young man who had carefully inquired into his ancestral history in order that he might be able to trace the origin of his own disease.

"Isolated" cases of Friedreich's ataxia, *i. e.*, cases in which no neuropathic taint in the ancestry or in the collateral family history can be obtained, are by no means uncommon. Ladame gave special attention to this in an excellent critical digest on Friedreich's disease published in *Brain* in 1890, and since that time a number of cases have been published. No adequate explanation of the occurrence of these isolated cases has as yet been given.

As in every other chronic disease, one hears now and then of contemporaneous event or occurrence attributed as the cause of the disease. Thus, exposure to cold, injury, fright, the occurrence of the specific fevers and infectious disease, have all been so attributed and spoken of by more than one writer upon the subject but scarcely any one attaches importance to them.

Friedreich was of the opinion that the disease developed at about the time of puberty in the majority of cases. Gowers states that the majority begin usually earlier than this, at the seventh or eighth year. There is no dearth of cases in the literature in which the disease began after 20. On the other hand, Fraser² reports a case with autopsy in which the signs developed first in infancy.

The distinguishing clinical features of Friedreich's disease are: 1. Ataxia of all purposeful movements and of station; incoordination due to the loss of the sense of equilibrium. 2. Loss of the tendon-jerks; diminished myotatic irritability and muscular weakness which may amount to paresis of the lower extremities. 3. Deformities of the spine, usually scoliosis, lateral curvature and deformity of the feet, commonly pes cavus, with extension of the big toe. 4. Nystagmus, static and dynamic. 5. Disturbance of articulation and intonation. 6. Features that distinguish it from tabes or locomotor ataxia: absence of lancinating pains, intactness of sensibility, normal pupillary reactions, no disturbance of vision and noninvolvement of the urogenital sphere.

The ataxia is the most striking feature, although not infrequently the deformity of the spine occurs before the ataxia. The ataxia of gait of Friedreich's disease is markedly unlike that of tabes. The patient with this form of disease walks with the feet wide apart, the steps varying in length with the amount of lateral deviation. When the patient attempts to walk a straight line a distinct reeling is added to the gait that patients with tabes do not have. In other words, the cerebellar element in the gait of Friedreich's disease is very conspicuous. Patients with Friedreich's disease manifest the ataxia in standing, but in many instances the instability is not increased by asking them to close their eyes. This is well illustrated in Case I. When the patient stands there is a constant attempt at balancing, the muscles of the different parts of the body being in a state of irregular contraction. To this condition of affairs the name titubation is usually applied.

The ataxia shows itself in the upper extremities nearly as often as in the lower, and in fact, every part of the body which manifests purposeful movement may show it. In the hands it is first made evident by the patient doing badly acts requiring fine coordination, such as threading a needle, buttoning the clothes, etc. It is more uncommon in the face than in other parts of the body. One very remarkable feature about the ataxia of Friedreich's disease is that it is made worse by protracted rest, and in one of my patients it is very much worse on arising than in the afternoon and even-

times indistinct, the tendency being to lop off syllables. The musculature of the body is flabby, but there is no definite atrophy of any muscles or groups of muscles. The palm of the left hand seems thinner, but this is undoubtedly due to the deformity going on in the hand. The deep sensibility is profoundly impaired in all four extremities. Tactile, pain and temperature sensibility are normal, and there is no astereognosis. There is general hypotonia.

The patient makes no complaint now of pain, or in fact of any other symptoms. There is no disturbance of the sphincters except that occasionally she does not hold the urine so well as she did formerly. So far as can be learned there is no difficulty in starting the stream. The patient's intelligence is quite equal to the average girl of her age who has had no educational advantages.

The mental condition of all my patients was normal save, perhaps, in one, and in his case the deficiency was emotional rather than intellectual. He (Case IV) was irritable and explosive at times and below the normal mentally. Two of my

patients of this series were exceptionally bright. One, a young draughtsman, educated himself by his own efforts, and had taken a leading place in his profession. Another, a young girl, graduated from the grammar school at an uncommonly early age. The pure type of Friedreich's disease, as a matter of fact, involves no mental change. When symptoms of mental enfeeblement occur with symptoms indicative of Friedreich's disease, as they occasionally do, it may be taken for granted that we are dealing with a disease that involves the higher cerebral centers, and it is very questionable whether these cases should be



Fig. 3.



Fig. 4.

classified as Friedreich's disease at all. Such, for instance, are the cases reported by Norman,³ under the title, "Three Cases of Friedreich's Disease Associated with Genetous Idiocy;" Bouchaud,⁴ "Two Cases of Allied Diplegia of Friedreich's Disease;" Vinaj,⁵ myself,⁶ and Higier,⁷ to name only a few of those who have placed atypical cases of Friedreich's disease on record. In hereditary cerebellar ataxia, if we admit that there is a group of cases to which this name should be given, mental enfeeblement is not infrequently present, but cases in which symptoms of Friedreich's disease occur in connection

with profound mental accompaniments should rarely be classified as Friedreich's disease. It seems to me that many of the cases so reported are cases of either hydrocephalus or infantile cerebral palsy.

The following case is worthy of note for several reasons, but particularly because it illustrates that the mode of advance of the symptoms may be quite unlike what they are usually stated to be, viz., a steady progress of the disease:

CASE III.—J. K., aged 26, of German birth, and by occupation a draughtsman, says that he or his parents first noticed the symptoms of his present disease when he was about 10 years old. The symptoms consisted of weakness and uncertainty of the left foot and of a gradually developing deformity, which went on until the present condition of the foot, viz., typical pes cavus, hyperextension of the big toe and flexion of the other toes developed. As a boy, and indeed up until the past two years, he has had attacks of "rheumatic" pain in the legs and occasionally in the upper extremities. The pain is described as a sudden sharp aching pain, which comes on first in one place and then in another, and is more or less paroxysmal in its manifestation. At times, however, he would be free from such pain for a month or more, at other times he would have it very frequently for two or three weeks. The pain was not of a darting lightning character such as tabetic patients describe, but an ache like a dull toothache. As a boy he was not able to participate in the games and sports of other children because of the uncertainty of gait and what he considered to be loss of strength in the left lower extremity. His disease, however, did not seem to make much progress until he reached 21 years, when he noted that his right foot was becoming deformed owing to the gradual development of a condition similar to that of the left foot. At this time he remarked that he stumbled and fell very frequently unless he kept his eyes carefully fixed on the surface on which he was walking, and it was necessary to hold the banister in going up or down stairs, and to have aid when walking on a narrow surface such as a plank. Two years before I first saw him tenotomies were done upon his feet by an orthopedic surgeon, and since then he thinks he has been much worse, especially the incoordination of the upper extremities. Until that time he had been able to follow his occupation, but since then he has very rarely been able to make sketches because of manual uncertainty. He says if he is alone and very quiet he can use the hands occasionally as well as at any time during the past five or six years.

Examination shows a markedly ataxic gait; distinct ataxia of station; absence of the knee-jerks and ankle-jerks; scoliosis and lateral curvature of the spine, the deformity being most conspicuous from the third to the seventh dorsal vertebrae; pes cavus of both feet, the left being very much more deformed; distinct lateral nystagmus; pupils equal, react, medium size, contract promptly on exposure to light; visual fields, optic nerves and retinas normal; ataxia of the upper extremities; tremor which is evidenced most exquisitely in the writing; slight disturbance of speech in the shape of indistinctness of articulation of words that contain many consonant sounds; mentality intact.

The patient's personal history was that he had had measles, scarlet fever, and whoopingcough as a child, but since his late childhood he had not been ill. He was wholly unable to account for the existence of his present trouble. His parents, in whom there was no consanguinity, were living and had had eight children, of whom this patient was the sixth. Nothing similar to the disease which the patient has was to be found anywhere in the family.

Ten years ago Marie⁸ discussed some of the published cases of Friedreich's disease, especially those of Sanger Brown which, although it seemed necessary to classify under the heading of Friedreich's disease, were to be distinguished from it by certain important features, and especially by exaggeration of the tendon-jerks. He pointed out that these cases might legitimately be taken to indicate a lesion of the cerebellum, and possibly also of its afferent tracts, rather than disease of the posterior and lateral columns of the spinal cord as in Friedreich's disease. Marie proposed that the name "hereditary cerebellar ataxia" be given to these cases. The symptoms of this disease he maintained were in brief: Slow and gradual development of ataxia in the lower extremities; occasional pain in the legs and arms; ataxia of the upper extremities, which shows itself first about three years after the onset of the disease, and as a rule, contemporaneously with affection of vision and speech; preservation or exaggeration of the tendon-jerks, and in some cases mental enfeeblement. The disease runs a very protracted course, death occurring usually at an advanced age and from some intercurrent disease. It is

thought that hereditary cerebellar ataxia shows itself at a more advanced age than hereditary spinal ataxia, but like the latter, it is a family disease. The suggestion of Marie was that there is a similar degenerative process at work in hereditary cerebellar ataxia and hereditary spinal ataxia, the former involving the cerebellum exclusively or mainly and the latter the cord. There can be no doubt of the existence of cases that conform to the clinical description of Marie, Nonne, Londe, and others, and of such cases in which atrophy of the cerebellum is found postmortem, but it is doubtful whether they should be given other recognition than as a branch of a degenerative family disease. Although there have been a number of contributions made to this subject since Marie's article, such as those of Nonne, Brissaud, and Londe, to mention no others, the existence of hereditary cerebellar ataxia as a distinct disease has never been generally admitted. Of the following two cases one might put, if we subscribe to the views of Marie, the first in the category of hereditary cerebellar ataxia and the other in that of hereditary spinal ataxia. Yet no one can doubt for a moment, I think, that they are examples of the same disease:

CASE IV.—The first is that of a girl of 17, born in this country of Italian parents, who noticed when she was 15 years old that she was weak in the legs and could not walk straight. This weakness and uncertainty came on gradually, so that it was very difficult for her or her parents to fix the exact time of its first occurrence. In addition to the weakness of the legs and uncertainty of gait, she has complained during the past two years of "stinging pain" in the knees, in the back, the thighs, and the ankles. Sometimes this pain lasts for hours, creeping up from the legs through the back, and at times she complains of a sore feeling in the back of the head. Her most distressing symptom, however, is disturbance of locomotion. Her gait is profoundly ataxic. She staggers in a jerky, uncertain fashion in walking, and has difficulty in standing alone when the feet are in apposition, even when they are separated so as to give a wide base of support to the body. She is constantly going through balancing movements; in other words, titubation is a pronounced symptom. During the past six months ataxia has developed in the upper extremities. There is no functional disturbance of the bladder or bowels, and no complaint of girdle sensation or paresthesia. For a month or so before coming to me she had been getting deaf. Examination revealed, in addition to the ataxia of station and the incoordination of the upper extremities just mentioned, deformity of the feet and of the spinal column characteristic of Friedreich's disease, *i. e.*, pes cavus with hyperextension of the big toe and lateral curvature of the spine; lateral nystagmus; disturbance of articulation, best characterized by the word inebrious; and exaggeration of the knee-jerks with normal response of the ankle-jerks and front tap of the leg, and absence of objective sensory disturbances. In other words, she has the typical objective accompaniments of Friedreich's ataxia, save the exaggeration of the knee-jerks. While under observation she complained very much of attacks of vertigo, and when they came upon her she reeled and pitched very much like a person grossly intoxicated. This completely incapacitated her from moving about. These attacks occurred sometimes every day and sometimes not for several days, and were distinctively superadded to her other symptoms. Since their occurrence she has been getting progressively deaf. Examination of the ears by Dr. J. F. McKernon reveals that her upper tone limit is zero, and that there is marked diminution of lower tone; bone conduction is minus. Physical examination disclosed a moderately contracted drum membrane with an area of congestion over and around the oval window. In other words, a pseudo-Ménière's symptom-complex was engrafted upon the symptoms of Friedreich's disease. Under the administration of pilocarpin in moderately large doses and local treatment these symptoms abated.

CASE V.—Before commenting upon this case I shall recite briefly the history of her brother, a boy of 10, in whom the symptoms of Friedreich's disease are beginning to show themselves. Between the boy, whose history I am about to relate, and the girl just spoken of, there were two pregnancies, one of which resulted in a child that died soon after its birth, the other in a boy now aged 14, who is quite well. The symptoms of the disease showed themselves first in this boy when he was 9½ years old, and consisted of what he describes as weakness of the ankles and inability to walk straight. In addition to this he maintains that the right knee hurts him at times and that occasionally he has a disagreeable sensation "like electricity" going from the knees to the ankles. He cannot run as other boys do on account of turning over of the ankles and giving way of the legs, which causes him to fall heavily. His parents and his sister state that he is becoming progressively weaker and more uncertain. Lately, his teacher has noticed that his handwriting has become tremulous. Examination reveals

ataxia of station and gait of the upper extremities; complete absence of the knee-jerks, both on ordinary tests and with reinforcement; absence of the ankle-jerks when they are tested in the ordinary way, but elicited on reinforcement; distinct lateral curvature of the spine in the dorsal region; lateral nystagmus, and slight but distinct disturbance of articulation. In other words, a most exquisitely developed picture of Friedreich's disease at its onset.

It is unquestionable that the tendon-jerks and ankle-jerks are usually absent in cases of Friedreich's disease; but it has been amply demonstrated that there are cases of hereditary spinal ataxia in which the knee-jerks are present or exaggerated. For instance, there can be no doubt, I take it, that these two cases of which I have just given a brief synopsis are two cases of the same disease. In the first the knee-jerks are slightly exaggerated and the ankle-jerks are normal. In the second the knee-jerks are completely obliterated and the ankle-jerks are absent, but can be elicited on reinforcement. The fact that the ankle-jerks are disappearing in the second case tends to show that the tendon-jerks will probably later be completely absent in both cases.

Tressider⁹ has published the typical history of a family with Friedreich's disease in which the knee-jerks were completely absent in one patient and present in the others, which goes to show that the disappearance of the knee-jerks is sometimes not one of the early symptoms. There are a few other cases in the literature in which a similar condition has been made out. For instance, in Senator's¹⁰ first case the knee-jerks were found to be present one year after the onset of the illness. A year and a half later the right knee-jerk was absent, the left could be elicited only on reinforcement. The sister of this patient who had had the disease for 27 years had no patellar tendon-jerks. Brock¹¹ has published a similar case of a man of 27, in whom the knee-jerks were present, but they were absent in the brother who is probably afflicted with the same disease. Erb,¹² Mendel,¹³ and Ewart¹⁴ have also spoken before medical societies of cases in which the knee-jerks were exaggerated.

Gladstone¹⁵ has related a typical case of Friedreich's disease in which the knee-jerks were present and there was ankle-clonus on one side. A brother of the patient suffered from the same disease and in him the knee-jerks were absent. Nolan¹⁶ has reported under the title of "Three Cases of Friedreich's Disease Associated with Genetous Idiocy" a form of family disease which has some of the clinical features of Friedreich's disease and in each case of which there was ankle-clonus and exaggerated knee-jerks. These cases have not been considered as belonging in the class of Friedreich's disease by those who have commented upon them and very properly so, as they were characterized by features that have no place in the symptomatology of the latter disease, such as enlargement of the thyroid, idiocy, and congenital manifestations of the disease.

Some writers are inclined to classify the cases presenting the symptoms of Friedreich's disease in which the ankle-jerks are exaggerated under the heading of hereditary cerebellar ataxia. For instance, Magnus¹⁷ reports the clinical history of two brothers, in one of which he diagnosticates Friedreich's disease, while in the other, with exactly similar symptoms save that the tendon-jerks are exaggerated, he diagnosticates hereditary cerebellar ataxia. It is not easy to understand this, because there is an insufficient number of cases on record in which the knee-jerks are exaggerated to justify making such a diagnosis.

The occurrence of the symptoms of Ménière's disease complicated the clinical picture in the first of these two cases, but the superaddition was easily recognized, particularly as the manifestation of the latter changed the character of the symptoms so materially. Some days she could not walk at all without falling, and her efforts at walking were those of a person grossly intoxicated. At other times, and when under the influence of pilocarpin, this and the profound vertigo would disappear,

leaving the uncomplicated symptoms of Friedreich's disease. The occurrence of the Ménière symptom-complex in this patient may probably be looked upon as a coincidence.

As an example of the disease which does not develop until maturity, the following case may be cited :

CASE VII.—A. M., a farmer, aged 27, a native of Scotland, noticed about six years before consulting me that he inclined to wobble when he walked. This bothered him at first at inter-

*Ground the rugged rock
The ragged rascal ran.
The ragged rascal ran.*

Fig. 5.

vals only. He married when he was 23, and considered himself quite well at that time. He says later it was difficult at times for him to convince his wife that he had not been drinking. One year ago he came to this country, and from that time he dates his illness, which he describes as an uncertainty when standing and walking, and a slight "fulness" of speech. The uncertainty of gait and station is much worse in the dark and when he attempts to pass through narrow places or places where there are many people. During the past six months his right hand has become affected. When he goes to take up anything now he does it with a clutch, and oftentimes misses it. Examination shows that the knee-jerks are absent when tested ordinarily, but they can both be elicited very slightly on reinforcement. The left knee-jerk does not always respond to the blow of the hammer when reinforced, but the right does. Both ankle-jerks are absent. The plantars are elicitable and the right might be described as an atypic Babinski. The extension of the big toe and associated flexion of the small toe is abrupt,



Fig. 6.

and at the present time, in her twenty-ninth year, she is bedridden.

In some cases there is no history of a similar or dissimilar nervous disease in the family so far as the physician can make out, but in some of these cases the disease may develop later in other members of the family. An excellent example of such a state of affairs is furnished in the following history :

CASE VIII.—A butcher's boy, aged 14, came under my observation first in April, 1900. He was the eldest of three children, the other two being quite well and strong. Their ages are 6 and 4 respectively. One brother and one sister are dead, the sister having died of acute disease, the brother having been killed by an accident. The father and mother have no knowledge of any similar disease in their family.

He was born of a difficult labor without instruments or apparent untoward effect. He thrived as an infant and at 15 months was able to walk securely. When he was about 4 years old the parents remarked that he fell easily and frequently and that he was clumsy. This they attributed to fatness. This uncertainty and clumsiness increased as he grew older. He was never able to indulge in the feats and sports of other boys calling for equilibrium. He says he could not walk a fence, jump on one foot or learn to bicycle. When he was about 10 he first became aware that he could not walk as securely in the dark as in the light. His teacher remarked that he could not hold his pencil steady enough to make letters. Nevertheless he learned to write fairly well. Unsteadiness of the cephalic extremity was first noted when he was about 10. There has been no complaint of pain or functional disturbance of any kind save that of the extremities. The special senses functionate normally. There is no diplopia, vertigo, or ringing in the ears.

Examination shows absence of the knee-jerks, ankle-jerks, and triceps-jerks; pronounced pes cavus with hyperextension of the big toe; marked titubation on attempting to stand with the feet together and increased by closing the eyes; pronounced lateral curvature of the spine and projection of the left scapula; speech hesitating and drawling; mentally he is bright, of good memory, but his disposition is infirm. He is irritable and cranky and liable to explosions of temper; pronounced ataxia of locomotion, the feet are slapped on the ground, the stride is very irregular, and the feet are widely separated. The ataxia of the upper extremities is well marked. The accompanying illustration of his handwriting at this time gives an idea of the impairment of coordination in the upper extremities (Fig. 5). The pupils are equal, of medium size, and respond promptly to-

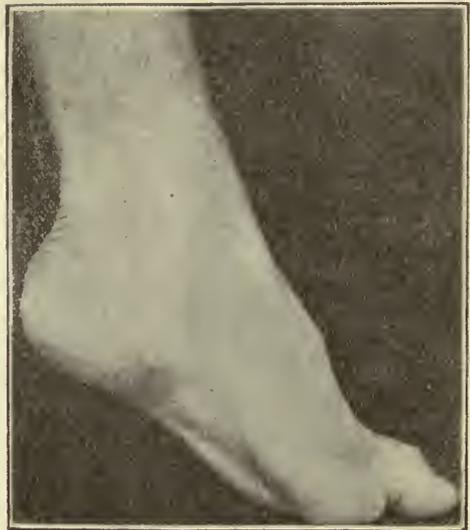


Fig. 7.

light. There is no nystagmus and no limitation of the visual fields. The left side of the face is innervated more actively than the right. The palatal, pharyngeal, abdominal, cremaster, and plantar reflexes are lively. Irritation of the sole produces lively extension of the small toes and flexion of the big toe. There is complete absence of cutaneous sensory disturbances, but the deep sensibility is profoundly disordered.

Examination of the patient, April, 1903, *i. e.*, three years after the above status was obtained, showed that there was only marked intensification of all the symptoms. No new symptoms had developed. He is now unable to get about without assistance and he can stand only by clinging to something. Ataxia of all four limbs in the dark. The patient did not complain of anything. There was no disturbance of the special senses or of speech. The functions of the bladder and bowels were normal, there being no hesitancy in starting the stream.

The deformity of the spine for which he has been wearing a corset has got very much worse (Fig. 6), and the deformity of the feet (pes cavus, retracted big toe, and flexed small toes) has intensified (see illustrations, Figs. 7 and 8). The reflexes and tendon-jerks remain the same as at the original examination. The patient is well nourished, the muscles are well developed, his circulation is vigorous, and he makes no complaint, save that the extremities, particularly those of the left side, are heavy as if they were loaded with lead. There is no indication of mental deterioration. Formerly his head seemed disproportionate in size to the body; now it does not. The asymmetry

of the face which was noted as being very slight three years ago is now striking, both in emotional display and when the face is in repose. Speech has become uncertain and characteristically inebrious. There is no disturbance of the sphincters or of the special senses. In brief, he presents now as he did three years ago the typical picture of Friedreich's disease.

About a year after this boy first came under my observation Dr. I. Abrahamson, my chief of clinic, in whose care he had been placed, noticed that a brother 7½ years old was afflicted in a similar fashion. I am indebted to Dr. Abrahamson for the history of the patient, whom I have recently examined.

CASE IX.—The only noteworthy thing about this boy's infancy is that he did not walk or talk until he was two years old. His emotional and intellectual possessions have always seemed quite normal. When he was 6½ years old it was noticed that he was becoming unsteady on his feet. This uncertainty was most evident in the morning on arising, on going downstairs, on walking. Speech is not affected. The disease is apparently progressive.

Examination shows a well-nourished, well-developed child, like the brother, whose history is related above; the head is rather large for a child of his years, has a number of somatic stigmata of degeneracy, the ears are particularly of a degenera-



Fig. 8.

tive type; the chest is of a rachitic type; the spine is irregular, scoliotic, and the feet are to a moderate degree in a state of equino varus, the right being more advanced. When he walks the feet are kept wide apart, and in locomotion they are brought down in a flapping way, and he inclines to walk on the outside of his feet. His station, which is unsteady, is made more so by closing the eyes. The knee-jerks and ankle-jerks are absent, both patellar and Achilles tendons are soft. The plantar-jerk is present on both sides, of a flexor type on the right side, and extensor on the left. The pupils are equal, responsive to light, there is no limitation of the visual fields, and the optic nerves are normal when seen with the ophthalmoscope, the discs being somewhat more red than normal. Lateral excursions of the eyeball are accompanied by nystagmiform twitching and a coarse tremor of the head consisting of a few jerks of the head in the same direction as the head is turned. There is a slight coarse, irregular twitching of the face and tongue. There is very little ataxia of the upper extremities. The special senses are normal. Tactile, thermal, and pain sensibility are normal, deep sensibility is disordered more in the upper than in the lower extremities.

These two cases offer little to comment upon save that they are fairly typical examples of Friedreich's disease occurring very early in life, the first as early as the fourth year and in the second at the sixth year. The

rapidity with which the elder brother has become incapacitated is greater than in the average case. These cases may all be looked upon as fairly typical examples of Friedreich's disease. They were observed in one neurological clinic and within a comparatively short time, which tends to show that the disease conforms to the classic type with some frequency. Although the literature contains the records of many atypical cases, histories such as those above related show how uniform the clinical features may be in one case after another. That the difficulties of distinguishing it from a few other diseases, such as Huntington's chorea, multiple sclerosis and congenital or early acquired inflammatory or sclerotic disease of the brain are often very great, there can be no doubt. That side of the subject I intend to take up later. I wish here only to point out the uniformity of the clinical manifestation of the disease and some uncommon clinical features, such as preservation of the tendon-jerks, pes planus, manus cavus and an uncommon complication, the Ménière symptom-complex.

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PRESENT STATUS OF CONGENITAL DISLOCATION OF THE HIP AND THE BLOODLESS REDUCTION.¹

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The invitation to continue a discussion of this subject seems somewhat out of place, for so much has been said and written on this topic within the past six months. My friend, Dr. Wilson, however, thought that the Fairfield County Medical Society would be interested, and I am too keenly sensitive of the honor to decline.

Prior to the summer of 1902, the general profession took little interest in congenital dislocation of the hip, and simply accepted the teachings of the textbooks on surgery as final. For the past 10 years orthopedic surgeons themselves have leaned strongly toward the views thus expressed because of the difficulty of perfecting an operation that would yield satisfactory results. When cases have been presented to illustrate a cure, or at least a great improvement, there have always been a number of critical surgeons who scrutinize so closely that the reporter felt like apologizing for the work he had done. Those surgeons who have been contented with the deformity as it exists have always maintained that as the child grew older there was no increase in lameness or even in disability. The views were entertained that the child acquired a greater facility in walking, and apart from the lordosis, or in-curving of the spine, there was nothing to interfere with prolonged exercise. When the deformity was bilateral it was believed that the patient would, as the years went by, cultivate a grace of movement that was at times attractive.

In the early years of my own professional life I was assured by older orthopedic surgeons that a lady who

¹Read at the annual meeting of the Fairfield County Medical Society, Bridgeport, Conn., April 14, 1903.

had double dislocation of the hip danced exceedingly well. During the last decade, however, very good men have claimed that as the patients grew older and heavier, the disability increased and that it was in evidence that patients who could formerly walk 8 or 10 city blocks with ease, could, as they grew older, walk only 2 or 3 blocks. It is true that these assertions have been maintained by men who were fond of operating, and those who maintained different views have obtained many histories of cases which would seem to prove their own views. It is a fact, however, that as adult life is reached, patients with unilateral and bilateral dislocations do tire more readily and seek relief on this account.

The Röntgen ray has aided materially in explaining these different histories, for we find all kinds of distorted femoral heads and femoral necks. Those heads that are pointed and necks that are almost continuous with the shaft of the bone, would naturally strain the gluteal muscles and cause greater disability as the patient's weight increased; while those heads which are well-formed and those necks which have not changed their relationship with the shaft would naturally cause less inconvenience in walking, so that it remains for the surgeon to determine in a given case what the prognosis is after a careful examination by means of the radiograph.

Professor Lorenz professed his ability to determine this by means of palpation and functional testing of the joint. It is quite easy to give a prognosis after so long a study of the subject as this distinguished surgeon has enjoyed. The extraordinary interest developed by his visit to this country last winter at least shows that the parents of these children are not as well satisfied as the profession is with a lifelong disability. Long before the bloodless method was demonstrable we found in the city of New York those who were willing to subject their children to the open method time and time again in the hope of reducing the lameness and the shortening. There are many parents today satisfied with the results, although the surgeons themselves feel that the best has not been attained. A hip partially ankylosed is sometimes better than one so much relaxed as the congenital hip.

The demonstrations made by Dr. Lorenz during his tour were looked upon by a great many physicians and surgeons with a certain degree of reservation. Even the dramatic slipping of the head of the bone from one position to another failed to convince, and men are waiting all over the country for the six or eight or ten months to elapse before the demonstration is accepted as satisfactory.

The details of the reduction have been so well taught by the champion of the bloodless method that it seems hardly worth while to repeat these on the present occasion. It may as well be repeated, however, in order to emphasize the facility with which the reduction can be accomplished in children of suitable age. Before we had an opportunity of witnessing the procedure we followed the earlier teaching, namely, firm traction with counter traction in the extended position, resorting to a folded sheet passed through the perineum and held over the head of the table while traction was made by one or two assistants for several minutes. The next step was the abduction of the limb and rotation outward, but in many instances, from my own observation, the adductors were not completely broken down, and the forced flexion of the limb was not carried to the extent which we learned later was a necessary factor in the reduction. We have learned that these later steps have been developed within the past two or three years, and at present the forced flexion, preceded by complete abduction of the limb until all the muscles are torn across or fully stretched, constitutes the main feature of the operation.

The cardinal principle, however, is to stretch thoroughly the capsular ligament after the muscles have been thoroughly broken down. There is in reality very little of the enormous traction employed, because the

other movements get the head down opposite the rudimentary acetabulum, enabling one, by strong leverage power with a wedge-shaped block just back of the trochanter major, to effect the reduction; that is, the appearance of the head under the femoral vessels midway between the anterior superior spinous process and the pubis. After this is accomplished it is necessary to stretch the capsule still further, and just here comes, in my own judgment, an element of danger. From the number of cases in which paralysis of the quadriceps-femoris and leg muscles have been developed it would seem that this final stretching is not only unnecessary, but extremely hazardous. It is true that a peripheral paralysis does, as a rule, yield in the course of a few weeks, yet I have in mind now one or two cases in which two or three months have elapsed, and yet the paralysis remains. The plaster-of-paris spica bandage can be just as well applied as soon as the head slips into position, and the use of the limb begun a few days later will contribute largely to the encapsulation. If the paralysis persists for a long time we lose the function-bearing factor so essential to the thickening of the tissues around the head in the new position.

Two weeks ago I removed the plaster from a patient operated upon by this method last July, and I found no slipping up or down, and the head of the bone is certainly in good position. This patient for the past six months has been walking very actively in his plaster-of-paris, and I am satisfied that a cure is established. The temptation to exhibit this patient, in order that you might see for yourselves how perfect a result is promised, was hard to resist. We have at present two or three patients in the wards of the Hospital for Ruptured and Crippled in a double plaster-of-paris bandage, applied in December and January after reduction of bilateral dislocation, and it would interest you very much to see them walking like an extravagant case of bowlegs. Our plan was to put these children at first astride a small chair on which were ballbearing castors, and they soon learned to wheel these chairs about the wards bearing their weight on both limbs.

The fear was entertained at the time Lorenz was giving his brilliant demonstrations that attempts would be made to reduce hips in patients beyond the age limit, namely, 7 or 8 years, and I am free to admit that I have yielded to this temptation with a few unsatisfactory results. The question, then, is what shall we do with these older patients? What was taught and what we are now doing at the hospital is to stop short of complete reduction, get an anterior reposition, contenting ourselves with placing the head under the anterior superior spinous process, and after the application of the plaster-of-paris in the adducted position of the limb, secure by the weight-bearing function encapsulation.

In some instances when plaster has been removed for observation we find that all is going well and the hope is entertained that the gait and attitude will be greatly improved. We certainly do away with this extreme lordosis and get a better lodgment for the head. Great improvement has been obtained in a child 12 or 13 years of age by enforced hyperextension of the limb a few hours every day. The procedure is as follows: The patient is placed prone in bed, the body and pelvis resting on a kind of swing, the anterior surfaces of the thigh resting on one another, while a weight varying from 2 to 10 pounds rests on the buttocks. We have constructed a pair of old-fashioned saddlebags with shot in each end, and in this way are enabled to carry out this principle with very little discomfort.

It is interesting to note that the surgeons on the hospital staff are admitting very few patients over 8, and when such patients are admitted we resort to a preliminary treatment of traction by weight and pulley in bed. We begin with 5 pounds and gradually increase this to 35 or 40 pounds, reaching this limit at the end of three or four weeks. Such a method enables us to drag

the head of the bone down nearer the plane of the acetabulum and make reduction at the time of the operation a little less difficult.

There is really no excuse for an error in diagnosis after so much has been said and done for congenital dislocation of the hip. It is only necessary for the practitioner to bear in mind that a history which tells him of lameness so soon as the child begins to walk and an absence of pain such as belongs to hip disease are sufficient to enable him to diagnose a congenital dislocation of the hip before the fourth or fifth year. I can readily understand how a poliomyelitis developing before the child begins to walk may mislead one and cause an error in diagnosis. Yet the history of poliomyelitis ought to be sufficiently well known by any physician to enable him to avoid an error. There is one other affection which is sometimes confounded with congenital dislocation, but even this, namely, an acute arthritis of infancy, has a history of acute pain and disability, even if suppuration is not present. When any reasonable doubt exists the Röntgen ray will assuredly help one in making a differential diagnosis. It is no compliment to the intelligence of physicians to insist on a thorough examination of every case of disability at the hip, and I am quite sure that all will agree with me that errors in diagnosis are very infrequent when the physician is in the habit of a routine, thorough examination of his patient.

In conclusion, I beg to present for your consideration a few points that seem to me paramount: 1. Do not rest content in a case of hip lameness in a young child until you have made a thorough examination of the patient and have obtained a full history of the case. 2. The diagnosis once established, aim to effect a reduction before the sixth or seventh year. It is fatal to postpone operation. 3. In patients beyond the age limit fortify yourself with a Röntgen ray picture in order to determine the exact position of the head, the shape of the same, and the relationship which the neck sustains to the shaft. 4. Do not make long attempts at reduction in patients over 10. 5. Bear in mind the dangers which Dr. Lorenz himself has warned against, namely, too extensive laceration of the soft parts, paralysis which may or may not yield to time and treatment, the fracture of the femur or the pelvic bones, rupture of an artery, sometimes the femoral.

THE FORCIBLE REPOSITION OF CONGENITAL LUXATION OF THE HIP.

BY

GWILYM G. DAVIS,

of Philadelphia.

The attempts at forcible reposition of congenitally luxated hips have given rise to so many accidental traumatism that the question has arisen as to whether, in order to avoid bringing the treatment into disrepute, it is not appropriate to advocate more conservative measures.

That it is both desirable and proper to use a certain amount of force in this as in other orthopedic measures is self-evident, and its employment in the reduction of congenital luxations is just as necessary as it is in traumatic ones and, rarely perhaps, even with the greatest care, a femur may be fractured, but the question is, Has not the use of force been carried too far?

When Paci was evolving his method of forcible reposition from 1887 to 1894 he was evidently at times employing considerable force and fully appreciated its dangers. He laid much stress on using the greatest care and slowness in making the reposition, because he stated that fracture of the thigh might otherwise be produced, which accident he said had already occurred. When Professor Lorenz, after seeing Paci demonstrate his method of forcible (now sometimes called bloodless) reposition at

the time of the International Congress in Rome in 1894, published and demonstrated in 1895, and later, his own mode of procedure, it was characterized mainly by the great force advocated. What Paci attempted by comparatively mild and more or less gradual methods Lorenz sought to accomplish by violence. The earlier descriptions and reports of his manipulations showed that such an amount of force was used and so many serious injuries inflicted as to cause me to view his modifications of Paci's procedures with distrust and doubt their necessity. When in 1900 Professor Lorenz issued the second edition of his volume on congenital luxations of the hip he stated that in 450 cases he had had 3 deaths; 1 was from chloroform narcosis, the other 2 were apparently due to the manipulations, for they occurred 16 and 24 hours later. There were also 11 cases of fracture of the neck of the femur, 1 of the pubic bone, 1 of the ilium, 3 paralyzes of the perineal nerve, 7 of the anterior crural, beside some of the sciatic, and 1 total gangrene of the lower extremity. Minor traumatism causing stiffness of the joints and the serious ruptures described by Narath also occurred.

Heusner, of Barmen, has recently stated that he and Hoffa have had even more serious results. Hoffa in the German Congress of 1899 stated that he had had tearing of the soft parts, vulva, urethra, fractures and separation of the epiphyses, paralysis of the sciatic and anterior crural nerves, and suppuration of the hematomas which formed at the site of rupture of the adductors. He even lost one case, a child of 6 years of age. It may be urged that these injuries occurred early in the development of the method of forcible reposition and in old cases. This is only partly true, because Heusner's article appeared late in 1902 (*Zeitschrift für Orthopädische Chirurgie*), and it is a wellknown fact that the most difficult cases are not always the oldest ones; one of the worst in Philadelphia was only 4 years of age; also that these accidents appear to be still recurring and new instances are being continually brought to light. Wilson and Dinkelspiel state that in one of the cases operated on by Professor Lorenz himself in Philadelphia the child was seized with convulsions, went into a state of stupor, the pulse became weak and rapid and could not be counted. This child fortunately recovered. Professor Lorenz is quoted as saying of this case that he considered shock and traumatism as the cause of the symptoms. Others who have followed his teachings have not escaped. I have recently heard of two additional deaths and another case of fracture of one thigh and paralysis of the opposite leg in a bilateral luxation, besides tearing of the perineum and other traumatism. In order to appreciate what amount of force Professor Lorenz advocates and uses in his manipulations, the four cases operated on in his public clinic in Philadelphia will illustrate. His routine method, as accurately as I can describe it, on that occasion was first to place the child on König's block, and an assistant holding the pelvis the thigh was abducted and extended while pressure was made on the adductors near the symphysis until they were ruptured. The leg was then extended on the thigh and the thigh forcibly flexed on the abdomen until the heel laid alongside of the ear. Then the operator or his assistant made traction while the other held the pelvis. The child was then replaced on the block and forced abduction and hyperextension performed with the thigh at right angles to the body and the leg flexed on the thigh, the internal condyle pointing anteriorly and the toes laterally outward. This position I would call external rotation. These manipulations were repeated until the head moved to its new position. In the last case, after performing these manipulations in a child aged 4 years, and not succeeding, six times was extension made by assistants pulling on a skein of yarn attached above the ankle, while counter extension was accomplished by a sheet fastened to one corner of the table, the perineum being protected by a rubber pad. On one occasion there were

three assistants pulling, the operator was pushing on the trochanter, another assistant helped to steady the pelvis, another gave the anesthetic, and three were holding the table, a force of eight powerful men (exclusive of the anesthetist) who were exerting their strength, directly or indirectly, on the tender tissues of a child 4 years of age. Between the tractions the patient was repeatedly hyperextended over the block. On the last attempt the head moved slightly forward, and the operator stated that in this case he would be satisfied with a partial result. That the manipulations were not without a certain amount of risk, even to the operator, was shown by the reported sequel of his having sustained a sprain of the wrist as a result of his efforts.

While it is true that many of these severe injuries have occurred in the older cases, they are by no means confined to them. Their frequent occurrence apparently compelled Lorenz to abandon the use of his screw traction, and instrumental traction has been discontinued by nearly all operators. The great increase in the number of accidents and severe injuries following attempts at reduction which has occurred since Professor Lorenz has given public demonstrations in this country justifies a plea for a modification of the methods at present so generally used. Designating as "bloodless" a method that tears the soft tissues, breaks the bones, produces hematomas extending from the middle of the thigh below to the umbilicus above and at times kills the patient, seems to me to be a trifle facetious and certainly savors more of sophistry than it does of truth.

When we consider that the deformity is not a fatal one, and that in some it is not even a seriously disabling one, means of treatment which subject the patients to the serious risks of permanent injury or loss of life are not to be recommended.

It therefore becomes a duty to see if the objectionable and dangerous features cannot be eliminated. With this object in view, the following suggestions are offered: That the tendons of the adductor muscles at least be cut subcutaneously, and thus considerable traumatism and mauling of the soft tissues at this point be avoided. It appears to me to be unnecessary to resort to violent stretching movements in all directions as a routine practice to loosen up the joint. It is a serious question as to whether by rendering the joint loose and flail-like they do not increase the functional disability and favor the tendency to displacement. In many cases, particularly the younger ones, replacement can be accomplished, as has been my experience, without such extensive tearing and stretchings. Violent tractions for immediate replacement, I believe, should be totally abandoned. Everything that can be gained by violent traction can be gained without risk by weight traction, with the patient confined to bed for a variable period of time. This has been demonstrated by Pravaz, Volkmann, Brown, Mikuliez, and others. Lorenz¹ characterized his own method as a traction method and Paci's as a circinduction method, and he was right, but it is the latter which is the correct one. Forceful traction has no place in the immediate reduction of congenitally luxated hips. It is the agent which is mainly responsible for the traumatisms which are inflicted, and if we are to avoid them we must adhere more closely to the original teachings of Paci, which, as he stated, consisted simply in the application of the circinduction method of reducing traumatic luxations. In this the thigh is flexed on the abdomen followed by downward pressure on the knee with abduction, external rotation and gradual extension. Pressure is made on the trochanter posteriorly while the limb is carefully extended. Abduction is afterward maintained to an extent sufficient to prevent the head from escaping from its new position. Whether the thigh is completely flexed on the abdomen or only at right angles to the body, I think, is immaterial, but prefer the former. If

the adductor muscles prevent the desired abduction they can be tenotomized. This is not always necessary.

To make the pressure on the trochanter it can be done with the hand beneath or rested either on a hard roll, as did Pravaz; the edge of the table, as did Paci; or König's block, as does Lorenz. If serious difficulty is experienced in attempting reduction then instead of resorting to increased force I believe it better to confine the patient to bed with the limb abducted and with weight extension if desired for two to eight weeks or even longer and then again attempt reduction. The loss of time occasioned to these children is insignificant compared with the importance of avoiding the dangers of violence.

Rather than resort to the great force now at times employed I believe it to be much better to incise and clear a way for the head of the bone.

ETIOLOGY AND TREATMENT OF RETRODEVIATIONS OF THE UTERUS.¹

BY

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The uterus under normal conditions occupies a central position within the pelvis, poised by certain suspensory ligaments or "guy ropes" which admit of considerable mobility and some variation of position in all directions with the movements of the body. Its relative position depends largely upon the degree of distention of the bladder and rectum. The long axis of the uterus, generally speaking, lies at right angles to a line drawn from the symphysis pubis to the promontory of the sacrum. This organ is normally in a state of anteversion, or very slightly anteflexed, with its anterior wall in close relation to the upper and posterior aspect of the bladder, and the cervix is directed toward the hollow of the sacrum. Any very decided variation from this position in any direction constitutes a malposition, and sooner or later is likely to take on pathologic significance.

Retrodeviations (versions and flexions) of the uterus are by far the most common, and coupled with downward displacement are, from a clinical and pathologic standpoint, the most important. The causes of retrodeviations of the uterus are many, and often complex in their nature. Congenital retrodisplacement is said to exist, but this condition is undoubtedly very rare. Anything which temporarily alters the normal position of the uterus, coincident with increased intraabdominal pressure, may produce backward displacement. Thus a distended bladder, tilting the fundus upward and backward, associated with a sudden jar or fall, might easily throw the fundus uteri backward into the hollow of the sacrum; intraabdominal pressure, spending its force upon the anterior wall of the uterus, being sufficient to keep it displaced.

Tight lacing, constant sitting, heavy lifting, constipation and straining at stool, are all means by which intraabdominal pressure may be increased, and operate as causal factors of these malpositions of the uterus, and this in great measure explains the frequency with which this condition is met in young and unmarried women.

Parturition, puerperal local infection and injuries to the uterogenital tract the result of childbirth are the most fruitful etiologic factors in the production of retroversion and flexion. Injudicious practices during the puerperal state, before the reparative processes of nature have established perfect uterine involution, are responsible for many cases. If the woman should assume the erect position while the uterus is yet heavy, or attempt some

¹ Revue d'Orthopédie, 1897, p. 143.

¹ Read before the Middle Tennessee Medical Association, November 21, 1902.

straining or laborious task before the uterus has had time to shrink, she is very liable to throw the organ out of position. Septic endometritis, through its interference with uterine circulation and involution, is not infrequently responsible for a retrodisplaced uterus. It is not without reason to say that this infection may, and often does, travel onward and inward, producing pelvic inflammation, acting not only as a contributing cause of the displacement, but being responsible for more or less dense adhesions which bind the uterus firmly in its new bed, adding much to the gravity of the situation.

The chief single cause of retrodeviation of the uterus is rupture of the perineum involving the levator ani muscle and its fascia, together with a heavy uterus. In some cases there may be no external evidence of a perineal rent, yet the very marked relaxation of the pelvic floor indicates clearly that the muscular and fascial functions have been greatly impaired or destroyed, allowing intraabdominal pressure to gain the ascendancy and general pelvic ptosis to result.

Impairment or destruction of the function of the pelvic floor, coincident with subinvolution, operates as a causal factor in retrodisplacement in the following mechanical manner: We know that the rectal ampulla is directed anteriorly against the perineal body at a decided angle, which on account of the anatomic shape of this body is again angulated in a backward direction for about two inches before the anal opening is reached. In the mechanism of defecation the fecal current and expulsive force strikes the posterior wall of the perineal body, which, if in possession of its full muscular strength and function, directs the fecal mass backward through the anus. Should the levator ani muscle, its fascia and the superficial perineal muscles be torn, or deprived of their function, then this pressure will not be counteracted, the rectovaginal septum gradually gives way by stretching, thinning, and the formation of redundant tissue, producing a rectocele. Each defecation, which in these cases is associated with increased intraabdominal pressure due to straining, causes a dragging upon the posterior vaginal wall, pulling the cervicocorporeal junction of the uterus downward, and somewhat forward, and coincident with intraabdominal pressure from above producing in time retroversion, prolapse of the uterus and vagina, with its consequent rectocele and cystocele.

Incidentally, I may remark that it is not unreasonable to conjecture that as a result of a lacerated perineum the patient will not only suffer the discomfort of the pelvic ptosis just mentioned, but on account of the cystocele will be unable to empty her bladder completely. The residual urine will cause cystitis, followed by suppurative changes, the infection finally finding its way through the ureters to the kidneys. Thus, a lacerated perineum may be indirectly the cause of death. While I have dwelt at length upon the causative influence of perineal lacerations, I do not wish to overlook lesions of the cervix as a contributing cause of subinvolution, nor am I unmindful of open wounds about the uterogential tract as avenues of infection through which metritis, parametritis and septic pelvic inflammation may have their origin.

TREATMENT.

This subject will be considered under three heads: Prophylaxis, nonsurgical, surgical.

Prophylaxis.—The proper appreciation and application of hygienic dress, the strict observation of the laws of health and intelligent parental control will do much toward preventing retrodeviations of the uterus in young girls. One of the most pernicious practices of today, especially among city girls, is the too early wearing of corsets and tight waists. In the majority of instances girls of 12 to 13 years wear tightly fitting corsets, at the expense of development. Displaced intraabdominal and intrapelvic viscera results, and in all probability a crippled life. I

do not believe a corset should ever be worn, but if worn, not until after full maturity and perfect bodily vigor has developed. During school life the young girl should be given ample opportunity for exercise in the open air. The college gymnasium is a valuable necessity, and should be utilized to the best advantage; but if possible, resort should be had by preference to nature's own gymnasium, the open lawn. An hour's fun and frolic here is more invigorating and refreshing than a week spent in a gymnasium.

The most important prophylactic measure, however, in forestalling this condition is the proper care of the parturient and puerperal woman. Nowhere in the whole domain of the healing art can skill and surgical dexterity accomplish more good than in the lying-in chamber. The strict observance of the established principles of asepsis is the bulwark against infection, and should be almost the chief aim of the obstetrician in the management of his cases. Perineal lacerations and all rents in the maternal soft parts should be closed by coaptation sutures at once, unless some very good reason exists necessitating postponement. Pelvic circulation should be promoted by proper care of the bowels and bladder, and sufficient rest should be enjoined to encourage proper involution.

In leaving the subject of prophylaxis, I am aware that much more could be said, but as space is limited, I have only thrown out hints which I have deemed of most importance.

Nonoperative Treatment.—Practically the only non-operative treatment at our command which offers any hope of cure is that by the pessary, aided with local treatment and the tamponade. Other measures, such as massage, electricity, tonic medication, etc., have been resorted to, but are of very doubtful efficacy.

In treating retrodeviations of the uterus by the pessary, one must remember that not all cases are suitable for this method, and that in suitable cases there is a certain amount of preliminary attention necessary before introducing the supporter. For married women, who have never borne children and in whom retroversion is the sole pathology and the uterus freely movable, the pessary will not infrequently bring about an anatomic and symptomatic cure, at the same time favoring conception. For a multiparous woman with a heavy uterus, free from adhesions, adnexal disease, lacerations of the cervix and perineum, with more or less engorgement and discomfort within her pelvis, judicious treatment by rest in bed, glycerin tampons, and depleting measures, will within a short time make her a suitable subject for the pessary.

There are a great number of cases which distinctly belong to the surgeon, but in which the patients persistently refuse operative treatment. In this class of cases much good can be done by local treatment and the introduction of a properly fitting pessary. An anatomic cure is impossible, but not infrequently a symptomatic cure will obtain so long as the support is worn.

In resorting to the pessary in a given case it is of great importance (1) to determine if the case is a suitable one; (2) to mold and fit the instrument to suit the case, and (3) to replace the organ before introducing the supporter.

A properly fitting pessary should be worn without the slightest discomfort to the patient, and for a period of at least two years when a permanent and curative result is expected. It is important to remove the supporter about once a month, when it is cleaned and reintroduced.

Operative Treatment.—The indication to be fulfilled by surgical treatment is to replace the uterus to as near its normal state of anteversion as possible and fix it there with a minimum amount of subsequent physiologic disturbance. Many operative procedures have been suggested and practised with varying degrees of success within the past 20 years; some have successfully stood

the test of time and experience, others are now upon trial, while a few have fallen by the wayside. They may be divided into three classes: 1. Shortening the round ligaments. 2. Ventral fixation or suspension. 3. Vaginal fixation.

Shortening the round ligaments was first suggested in the year 1840 by Alquié, of France, but the honor of its practical application is due to Alexander, of Liverpool, whose monograph was published in 1884. The Alquié-Alexander-Adams operation, with some slight modifications in technic, is now established upon a firm basis and has but few opponents in this country. Like the pessary, the Alexander operation is not suited to all cases, but in suitable and well selected cases it is undoubtedly the best of all surgical procedures for the cure of uterine retrodisplacements. It is comparatively easy of performance, free from danger, leaves an insignificant scar, a minimum danger of postoperative hernia, does not interfere with subsequent pregnancy or make menstruation more painful, and offers as much hope of success in suitable cases as any other operation.

Simple uncomplicated cases, free from adhesions and adnexal diseases when the uterus is freely movable, are the ones best suited for this operation, although if the adhesions are slight they may be broken up by manipulation, if need be through a vaginal incision. This procedure, however, is not entirely devoid of risk, and I do not like it.

In the presence of rather firm adhesion, or adnexal disease, abdominal section and intraperitoneal shortening of the round ligaments after the method of Gill Wylie or Mann is preferable, or if both ovaries are removed there is no objection to ventral fixation or suspension. Intraabdominal shortening of the round ligaments was first proposed by Wylie in 1886 and has since been modified by Mann, Dudley, Polk, and others. Shortening the round ligaments through the vagina and at the same time dealing with adhesions and adnexal disease was first done by Wertheim in Austria, subsequently modified and advocated by Byford, Goffe, and Vineburg in this country. In the hands of surgeons who have a special fondness for the vaginal route this operation has given good results. Goffe¹ reports 130 cases with only 3 failures. Fixation of the uterus to the abdominal wall for the cure of backward displacements was first performed by Lawson Tait in February, 1880, and subsequently modified by Kelly, who proposed the operation of suspension of the uterus April 25, 1885. It has met the approbation of many operators and is very popular, but as advocated by Kelly, in all cases demanding surgical interference, irrespective of future procreative possibilities, intrapelvic disease or adhesions, is not free from objection. The influence of suspension of the uterus and ventral fixation upon pregnancy and labor is not very great, yet serious and fatal dystociae have been reported. Troublesome irritation and invalidizing conditions have resulted therefrom.

Among the objectionable features of this operation may be mentioned the following:

Postoperative.—Inherent danger of celiotomy (2% to 3%); constant pain in the hypogastrium in many cases; dysmenorrhea ensues in many instances and if it existed previously is often made worse; marked retraction of the scar may occur due to the tugging adherent uterus which may cause persistent nausea.

Artificial suspensory ligaments invite ileus. Kelly reports 1 case; Dickinson, 1 case; Jacobs (Brussels), 1 case; Olshausen reports 1 case of Leopold's; Hall (Cincinnati), 2 or 3 cases; Dr. Richard Douglas, 2 cases; Goldspohn knows of at least 15 authentic cases, and many others may be found by a careful search of literature.

Obstetric.—Renders conception less likely. There were 56 conceptions out of 808 cases in Noble's collec-

tion, less than 7%. Favors abortion (perhaps only slightly, 10.7%). There is retraction posteriorly and ascent of the cervix during pregnancy. Gives an obstetric mortality of 2% to 3%. Out of 133 cases collected by Noble from French and German operators there were 3 deaths (2.25%). Out of 56 cases collected by Noble from American sources there were 2 deaths (3.57%). There is danger of too firm attachment of the uterus to the abdominal wall with subsequent hypertrophy of the anterior uterine wall, forming an obstruction to labor, as in the case of anterior mural fibroid (Noble 2 cases) or uterine inertia (Bloomhardt,¹ Altoona, Pa., 2 cases). There is danger of great thinning of the posterior wall of the uterus to accommodate the growing fetus and rupture of the uterus may occur.

It favors malpositions and obstetric surgery, often of a capital nature, such as cesarean section.

The uterus may be torn away from its moorings during pregnancy or labor, producing intraperitoneal hemorrhage.

It favors postpartum hemorrhage and uncontrollable vomiting.

Dr. Ochsner, of Chicago, says: "I do not advise celiohysteropexy at any time, because I have frequently seen a great amount of irritation in these cases, necessitating a second operation for the purpose of loosening the adhesions. . . . I have seen troublesome results following ventral fixation and suspension in subsequent pregnancies."

With these facts before me I am forced to take the position that in uterine retrodisplacements without adhesions, the tubes and ovaries being normal and functioning, suspension of the uterus or ventral fixation is an unjustifiable operation. I am borne out in this opinion by Mann, Ochsner, Reed, Clement Cleveland, Goldspohn, Vineburg, and to some extent by Noble, as well as many others. In other cases when the tubes and ovaries are removed for diseased conditions and extensive adhesions broken up, leaving a large amount of raw surface, in my opinion suspension of the uterus is a good operation, and from a purely gynecologic standpoint is quite satisfactory. It is, however, far from ideal, inasmuch as the artificial suspensory ligaments will always menace life by inviting ileus.

Ventrofixation or suspension falls short of the surgical indications in the treatment of backward displacements of the uterus in replacing the organ to as near its normal position as possible, and fixing it there with a minimum amount of subsequent physiologic disturbance. This normal position of the uterus refers to its position within the pelvis, and I am sure that none will argue that ventrofixation or suspension will accomplish this result. It is well known that celiohysteropexy lifts the uterus out of the pelvis into the abdominal cavity, which, in my opinion, is but the substitution of one pathologic condition for another. I will not condemn the operation as unjustifiable in well-selected cases, for apparently it has a field at the present time, but if I can interpret the signs of the times properly, its popularity is upon the wane.

In doing an abdominal section for intrapelvic disease associated with retrodeviation of the uterus, without removal of the ovaries, if the patient is of childbearing age I repeat that intraperitoneal shortening of the round ligaments should be the operation of choice. Vaginal fixation of Mackenrodt and Duhrssen has been abandoned by its originators because of disastrous dystocia which so often followed, therefore I will not take up time with the discussion of this operation.

Fixing the cervix uteri back in the hollow of the sacrum has been attempted by shortening the uterosacral ligaments. Bovée, of Washington, reports 12 cases, 8 by the vaginal route, 4 by celiotomy, all successful, which speaks well for the future of this method.

¹ Am. Gynecol., November, 1902.

¹ American Medicine, January 11, 1902.

With the same object in view, Pryor endeavors to form adhesions between the posterior surface of the cervix and rectum, but the number of patients operated upon is yet too small; they are, therefore, still considered *sub judice*.

In conclusion, I will say that no operative procedure designed to cure retrodeviations of the uterus is complete without the proper application of the principles of plastic surgery to the restoration of the function of the pelvic floor. Old cervical tears should be repaired, and septic endometritis relieved by a thorough curetage.

There is, perhaps, no department of surgery which requires more skill and judgment in the diagnosis and selection of cases for a particular operation than the one under consideration, as practically all methods have something specially meritorious and worthy of serious consideration.

STRONGYLOIDES INTESTINALIS IN TEXAS, WITH REPORT OF A CASE.¹

BY

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In the *Journal of Experimental Medicine* of November 29, 1901, Thayer reports three cases of *Strongyloides intestinalis* occurring in Johns Hopkins Hospital. Strong, who is now in the Philippines, is given credit for the discovery of the first case occurring in North America, and Thayer, who reported this and two other cases, has gone very carefully into the literature and found that these are the only cases that have been reported in the United States.

While doing postgraduate work at Johns Hopkins Hospital in 1900 I heard something of these observations, but thinking I would never see the parasite in our part of the country did not fix the matter on my mind. However, on May 14, 1901, a patient came to my clinic complaining of cramps in the abdomen and a diarrhea of a very obstinate type. Upon examination of the stool I found an actively moving parasite that I had not seen. I therefore submitted the specimen to Dr. A. J. Smith, who returned me the report that it was *Anguillula intestinalis*. It seems important enough to report, as I believe this makes the fourth recorded case in this country. It is, however, quite a common parasite in many parts of the world, and is, no doubt, more common in the Southern States than at present thought.

J. S., a colored male, aged 28, is a resident of Galveston, his occupation being that of laborer on the wharf. He was born in Galveston, and has lived in Houston, Texas, part of the time. He was admitted to the outpatient clinic of John Sealy Hospital May 14, 1901. He went to Santiago, Cuba, in 1898, and has been in San Luis and other parts of the island. He was in the army, and many of the men had diarrhea, some of the cases terminating fatally. He drank all sorts of water, very often obtaining it from standing ponds. He returned home from Cuba May 22, 1899.

History.—He drinks beer moderately, smokes tobacco, but has no other drug habit. Hygienic surroundings were good except while in Cuba.

Family history is unimportant.

Previous Diseases.—He had measles when a child; malarial fever while in Cuba. He was attacked with dysentery about three weeks after his arrival in Cuba, passing much mucus and blood in the stools. He gained weight while in Cuba, notwithstanding the chills and fever and diarrhea. He had clap 13 years ago.

Present Disease.—He complains of pain in the abdomen and in the back. The pain has been present at irregular intervals for some time, but is worse when an attack of diarrhea comes on. These attacks are periodic, lasting for a day or two, then he gets better and the bowels will move only once a day for a while. His appetite is good and he sleeps well at night.

Examination.—He is a well-nourished man, 5 feet, 7 inches in height, and weighs 150 pounds. Heart and lungs are normal, liver and spleen apparently normal. There is slight tender-

ness over the abdomen. An intestinal parasite was suspected, and therefore the next day (May 15) a stool was examined while fresh. It was thin, mushy and of foul odor, dark in color, but no macroscopic elements of abnormal character were seen. Microscopic examination showed many actively moving worm-like bodies. No ova of parasites were present and no amebae were found.

As I had never seen such parasites before, I sent the specimen to Dr. A. J. Smith, professor of pathology, University of Texas, for identification, and he made the following report:

"Referring to specimen of stools submitted to me for examination containing parasitic worms, I wish to report that these worms are examples of *Anguillula intestinalis*; formerly supposed to cause the diarrhea of Cochin China, but at present regarded as unimportant intestinal parasites, embryos of parent worms in the intestines not often obtained. I have encountered these a number of times in specimens of fecal matter used in class demonstration, or otherwise, since the opening of the school in 1891, and believe them comparatively common in this part of the country."

The patient was put on thymol and an examination of the stool made May 28, 1901, showed many embryos still present. Thymol was again given in full doses. The patient improved while taking 4 grains (60 grains) a day, but an examination December 21, 1901, showed parasites present. An examination April 15, 1902, showed many embryo strongyloides.

The monographs of Strong¹ and Thayer² go quite fully into the history of this parasite, and from these authorities I have obtained much of my knowledge of *Anguillula intestinalis*.

Normand, a French army surgeon, is credited with the discovery of this parasite in 1876. It was found in the stools of patients suffering from diarrhea of a severe character. These patients had been in Cochin China, where the parasite is found in large numbers. Bavay, who made a close study of this intestinal worm, gave it the name of *Anguillula stercoralis*. Normand in 1877 found another worm present in the small intestine of a patient dying from Cochin China diarrhea. Bavay, who in the same year found a number of this form of parasite, described it as *Anguillula intestinalis*. The fact of the parasite manifesting itself in two forms and having received separate names has led to some confusion, but at present it is held by most observers that *Anguillula intestinalis* and *Anguillula stercoralis* are the same. Grassi and Parona, who made a close study of the parasite, gave a careful description of the mother worm, of the eggs, and of the embryos developing from the ova. Grassi in 1879 proposed the name of *Strongyloides intestinalis*, and Thayer says that most authorities now accept this classification.

Many persons in different parts of the country have studied this parasite, and those who feel enough interest in this worm will find in the monographs mentioned the bibliography of the literature complete to 1901. I made repeated examinations of the stools of my patient, but failed to find anything pathologic except the embryos of *Strongyloides intestinalis*. These were quite numerous, and measured .26 mm. to .40 mm. in length by 20 to 25 microns in width. They were quite actively moving bodies, going either backward or forward. The cephalic end was slightly smaller in diameter than the body, while the parasite tapered to a point at the tail. The digestive canal could be easily made out running from the depression seen at the cephalic end. If there were any lips as described by Strong as seen in the larger forms I could not make them out. The enlargement of the esophagus about one-fourth of the length of the parasite from the mouth, the narrowing back of this, and the enlargement could be very easily made out. The anal end of the digestive tract is situated one-eighth to one-tenth of the length of the worm from the tip of the tail. Between the outer covering and the digestive tract is a granular material extending the entire length from the mouth to the anal opening. The outer covering of the worm is of a clear hyaline structure, but after applying some weak formalin solution I noticed a fine transverse striation of the skin.

I repeatedly tried to grow the adult male and female

¹ Read at the meeting of the South Texas Medical Association, at Beaumont, Texas, 1902.

¹ Johns Hopkins Hospital Reports, Vol. x.

² Journal of Experimental Medicine, Vol. vi.

worms by keeping the thin stools in the incubator, but I failed to observe any other than filiform larvæ which measured .495 mm. in length and 22 microns in breadth. The esophageal enlargements were lost in this form as noted by Thayer and the body of the worm was more uniform in thickness throughout its entire length. The anal opening was seen just a short distance anterior to the tail end. These two observations were made five days apart.

Repeated examinations were made for the ova, but none was ever found either in fresh stools or those kept at incubator temperature. As I found no adults I have adopted the description of RAILLET, a French author, who describes them as occurring in two forms:

1. *The Intestinal Form.*—The female is 2 mm. in length by 34 microns in breadth. The body is somewhat attenuated at the head end, terminating at the posterior extremity by a conical tail. The end is somewhat rounded and even a little dilated. The integument is finely striated transversely. The mouth has three small lips, giving access to an esophagus almost cylindrical and which occupies about one-fourth of the length of the body, and continues without transition into the intestine, the color of which is different. The anal opening is a transverse slit, situated near the base of the tail. The vulva is about one-third from the posterior end of the body. The uterus contains 5 to 9 eggs greenish-yellow in color, and ellipsoid in shape, 50 to 58 microns in length and 30 to 34 microns in width.

2. *The Stercoral Forms.*—The individuals are both male and female. The females are smooth, cylindrical, drawn out at the extremities, especially at the posterior end. The mouth has two lips, which are indistinct, followed by a short and rather large vestibule. The esophagus is dilated into two cone-shaped cylinders, which are separated by a narrowed portion. The anterior one is elongated, the posterior one is pyriform, with a chitinous armature in the shape of a Y. The intestine is a little dilated at its beginning. The anal opening is at the base of the tail on a slight elevation or nipple, turned to the right by the development of the uterus. The male is 7 mm. in length by 34 microns in thickness. The tail is curved back in the shape of a hook, with two curved in spicules, which have openings 38 microns in length. There are a few preanal papillae. The female is 1 mm. in length by 50 microns thick. The tail is drawn out to a long point, slightly wavy. The vulva is a little to the back of the middle of the body. The eggs are ellipsoid, of a yellowish shade, with a thin shell and 70 microns in length by 45 microns wide. The eggs sometimes hatch in the uterus.

Distribution.—The parasite is very broadly scattered. It is said to be found in pretty nearly all of the Asiatic torrid zone and in the Indian Archipelago. It has been observed and studied in Italy, Germany, Egypt, Ceylon, Brazil, the West Indies, and Martinique. Strong has observed it in the Philippine Islands. He and Thayer report three cases in Baltimore. My patient probably contracted the parasite in Cuba, as he had not noticed any diarrhea previous to going there. Dr. Smith states that he has several times seen the embryos in fecal matter examined by the class. This parasite has been noted in frequent association with *Uncinaria duodenale*. Lutz in Brazil found strongyloides in one-half of the cases of ankylostomiasis.

Significance.—This is a much disputed question. Many writers hold that it causes great inflammation of the bowel, even causing destruction of the epithelial coat of the intestine; while others hold that the diseased bowel only furnishes a suitable habitat for the parasite. They have been observed in persons otherwise healthy. My patient suffered periodically with cramps in the belly and with diarrhea. His digestion at times is more or less disturbed, and he has a moderate anemia.

Treatment.—I gave my patient thymol without ridding him of the worms, though he seemed to improve

while taking it. Normand and Perroncito advise the use of extract of male fern, and Davidson advises the continual administration of thymol and tr. ferri chlorid.

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STREPTOCOCCI INFECTIONS.

BY

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The number of actual pathologic conditions to be laid at the door of the streptococcus are rarely given the consideration they deserve. Not even that protean destroyer, the tubercle bacillus, causes such various conditions as this little coccus which grows in chains. Perhaps there are more than one species of Koch's bacillus, each of which differs from the other, one forming scrofula, another causing Pott's disease, a third causing various pulmonary lesions, acute, subacute or chronic; a fourth being the cause of hydrocephalus, a fifth exciting gastrointestinal tuberculosis, another osteomyelitis, and so on. But why should there be different species of the tubercle bacilli to cause these conditions? The pathologic lesions are the same, though their situation is different. The tubercle of the brain and spinal cord is exactly like the tubercle of the pleura or peritoneum. In one of the newest volumes on bacteriology¹ the streptococcus, which we know as a small, round-celled bacterium occurring in chains, long or short, and nonmotile, is subdivided into 35 or more species. The majority of these, 18, or more than half, were isolated from various pathologic lesions of man, the other 17 were obtained from decomposing saccharin solutions, cattle and sheep disease, blighted sorghum, water, milk, potato blight, sewage, diseased dogs, bitter cream, feces from healthy children, and decayed meat.

Of the 18 species of streptococci pathologic for man there are only two divisions morphologically, cocci which occur unpaired but in chains, and diplococci occurring also in chains. Under the latter, however, is included *Diplococcus pneumoniae*, described as two species, viz., *Streptococcus pneumoniae* and *Streptococcus weichselbaumii*.

Of the remaining 16 species of streptococci, the only morphologic means of differentiation given is, do they stain with or without capsules. There is one, *Streptococcus capsulatus* given with a capsule. This was isolated also from a pneumonia (peribronchial) and may be only a variety of Weichselbaum's diplococcus.

The remaining 15 species given are about the same morphologically, but differentiated in the classification by cultural (biologic) characteristics.

The first class, those not growing at room temperature or poorly, are subdivided into (a) discernible growth in agar, and (b) scarcely discernible growth in agar.

The second class, those growing at room temperature and liquefying gelatin, are subdivided into (a) poor growth in gelatin; (b) viscid softening in gelatin; (c) good growth and slow liquefaction of gelatin; (d) good growth and rapid liquefaction of gelatin.

The third class, those growing at room temperature and not liquefying gelatin, are subdivided (a) with capsule and (b) without capsule. Under (a) are *Streptococcus pneumoniae* and *Streptococcus weichselbaumii* before

mentioned and already excluded from this list because of morphologic differences.

Under (b), streptococci without capsules, are included (among pathologic forms) the following means of differentiation: 1. Conglomerate chains. 2. Free chains. 3. Little growth in depth of gelatin. 4. Much growth in depth of gelatin. 5. Growth in gelatin not described (three species). 6. Pathogenic to animals. 7. Non-pathogenic to animals. 8. Pathogenic to plants. The fourth class is not included in the 15 species mentioned, for it contains chromogenic streptococci not concerned in human pathologic conditions.

Here are 15 species described which, as regards motility, morphologic appearances, staining reactions to basic anilin dyes and Gram's method, are in every respect exactly similar, and which must be differentiated one from the other by the temperature of best growth, visible or invisible growth on agar, poor or heavy growth in gelatin (in three species this is not mentioned), pathogenicity or nonpathogenicity to animals, and of more importance negative, slow or rapid liquefaction of gelatin.

Five of our 15 selected streptococci are given as variously liquefying gelatin. These are *Streptococcus brightii* described in 1839 by Mannaberg² and isolated from urine in acute Bright's disease; *Streptococcus enteritidis*, isolated from stools, organs, and lymphatics of intestines by Escherich³ in 1887; *Streptococcus septicus* taken from the blood of a child dead of septicemia, by Babes⁴; *Streptococcus liquefaciens* of Sternberg⁵ from a yellow fever cadaver; *Streptococcus fischeli* isolated by Fischel⁶ from the blood of two influenza patients.

Of the remaining 10 all are nonmotile, occurring in short or long chains inconstantly; take Gram's stain and the basic anilin dyes and can only be differentiated by slow or rapid growth in agar and gelatin, pathogenicity or nonpathogenicity to animals, visible or invisible growth. *Streptococcus enteritidis* of Hirsh⁷ from stools of infant diarrhea has invisible growth on agar, very little growth on gelatin; causes diarrhea in white mice. *Streptococcus conglomeratus* associated with scarlet fever by Kurth⁸ is very pathogenic to mice and is said to differ from *Streptococcus erysipelatis* only by forming very white scales at the bottom of bouillon cultures. *Streptococcus erysipelatis* (pyogenes) is the only one perfectly and completely described and which has stood the test of Rosenbach's⁹ original description continuously since. Three varieties of this organism are given and the statement of their probable identity made. These differ about as greatly as the other streptococci given as distinct species, and do not liquefy gelatin.

Streptococcus enteritidis of Libman¹⁰ seems to differ but slightly from the one described later by Hirsh. And so on through the entire list. Variations in cultural characteristics are so frequent among the same species and the degree of pathogenicity of bacteria is so variable that to differentiate 15 species of streptococci upon such a slender basis would seem to be indeed frail.

The *B. tuberculosis* which is so difficult and slow of growth upon glycerin agar and glycerin bouillon might upon the same grounds include 15 different species. For we have as yet been unable to grow it upon the very media employed to make so many streptococci species.

In the literature which I have attempted to follow as completely as possible, there are many pathologic conditions associated unquestionably at all times with streptococci. No attempt has been made, as a rule, to describe a special species of streptococci for each separate process.

Of erysipelas, Osler¹¹ says: "The specific agent is a streptococcus growing in long chains, which is included under the group name *Streptococcus pyogenes* with which *Streptococcus erysipelatis* appears to be identical.

Streptococci are isolated in pure culture from all uncomplicated cases of erysipelas, and by injecting bouillon cultures of these cocci into animals pathogenic effects are produced, the animal dying in a few days.

Holt¹² states that croupous tonsillitis can be differenti-

ated with certainty from diphtheria only by means of cultures. "Croupous tonsillitis is nearly always due to the streptococcus." In five cases of acute follicular tonsillitis which developed in the bacteriologic class of sixty odd students at the College of Physicians and Surgeons* cultures made by me showed the streptococcus in pure growth four times, and in association with *Staphylococcus albus* once.

Sahli, Choostels, and Singer¹³ in their researches upon acute articular rheumatism show very convincingly that it is an infectious disease, and Singer's work points very conclusively to the streptococcus as one of the most important etiologic factors concerned in its production. He found over 42% of his cases beginning with tonsillitis. Last year Clupman¹⁴ reported the cure of a patient with antistreptococcal serum, and Kollman¹⁵ and Meuzer¹⁶ reported other patients similarly treated.

Two patients with chronic rheumatism who have been under my observation for some time have suffered with a subacute nasopharyngeal catarrh for many years. Always just preceding the development of the articular disturbances, the sore irritating feeling in the posterior nares and pharynx has appeared. To me this led to the theory that there might be the possibility of a focus of infection there which might occasionally flare up and pour the toxins into the general circulation, causing the discomforts and joint pains occurring in chronic rheumatism. The portion of the pharynx which was accessible was therefore curetted and cultures made from both cases. Streptococci were obtained in both instances, although the second case showed a bacillus resembling a pseudodiphtheria bacillus which may have been present in the mouth.

There is no *a priori* reason why we should not find chronic streptococcal infections just as we find chronic tuberculosis, syphilis, leprosy, influenza and diphtheria. In fact, there is considerable presumption in its favor, when we consider the frequency of recurring tonsillitis, rheumatism and erysipelas.

The most malignant and most frequent cause of child-bed fever is undoubtedly the streptococcus. Williams's¹⁷ method of obtaining cultures from the infected uterus in the puerperium should be followed in every case, for the treatment and therefore the life of the patient depends upon the results of these cultures. The streptococci can be seen to have grown down deep into the muscular walls of the uterus, for the most part much beyond the reach of antiseptic douches.

Streptococci are often obtained in pure culture from traumatic cases of cerebrospinal meningitis, as in the case recently brought to the Baltimore City Hospital. Dr. West,¹⁸ the resident surgeon, made a lumbar puncture the day after the patient was admitted and obtained an uncontaminated culture of the streptococcus. Subsequently the cultures at autopsy verified the finding.

Streptococci have been so often found associated with scarlet fever that the announcement of Prof. Adolf Baginsky, of Berlin,¹⁹ that during the past 12 years he had treated 701 patients with an antistreptococcal serum prepared by Herr Aaronson with the mortality reduced to 8% is not surprising. He states that scarlet fever, like erysipelas, is due to the streptococcus.

It is somewhat more astonishing, however, to learn that streptococci have been found circulating in the blood of chorea patients. P. A. Preprojensky²⁰ obtained pure cultures of the streptococcus very easily from the circulation of two patients suffering with chorea. In a third case pure cultures of streptococci were obtained from all the viscera at autopsy. This led him to employ antistreptococcal serum and after two weeks the movements entirely ceased.

Of the many skin diseases besides erysipelas only two show the streptococcus in etiologic relationship. Thibierge and Bezançon²¹ made a great many cultures from

* Three other private cases gave pure cultures of the streptococcus.

beneath the scabs in ecthyma and obtained the streptococcus every time in pure culture. Gilchrist²² verified these findings.

Gilchrist²² in 17 cases of impetigo contagiosa varying much in severity obtained pure cultures of *Streptococcus pyogenes* in ten cases. In the remaining seven there was a contamination with *Staphylococcus aureus*, but the proportion of the number of colonies of the streptococcus was as hundreds to one of the staphylococcus. Smear preparations from the impetigo vesicles demonstrated the chain cocci very easily in every case. These results verified the work of Leroux,²³ Balzer, and Griffen.²⁴

Dr. William Royal Stokes²⁵ states that in his pathologic records he has notes of two cases of malignant endocarditis which yielded pure cultures of streptococci at autopsy; another case of cerebrospinal meningitis following trauma, gave pure cultures of streptococci from the brain and cord. Stengel³³ states that the streptococcus is occasionally found in ulcerative endocarditis. Miss Thomas,³⁷ working under the direction of Prof. Stokes, found streptococci in ice-cream sold in the public streets.

Through the kindness of Dr. William Royal Stokes I was able to find among his autopsy records of the Baltimore City Hospital eight instances of pure streptococci infections and three combined with the colon bacillus. Among these were No. 6, acute endocarditis; No. 56, tuberculosis; No. 79, retropharyngeal abscess; No. 85, peritonitis; No. 111, septicemia; No. 122 (by Dr. Ruhrah), pneumonia; No. 142, cerebrospinal meningitis; No. 141, pericarditis. Stokes²⁶ cautions against cow's milk for infants, and reports the presence of streptococci in it, and its relation to summer diarrheas. Acute gastrointestinal intoxications, indigestions and diarrheas have been shown by Escherich, Baginsky, and Booker²⁷ to be frequently associated with streptococci. Septicemia, pyemia, local abscesses, wound infections and appendicitis have shown pure cultures of streptococci so often that they need only be mentioned among the associated disease processes.²⁸

As to the ability to make distinct species of streptococci with our present knowledge, Petruschky²⁹ has shown that the streptococcus obtained from pus may cause erysipelas in the human subject. In one case of purulent peritonitis he obtained a pure culture of streptococci, the patient never having suffered from erysipelas. With this culture he produced typical erysipelas in two women with cancer.

As to its difference of pathogenicity, Muir and Ritchie³⁰ state the wellknown fact that even highly virulent cultures, if grown under ordinary conditions, lose in time all pathogenic power, while passage from animal to animal may increase the virulence again, as in the case of most pathogenic organisms.

Marmorek³¹ showed that the same culture of streptococcus may at one time produce redness, at another local suppuration, again spreading erysipelas, or again general septicemic infection, according as its virulence is increased. He also showed that the same streptococcus which originally grew in long chains may grow in short, and again be made to grow in long chains. This again destroys a means of differentiating species.

Widal and Bezançon³² also showed a nonpathogenic streptococcus to become virulent when inoculated with *Bacillus coli communis*.

These authors anticipated the recent findings of the Americans in the constant presence of the streptococcus in the lesions of smallpox cases found at autopsy. They isolated the streptococcus from the circulating blood of a patient with smallpox and found it to be quite virulent, while the streptococci cultivated from the mouth of the same patient were nonvirulent. They explained this upon the ground that the streptococcus of the mouth entered the circulation of the diseased individual and thus became virulent.

Ziegler³⁶ states that infections with streptococci arise

in healthy individuals, occasionally by injuries or associated with or terminating other infections, as tuberculosis and diphtheria. He states that septicemia and pyemia are dependent upon the virulence of the organism.

In conclusion, then, it would seem that there is little warrant, with the paucity of our present means of differentiating bacterial species, for dividing the streptococcus into 18 or more species. From the multiplicity of pathologic processes concerned, in which the streptococcus is undoubtedly found always, it is quite likely there are distinct species, or at least varieties of streptococci involved, but our present means of separating them proves it is open to considerable doubt.

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Injunctions Keep City Dirty.—Commissioner Blocki, of Chicago, who has entered upon a crusade for clean streets, complains that he is unable to keep the downtown sidewalks clear of fruit stands from the fact that so soon as a fruit vender is notified to vacate a sidewalk he immediately applies to an attorney, who gets out an injunction restraining the authorities from moving the dealer, and this causes unnecessary delay and litigation, which practically ties the hands of the commissioner. It is hoped that the new City Council will be much more careful in issuing permits for these nuisances in the streets and on the sidewalks.

Minnesota State Hospital for Crippled and Deformed Children.—According to the surgeon's report to the board of regents of the University of Minnesota since the first appropriation was made for this hospital there have been treated 167 patients. Of these 125 have been discharged as cured or improved. There have been 7 deaths and 35 are still under treatment. Most of the patients come from remote districts where there are no hospital facilities. It seems almost impossible to get these children in the early stages of disease, as their parents will not permit them to go until all home measures have failed, so that generally when a child is admitted to the hospital it is in a desperate condition and in imperative need of proper care. Experience with these children has shown that it is most important to have a hospital abundantly provided with wards and a building separate from the main wards for the isolation of suspected contagious diseases, as it has been found that patients are brought to the institution with beginning scarlet fever, measles, chickenpox and diphtheria. It has, therefore, been found advisable always to isolate a child as soon as it arrives until it is demonstrated that it is not suffering from any of the above diseases. It is asserted that even with this extreme caution a case of contagious disease occasionally appear in the wards. There have been 3,762 dressings made, 115 plaster-of-paris casts applied, and 18 operations performed. During the past year 30 new patients were admitted. There remained from the previous year 44 patients, making the number treated in the hospital during the past year 74.

SPECIAL ARTICLES

METHOD OF INSTRUCTION IN SURGICAL PATHOLOGY.¹

BY

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Clinical instruction in the out-patient department and in the hospital wards has and will always have certain defects and limitations as a complete method of instruction.

The question to be solved is, Can these limitations and defects be removed?

The method of instruction in the surgical pathologic laboratory of the Johns Hopkins Hospital has reached a sufficiently satisfactory development to at least justify its presentation as a possible solution of the problem of teaching surgery.

Clinical instruction in the out-patient department and in the wards must to a very large extent be limited to the observation of the patients treated. The usual time spent by a student in the hospital dispensary and wards is two years. During this time many important surgical diseases are seen not at all or so seldom that the student does not get a clear or lasting clinical picture of the disease. Of necessity examples of the various surgical diseases present themselves in no systematic order, and are so scattered that the student seldom, if ever, can observe in the dispensary or even in the ward at the same time the different varieties of affections of a single organ or part. Even in the ward it is very difficult to arrange that the student follow the patient from his admission through the operation and after-treatment, to present to him the diagnosis confirmed in the pathologic laboratory and the result of the treatment when the patient leaves the hospital, and never the ultimate result many years afterward. Although the time between the admission and discharge of the patient is frequently but an interval of a few weeks, nevertheless it is a very difficult problem to keep all the students in the group familiar with even the important details in the history of each patient.

These limitations and defects can be remedied to a very large degree by the method of instruction in the surgical pathologic laboratory.

We may describe this method briefly as follows:

The instruction to the third year medical class in the surgical laboratory is divided into two parts. The first may be called the systematic part, in which the instruction is given by pamphlets, museum specimens, microscopic sections, and illustrations. The second part may be called the routine instruction, which is limited to the fresh material sent to the laboratory from the operating or the autopsy-rooms.

First Part.—For the systematic work the third year student in the beginning of the year comes to the laboratory one afternoon each week. The class is divided into groups of not less than five and not more than ten. Each group is given a pamphlet and a box of microscopic slides stained and labeled. Near each group on a table, a rolling table if possible, are placed the museum specimens discussed in the special pamphlet given to this group. The pamphlet corresponds somewhat to a chapter in a textbook on surgery; for example, Tumors and Inflammations of the Breast, Malignant Tumors of Bone, Inflammations and Tumors of the Thyroid, etc.—*i. e.*, each pamphlet discusses the various affections of a special organ or part. The pamphlet is divided into two parts. In the first part of the pamphlet, for example, Inflammations and Tumors of the Breast, the student is given the number of cases treated during the life of the clinic in relation to the total number of surgical patients. This gives him at once an idea of the relative frequency of the diseases of this organ or part. Then follows a classification of the various diseases with the number of cases admitted for treatment in the surgical clinic. Here the student learns the relative frequency of the various affections of this organ. When no examples of certain rare affections have

come to the clinic for observation it is so stated. The pamphlet then proceeds to give a summary of the clinical history and picture treatment, gross pathologic appearance, and microscopic study of the various diseases of the organ discussed in the pamphlet which have been observed in the clinic, and most important, the ultimate result after leaving the hospital. This general summary corresponds somewhat to what is written in a chapter of a textbook on surgery. It has the advantage, however, similar to that of a monograph, in that it gives the summary of a certain number of specific cases, in each of which the diagnosis has been confirmed by a pathologic study and in which the ultimate result is known from a few months to many years. Descriptions of rare diseases not observed in the clinic can be made from the literature with illustrations. The second part of the pamphlet gives the clinical history, the treatment, the description of the fresh specimen which is preserved in the museum and which the student can find on the table near the group to which he belongs. Then follows the microscopic description, and the student will find in his box of slides a section taken from the specimen he has just examined.

The general part of the pamphlet the student can read at home in connection with his textbook on surgery. When he comes to the laboratory he is advised to take a museum specimen, selecting the various diseases of the organ in a certain natural sequence. This specimen has a surgical and pathologic number which is indexed in the pamphlet, so that the student can quickly turn to the clinical history of this case, and, as in the majority of instances some years have elapsed since the patient has left the hospital, the pamphlet is able to give him the ultimate result. Each museum specimen, therefore, is one identified with an individual, the clinical history and ultimate result of whom the student can read, and he can examine the microscopic section of the museum specimen by which the diagnosis was confirmed. By a careful reading of the pamphlet the student is brought in contact with the relation between the clinical, the gross pathologic and the confirming microscopic diagnosis. In addition, in the pamphlet he will find photographs of the patient illustrating the clinical appearance, diagrams, photographs of the fresh specimen, x-ray photographs, if made, and in some instances photographs of microscopic drawings, and quite frequently photographs of the ultimate result.

Each group, as stated before, is given a pamphlet and a box of microscopic slides, and near the group are the museum specimens discussed in the pamphlets. From time to time the groups exchange material, so that by the end of the third year a large field of surgery is covered.

I believe this method presents surgery to the student in just as systematic a manner as a didactic lecture, with the great advantage that he reads instead of listens, and with his reading he has object lessons illustrative of the text. I have found that very little demonstration is necessary. The student works quietly by himself, just as he should in the dissecting-room or chemical laboratory. He is brought in close contact with the disease, with each specimen he can get in a few minutes the entire history of the case and the ultimate result. This is impossible with the patient. While this work in the laboratory is going on the third year student observes patients in the out-patient department and in the surgical clinic. When, for example, he sees a patient with the clinical appearance of an exophthalmic goiter, he will have read in his pamphlet a summary of the clinical history, treatment, and ultimate results of all the cases of exophthalmic goiter treated in the hospital up to that time, he will have examined the museum specimens of the thyroids removed and the microscopic sections; he will have seen numerous photographs before and after operation. In the fourth year he will be much better prepared to observe his patients clinically in the wards; when, for example, he sees a case of exophthalmic goiter in the ward, he can go to the library in the hospital and in a few minutes review his third year instruction on this disease. If during the third and fourth year it is his misfortune to see few or no examples of various important diseases he will at least in his third year have read the clinical history, seen the photographs, examined the museum and microscopic sections of one or more examples. This systematic method, therefore, prepares the student to take

¹ Author's abstract read before the American Surgical Association in Washington, May 14, 1903.

better advantage of the patients he sees clinically in the dispensary and in the ward, and it fills the gaps which cannot be avoided in clinical teaching.

Although such a course is called surgical pathology its ultimate aim is really clinical diagnosis taught, however, from the museum specimen and microscopic section instead of the patient. Clinical instruction should and must always be considered the most important part of medical teaching, and the object of this laboratory course is by no means a substitute, but a supplement; its only object to better prepare the student for instruction in the dispensary or at the bedside.

Such a laboratory course has the great advantage that it utilizes the material accumulated during the entire life of the surgical clinic. The student is brought in contact not only with the patients observed during his two years' course of instruction, but with the entire experience of the surgical clinic. This method stimulates better record, more careful descriptions of the fresh tissue removed at operation and autopsy, and their preservation in the museum. It becomes necessary to keep track of the patients treated in the surgical clinic; one is stimulated to get better illustrations; the history of every important case, every museum specimen, microscopic sections and photographs, similar to a book in a hospital library, are accessible to the student.

The preparation of the pamphlets is not specially difficult. Once made, they can be added to from year to year. The photographs necessary for a set of five to ten pamphlets and the microscopic sections will last for years. The museum specimen is practically indestructible.

In addition to the systematic course just described the fresh material from the operations and autopsies is used. In the first part of the year each fresh specimen is assigned at once to a third-year student. The probabilities are that he has seen this patient in the dispensary or in the surgical clinic; in any event he is instructed to make a summary of the clinical history and record the clinical diagnosis. He examines and makes a description of the fresh specimen and makes his own naked eye diagnosis. The afternoon on which the entire class meets in the laboratory those students who have been assigned fresh material meet the instructor in a small room. The cases are discussed, frozen sections are exhibited. After the first of January the class meets on two afternoons in the week. By this time the students have had an opportunity from the systematic course and from the study of a certain number of fresh specimens to acquire a certain amount of familiarity with surgical diseases, and for this reason the demonstration of the fresh material is made before the entire class. The cases are presented by the student to whom the specimen was assigned. By this time the student has been brought in contact with the various surgical diseases from different standpoints. He has studied quite a number systematically in the pamphlets, illustrated by the museum specimen and microscopic section. He has examined personally a number of fresh specimens in conjunction with the clinical history. He has a certain number of cases clinically in the surgical dispensary and clinic. For this reason the student can better appreciate now a general demonstration and discussion on the routine fresh material, so that while he is continuing to study by himself the experience of the surgical clinic of the past, he is brought more and more in contact with the material of the present. It is my rule to exhibit those specimens which the student has seen as fresh material again when it has become an alcohol museum specimen, so that he can compare the difference between the fresh and the alcohol specimen. As much as possible the student is informed of the ultimate microscopic diagnosis.

About once a month a lantern-slide demonstration is given. The first demonstration, for example, on inflammations and tumors of the thyroid is given the class, after this pamphlet has been studied by each group. I am quite positive that the time necessary to give such a course is no more than that which would be taken by a course of didactic lectures. The properly-prepared pamphlet is certainly better than any notes of a lecture which can be taken by a student. He can digest most surely what he reads better than what he hears, especially if during his reading object lessons in the shape of photographs, museum specimens and microscopic sections are before him. The

instructor can conform his talking to the demonstration of fresh specimens, to general remarks on certain more difficult problems, and to a certain amount of personal instruction. The method of teaching is not only more satisfactory to the student, but infinitely more so to the teacher.

Such a course may be difficult to establish, but when once established it can be maintained with a minimum of labor and a maximum of results. The good results are not only to the student, but to the teacher and to the surgical clinic.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

May 23, 1903. [Vol. XL, No. 21.]

1. Suppression of Urine, with Report of a Case Enduring Eight Days: Relieved by Decapsulation of the Kidneys. HORACE J. WHITTAKER.
2. Contribution to the Surgery of Gastric Ulcer. VAN BUREN KNOTT.
3. The Surgical Conception of Pyloric Obstruction. H. D. NILES.
4. The Serum Diagnosis of Tuberculosis. L. M. LOEB.
5. The Transmission of Yellow Fever. JAMES CARROLLE.
6. The Stegomyia and Fomites. STANFORD E. CHAILLE.
7. Combined Intrauterine and Extrauterine Pregnancy: Operation and Recovery. G. J. HAGENS and J. J. MOORHEAD.

1.—See *American Medicine*, Vol. V, No. 20, p. 772.

2.—See *American Medicine*, Vol. V, No. 20, p. 773.

3.—See *American Medicine*, report of fifty-fourth annual session of American Medical Association.

4.—**Serum Diagnosis of Tuberculosis.**—L. M. Loeb discusses different methods advocated for the diagnosis of incipient tuberculosis, together with the objections to them. He describes the agglutination reaction according to the method of Arloing and Courmont. With their cultural methods some observers claim a motility equal to that of *B. typhosus*, but the writer has never found more than an active Brownian motion in the hanging drop preparation. He gives the modifications in technic made by other investigators, and his personal observations in 52 cases, and reaches the following conclusions: Under various conditions animal sera agglutinate homogeneous cultures of human tubercle bacilli in liquid media. Such sera may be obtained from the body without the presence in it of *Bacillus tuberculosis*, and it is doubtful whether the agglutinative powers are ever due to the specific action of the latter. The presence or absence in adult human blood-serum of agglutinative properties for tubercle bacilli is no decisive evidence of the presence or absence of tuberculous lesions in the body. [H.M.]

5.—See *American Medicine*, Vol. V, No. 21, p. 819.

6.—See *American Medicine*, Vol. V, No. 21, p. 819.

7.—**Combined Intrauterine and Extrauterine Pregnancy.**—G. J. Hagens and J. J. Moorhead briefly review the literature of the subject, which is very scanty, indicating that this form of gestation is infrequent. In the case reported a perfectly formed fetus was removed from the right broad ligament by vaginal section, and 20 hours later a second was expelled from the uterus. [H.M.]

Boston Medical and Surgical Journal.

May 21, 1903. [Vol. CXLVIII, No. 21.]

1. A Study of 534 Operations Upon the Gallbladder and Bile Passages, with Tabulated Report of 547 Operated Cases. WILLIAM J. MAYO.
2. The Germicidal Action of Alcohol. CHARLES HARRINGTON and HAROLD WALKER.
3. Report of Five Cases of Fracture of the Hip in Children. H. M. CHASE, JR.
4. A Glass Urethral Irrigator. DAVID D. SCANNELL.

1.—See *American Medicine* report Congress of American Physicians and Surgeons, Washington, May 12-14, 1903.

2.—**Germicidal Action of Alcohol.**—Harrington and Walker, after a series of experiments, come to the following conclusions: 1. Against dry bacteria absolute alcohol and ordinary commercial alcohol are wholly devoid of bactericidal power, even with 24 hours' direct contact, and other preparations of alcohol containing more than 70% by volume are weak in this regard, according to their content of alcohol—the stronger in alcohol the weaker in action. 2. Against the com-

moner, nonsporing, pathogenic bacteria in a moist condition, any strength of alcohol above 40% by volume is effective within five minutes and certain preparations within one minute. 3. Alcohol of less than 40% strength is too slow in action or too uncertain in results against pathogenic bacteria, whether moist or dry. 4. The most effective dilutions of alcohol against the strongly resistant (nonsporing) bacteria, such as the pus organisms, in the dry or moist state, are those containing from 60% to 70% by volume. 5. Unless the bacterial envelope contains a certain amount of moisture it is impervious to strong alcohol; but dried bacteria, when brought into contact with dilute alcohol containing from 30% to 60% of water by volume, absorb the necessary amount of water quickly, when the alcohol can reach the cell protoplasm and destroy it. 6. The stronger preparations of alcohol possess no advantage over 60% to 70% preparations, even when the bacteria are moist; therefore, and since they are inert against dry bacteria, they should not be employed. 7. Provided the skin bacteria in the deeper parts can be brought into contact with disinfectants alcohol of 60% to 70% strength may be depended upon usually, but not always, to destroy them within five minutes. [A.B.C.]

3.—Fracture of the Femoral Neck in Children.—H. M. Chase, Jr., states that this accident is not so rare as is commonly supposed. The ages of five reported cases varied from 11 to 16 years. A noticeable feature in several of the cases is the mildness of the symptoms. The author says these cases illustrate the early age at which fracture occurs, the possibility of fracture following rapid increase in weight, the occurrence of fracture from slight trauma, and the possibility of relatively slight disability following fracture of the femoral neck. They emphasize that the bone may be fractured, giving rise to slight symptoms, the pain developing a number of weeks or months afterward without known cause; and that depression of the femoral neck from fracture predisposes to further depression and a consequent gradual increase of disability. In contrast to the effects of fracture of the femoral neck in later life, we see in childhood less marked immediate effects, while the remote effects are more disabling; and if recent cases of fracture pass unrecognized, danger lies in confounding their late results with hip disease. Attention is called to the necessity for care in diagnosis. Other affections of the hip-joint are to be ruled out, and a skiagram should make positive the true condition. [A.B.C.]

4.—Glass Urethral Irrigator.—D. D. Scannell found the repeated sterilization of rubber catheters very destructive and somewhat expensive in a large clinical practice. He devised a curved glass irrigator 14 cm. (5½ inches) long, and in size equal to a No. 13 of the French scale. This tube is perforated by several openings and it terminates in a blunt conical perforated end. The other end is suitable in shape for a rubber-tube attachment. The author commends it after extensive trial, and holds that it possesses the following advantages: Cheapness, durability, ease of sterilization, cleanliness, facility of use, volume of injected fluid, and adaptability for posterior irrigation by Janet's method. An illustration accompanies the article. [A.B.C.]

Medical Record.

May 23, 1903. [Vol. 63, No. 21.]

1. Some Unusual Cases of Appendicitis. ROBERT F. WEIR.
2. On a Case of Complete Fibrous Obstruction (Congenital?) of Both Superior and Inferior Vena Cavae in a Young Man of 18 Years: First Case Recorded. ALFRED MEYER.
3. Total Respiratory Failure from Ether: Artificial Respiration for Over Four Hours; Recovery. H. H. EVERETT.

1.—Unusual Cases of Appendicitis.—Robert F. Weir says the unusual cases of appendicitis should be reported. Conforming to this view he reports several unusual and interesting cases: 1. Internal intestinal strangulation from an elongated inflamed appendix. In this instance the distal end of the appendix was adherent to the side of the lumbar vertebra and through the loop thus formed some 10 inches of the small intestine had passed and become strangulated. Operation resulted in recovery. Several somewhat similar cases are reported by the writer. 2. Strangulated hernia with gangrenous appendix.

The patient was a woman of 67. She had noticed pain and a tumor in the right groin for a week. Operation showed a strangulated hernia including the appendix, which was gangrenous. Recovery followed. Again several similar cases are reported. 3. Tumor of the cecal wall following removal of the appendix. The patient was a young woman who had recurring attacks which simulated appendicitis after her appendix had been removed for several months. Operation revealed a hard tumor 2 cm. (¾ inch) in diameter at the site of the appendiceal stump. It was removed and a microscopic examination showed it a chronic inflammatory condition of the stump. 4. Appendicitis with general peritonitis; operation; repeated infusion and recovery. The patient was a man of 32, operated upon for appendicitis of three days' duration. A ruptured gangrenous appendix, with general purulent peritonitis, was found. Free irrigation and free drainage. On the second day there was persistent vomiting and high temperature. Venous infusion of 1,000 cc. of saline solution and lavage frequently repeated for some three days were believed to have saved the patient's life. 5. Cancer of the appendix. Fourteen cases have been reported since 1896. The few that have been followed since operation show as yet no recurrence. Weir's patient was a man of 23, who had 13 attacks of appendiceal pain. Microscopic examination of the removed appendix showed adenocarcinoma. No recurrence after three years. [A.B.C.]

2.—Complete Fibrous Obstruction of Both Superior and Inferior Cavae.—Alfred Meyer reports the case. The patient was a young man of 18, with personal and family history which threw no light on the condition. He had never been strong, had general enlargement of the lymph-glands and was poorly nourished. Three weeks before death he presented the general symptoms of cardiac insufficiency from a general adherent pericardium. Necropsy showed the true condition. The report in part says: Superior cava ends at a distance of 6 cm. (2½ inches) above auricle. Near the termination of the cava the wall is somewhat thickened. Above the atresia, for distance of ½ cm. there is only some fibrous tissue in which both innominate veins end. There is no evidence of any inflammatory process at or near the atresia of the cava. The vena azygos major quite large, opens into the cava at the usual location and below the atresia. The inferior cava shows atresia at the diaphragm; there is fibrous tissue about 1 cm. or 1½ cm. thick about its termination. The upper end of the cava is rather conical, the wall quite thickened, the atresic part is surrounded by the area of perihepatitis on the upper surface of the liver, but the vein does not appear to be affected by the perihepatitis. All return circulation had been carried on by the enlarged vena azygos. The author has found no similar case reported. Various theories are advanced to account for the condition. [A.B.C.]

3.—Respiratory Inhibition from Ether: Artificial Respiration for Over Four Hours; Recovery.—H. H. Everett reports the case. While under ether anesthesia for an appendiceal operation the patient, a man of 20, suffered complete respiratory inhibition, became cyanotic, and death seemed imminent. Strychnia and atrophin had proved unavailing. Artificial respiration was instituted and 30 minims adrenalin chlorid were given. Soon the cyanosis disappeared and the pulse dropped from 120 to 96. Thereafter any cessation of artificial respiration resulted in cyanosis and threatened death. Most of the many measures resorted to for combating such conditions were tried without avail. Nothing seemed to be of service except the artificial respiration and the adrenalin chlorid. The latter after the first and second doses of 30 minims each was given in 10-minim doses every hour during artificial respiration, and for the next day the same dose was repeated every two hours. There was no effort at voluntary respiration for 4 hours and 20 minutes after artificial means were adopted. During all this time the pulse was good and the skin pink and warm, showing the circulation good. This is attributed by the author to the excellent effect of the adrenalin chlorid, but for which he thinks patient had surely died. The respirations, which were 20 for some hours, gradually rose to 26, where they remained for some days and then subsided to normal. The patient's recovery was complete. [A.B.C.]

New York Medical Journal.

May 16, 1903. [Vol. LXXVII, No. 20.]

1. The Duties and Responsibilities of Trustees of Public Medical Institutions. W. W. KEEN.
2. Cancer and Immunity. A. F. JONAS.
3. The Relation of Cholelithiasis to Acute Pancreatitis. JOSEPH WIENER, JR.
4. An Unusually Long (Twenty Weeks) Case of Relapsing Typhoid Fever. W. L. STOWELL.

1.—See *American Medicine*, Vol. V, No. 20.2.—See *American Medicine*, Vol. V, No. 19.

3.—**Cholelithiasis and Pancreatitis.**—Joseph Wiener, Jr., gives a brief review of the literature of 32 cases of acute pancreatitis associated with cholelithiasis and reports a case in full. He believes that in many, if not all, the cases there is a causal relationship between the two conditions. In not a few of the cases positive proof was found at the autopsy that the duct of Wirsung had been occluded by a gallstone. In the case of Dieckhoff a biliary calculus had actually found its way into the pancreatic duct. In Thayer's case we have a history of several attacks of biliary colic followed by jaundice. Then came the fatal attack of acute pancreatitis. At the autopsy the common duct was found enormously dilated, and in the duodenum was found the large calculus which had undoubtedly caused the duct occlusion. The cases of Day and Cutler presented similar features. The author urges early operation in these cases. The case reported by Wiener is that of a woman of 41, who was suddenly seized with violent pain in the epigastrium. She was nauseated and there was moderate tenderness over the entire abdomen, and some rigidity over the right rectus. Later the pain became colicky in character. The pulse-rate and temperature gradually increased. An exploratory incision was made. The gallbladder was found distended, and there was a large stone in the cystic duct. This was milked back into the gallbladder and a cholecystectomy performed. The head of the pancreas felt hard, but it was not enlarged. Complete recovery followed the operation. [C.A.O.]

4.—**A long case of relapsing typhoid fever** is reported by W. L. Stowell in a young woman of 30. The first three weeks was what might be called normal typhoid, the temperature reached normal and the patient felt well. Suddenly the temperature ran up and the first relapse was on. After that the temperature fell rapidly, but not quite to normal. After an interval of six days it went up again. These fluctuations were more or less irregular, so that it would seem that there were in all about six relapses; each one of these seemed to be shorter and less severe than the predecessor. The disease lasted 20 weeks. Calomel was used early and freely, and later. Naphthalin, salol and guaiacol were given almost continuously. Cold sponging did not avail much. The cold pack in the wet sheet was better, as the patient would fall asleep while so enveloped and the temperature would fall, delirium cease, and the thready pulse become stronger. [C.A.O.]

Medical News.

May 23, 1903. [Vol. 82, No. 21.]

1. Fracture of the Spine: Three Cases. HOWARD J. WILLIAMS.
2. Rheumatic Tonsillitis in Children. JOHN STEWART.
3. Notes on Blood-pressure in Man. S. S. GOLDWATER.
4. The Circulation in Puerperal Eclampsia. DOUGLAS H. STEWART.
5. Some Interesting Phenomena of Specific Immune Sera. ARTHUR P. HITCHENS.

1.—**Fracture of the Spine.**—H. J. Williams reports three cases. They are discussed under the following headings: Case I.—Fracture of the sixth cervical vertebra; bilateral paralysis of the wrist, fingers and intrinsic muscles of the hands; bilateral anesthesia of the inner border of the forearm and ulnar side of the hand, and complete paraplegia below the third rib; sudden death after 27 hours. Case II.—Gunshot fracture of the fifth dorsal vertebra; complete transection of the cord; paraplegia; laminectomy; death after 90 days. Case III.—Fracture of the first lumbar vertebra; motor paralysis below the great tro-

chanters; sensory paralysis below the knees; laminectomy; death after 19 days. Concerning operative treatment he says: Instead of waiting we should operate earlier in all cases of spinal fracture and oftener in the severer cases; knowing that even if the cord is completely crushed the destroyed zone may be removed and the ends approximated with hope of successful union. The absence of the deep reflexes should now be the most urgent reason for prompt exploratory operation, for it demonstrates that the cord is severed and if possible its continuity should be restored at once. Early operation would antedate the stage of secondary degeneration and take advantage of the possibilities of early regeneration. This will apply with equal force to the employment of myelorrhaphy in spinal crushing and to laminectomy in spinal compression. [A.B.C.]

3.—**Blood-pressure in Man.**—S. S. Goldwater concludes an exhaustive research in this interesting field, many experiments were made and blood-pressure was studied in a number of normal conditions and positions and under the influence of drugs. Various pathologic conditions were studied in relation to blood-pressure, particularly aneurysms, arteriosclerosis, nephritis, organic heart disease, various nervous and mental conditions, fevers, etc. Such a wide and varied field is covered by the investigation that the article should be read *in toto* to be appreciated. He says in conclusion: We are able to recognize at least one distinct service which blood-pressure has done. It has proved that arterial tension may be extremely low during the early stage of high fevers, when the pulse is full and bounding; relaxation of the arterial walls is no doubt the cause. A question which suggests itself is whether treatment having in view a better control of the circulatory apparatus during this period might not prove of some benefit. The clinician must not be surprised to find abnormalities of pressure during convalescence; blood-pressure is at this time as sensitive and changeable as the frequency of the pulse, and may rise or fall 20 mm. or 30 mm. in the course of an hour without apparent cause. [A.B.C.]

4.—**The Circulation in Puerperal Eclampsia.**—D. H. Stewart asserts that some substance in eclamptic blood favors reabsorption to such a degree that stercoremia gravidarum appears an exact term to designate a blood poisoned by its own excretions and then irritating the nerve centers until convulsions arise. In eclampsia the left ventricle is hypertrophied. We might have dilation were it not for the hypertrophica gravidarum which makes the heart wall of the pregnant woman thick and strong. The pressure on the arterial side is more than 10 to 1 on the venous. This pressure falls after venesection because poison is withdrawn and not because blood is drawn. To diminish arterial tension one would bleed from an artery, not from a vein. Removal is better than antagonism, and theoretically, a daily loss of 4 ounces of blood is worth the whole list of cardiac depressants from aconite bromid and chloral down to veratrum. In venesection consider the age of the patient. The pulse will soften as heart-irritation and heart-effort is relieved by extracting poison. Less blood in the coronary arteries will weaken the heart stimulus, arterial resistance will fall with decreasing dilation, and tension and friction in the arterioles will abate as expansion lessens. If the kidney is not excreting properly the waste products already in the vena cava are fortified by those in the renal stream, broadly speaking, the caval blood, is made thoroughly venous and consequently the heart is overimpelled. Finally, as the thorax aspirates the venous so it drives the arterial flow, and as the arterial circulation is already overfilled, in puerperal eclampsia calm respiration is decidedly desirable. [W.K.]

5.—**Specific Immune Serums.**—A. P. Hitchens discusses the phagocytic theory of Metschnikoff and the alexin theory of Buchner, also Pfeiffer's reaction, together with the researches of Bordet, Morgenroth, and Ehrlich, in regard to cytolysins, and finally the agglutination reaction of immune sera, noting its value in diagnosis, especially in regard to the cause of death in medicolegal cases. He also calls attention to the delicacy of the precipitin test in albuminuria as well as in differentiating blood, and concludes with a review of observations as to immunization against immune serum. [H.M.]

Philadelphia Medical Journal.

May 23, 1903. [Vol. XI, No. 21.]

1. The Third and Final Report of a Case of Presystolic Mitral Murmur, Complicating Pregnancy, etc., with Exhibition of Specimen Showing Triplet Valvular Lesion, viz.: Mitral Stenosis, Tricuspid Stenosis, and Aortic Stenosis. JAMES TYSON.
2. The Present Treatment of Puerperal Septic Infection. EDWARD P. DAVIS.
3. Decreasing Fecundity: Its Causes and Results. SCOTT P. CHILD.
4. Malnutrition. THEODORE J. ELTEKICH.
5. A Fatal Case of Anthracosis, with Autopsy. THOMAS STOTESBURY GITHENS.
6. Upon the Local Use of Cocain in the Nose. WM. G. B. HARLAND.

1.—Third and Final Report of a Case of Presystolic Mitral Murmur, Complicating Pregnancy, Etc.—James Tyson gives the third and final report of this case. The previous reports have been abstracted in *American Medicine*. The woman died May, 1902. The autopsy revealed mitral, tricuspid, and aortic stenoses. [F.C.H.]

2.—The Present Treatment of Puerperal Infection.—E. P. Davis lays stress upon the necessity of absolute asepsis and antiseptics as an important role in the prevention of puerperal infection. Aseptic and simple cleanliness are not sufficient; the thorough use of antiseptics upon the hands of the physician and nurse and upon the external genital organs of the patient are requisite. The blood loss must be reduced to a minimum, as loss of blood distinctly predisposes to infection. Upon the development of septic infection the first duty of the physician is to thoroughly cleanse the uterus and vagina. Curetment should be done gently and with a dull curet. For the abdominal pain a turpentine stupe should be applied and over this is laid an ice-bag; he considers this method of application the best for this purpose. Medication should be limited to those drugs which act most efficiently as tonics and stimulants to the nervous system and which produce contraction of the uterus. Strychnin and ergot are the most valuable. Good nursing and liberal feeding are very valuable. Collections of pus occurring during puerperal infection should be emptied in whatever situation the collection occurs and in whatever organ. The following methods of treatment must be considered at present as experimental: The use of antistreptococcic serum (he has seen brilliant results follow its use in some cases and in others absolute failure); the use of nuclein to produce increased leukocytosis. Practically it is impossible at present to assert that such is the case; the employment of Credé's silver ointment; the intravenous injection of formalin (he thinks no adequate evidence has been presented to warrant the further employment of this method); écouvillonnage, which is at present peculiar to the French. The écouvillon is a swab containing bristles, by which the uterine cavity is vigorously brushed by rotating the swab. The question of hysterectomy for puerperal septic infection and hysterectomy during labor in infected cases is detailed. Methods of treatment which must be considered injurious are the administration of drugs to a septic patient to reduce fever; useless drugging in over anxiety to stimulate the heart; the effort to check the purgation in septic cases which nature often sets up, and the mistake of repeated intrauterine manipulation. The methods that should be employed instead are detailed. [F.C.H.]

5.—A Fatal Case of Anthracosis.—T. S. Githens details the history and postmortem findings of a case of anthracosis. The reader is referred to the original article. In a careful review of the literature of the subject he has not been able to find any mention of the disease in the United States, and only one from this continent. [F.C.H.]

6.—The Local Use of Cocain in the Nose.—W. G. B. Harland believes that the accidents which occur from the use of cocain in laryngology are due to errors of dosage. The usual dangers can be summed up as follow: Drug habit, secondary congestion and hemorrhage, local subjective sensations, and effects attributed to the so-called idiosyncrasy, each of which is detailed. He considers that adrenalin has proved a most valuable aid in lessening the dangers and in enhancing the powers of cocain. Cocain may be safely used in spray form in the strength of a 1% aqueous solution. If used on a cotton applicator, 5% should be the maximum strength employed. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

REVIEW OF LITERATURE

The Bacteriologic Diagnosis of Typhoid Fever.—In a preliminary communication Z. F. Orloffsky¹ summarizes the result of his investigations as follows: 1. A convenient and safe method of bacteriologic blood examination consists in drawing blood from an arm vein, and making a bouillon culture. 2. The blood in typhoid fever contains bacilli in almost all cases. 3. The appearance of bacilli in the blood seems to be an early one; twice they were found on the sixth day when other symptoms were indefinite. 4. The cultures develop about the third day. It is necessary to take at least 1½ cc. to 2 cc. of blood and 200 cc. or more of bouillon to ensure success. 5. In doubtful cases it is imperatively advisable to make this bacteriologic blood test. If a positive result is obtained the diagnosis becomes certain; otherwise a second test is requisite before typhoid can be excluded. [L.J.]

The Occurrence and Mortality of Typhoid Fever in Children.—Henry Koplik² says that typhoid fever in the newborn runs an atypical course, the infection partaking of the nature of a hematogenous one. Evidence of cases occurring later in infancy, before the age of 12 months, and also up to the age of 2, is constantly multiplying. The frequency of the disease in this class as compared with older children and adults cannot be stated in figures until a sufficient number of cases have been observed and diagnosed with modern methods. Statistics from a host of observers are given by Koplik in order to determine the mortality rate, the frequency of perforation, etc., in patients between the ages of 2 and 10. From a study of these statistics and from his own cases he states that the mortality of this class varies from 6.6% to 13%, neither his own series nor the collated cases supporting the view that typhoid fever is always a mild disease during that period of life. As to perforation he has had two cases in his series of 100. The severer forms of myocarditis and endocarditis are rarer than in the adult. [A.G.E.]

Accessory Pock Marks in the Course of Vaccination and of Postvaccinal Exanthems.—A. Groth³ considers the accessory pock marks in the immediate neighborhood of the field of vaccination to be rudimentary vaccinations, and to be due in most cases to transference of germs by way of the lymph paths from the point of vaccination. These germs are not necessarily such as carry the vaccine virus. These vaccinole are rarely typical pustules; they are usually very small, and appear and disappear in the course of about four days. In a few cases they are probably due to superficial lesions of the skin being infected directly from the pock. Generalized vaccinia—a general pustular eruption with the typical characteristics of the pocks—is the result of an infection of the organism with vaccine. The pustules must be formed from within, that is, the poison must be carried along the blood paths before the eruption can be considered as generalized vaccinia. Wherever multiple eruptions are the cause of numerous local infections the condition must be considered as one of postvaccinal local infection, probably due to scratches. Whether such a state is in any way connected with generalized vaccinia has not been determined as yet. He warns against permitting children with skin disease to be vaccinated, as they are very liable to severe postvaccinal eruptions. [E.L.]

Oliver's Sign in Aortic Aneurysm.—Though 25 years have elapsed since Oliver described his sign, its value is still far from being universally acknowledged. While some authors dwell on its positive significance, others emphasize its negative features. P. T. Grosdowski⁴ reports 10 original cases of aneurysm, and infers from a detailed study that Oliver's sign of tracheal tugging is not pathognomonic of thoracic aneurysm. The sign may be present in the mediastinal tumors as well. Furthermore, the sign can no longer be considered as conclusive evidence of aneurysmal dilation of the beginning or lower posterior concavity of the aorta since it has been observed

¹ Russki Vrach, March 1, 1903.² Archives of Pediatrics, May, 1903.³ Münchener medizinische Wochenschrift, January 20, 1903.⁴ Russki Vrach, February 22 and March 1, 1903.

in aneurysm of the entire thoracic portion, and even in aneurysm of the descending part. Nevertheless, in conjunction with other indications of aneurysm, Oliver's sign has a distinct value as additional evidence. Tracheal tugging is not a constant factor, but depends on the cardiac activity; it is well marked when the heart is beating strongly, and it may become indistinct or disappear with the onset of heart failure. [L.J.]

Inversion in the Treatment of Acute Pulmonary Edema in Young Children.—T. S. Southworth¹ reports the case of an infant of 13 months, which was suddenly seized with acute pulmonary edema one month after an attack of pneumonia. The child was inverted and held in that position while firm, steady pressure was made over the lungs, with stroking pressure over the bronchi toward the head. A little frothy fluid tinged with blood ran out of the mouth and nose. Decided relief of the infant was immediately noted by those in attendance. The child was then placed in bed with the foot considerably elevated and the usual medicinal treatment instituted. Rapid recovery followed. As several previous cases in the same hospital had died despite the same medication it seems that the expression of the accumulating serum in this instance was a life-saving measure. The undigested and offensive stools which resulted after purgation in this case are considered as suggestive of acute indigestion as one of the possible etiologic factors in acute pulmonary edema of young children. [A.G.E.]

Behavior of the Chlorids in the Stomach and the Cause of the Absence of Hydrochloric Acid in Gastric Carcinoma.—A number of clinicians are of the opinion that the secreted hydrochloric acid is destroyed by substances contained in the carcinomatous stomach, others believe that less hydrochloric acid is secreted; they find the cause of the latter was believed to be the gastric catarrh so frequently associated with carcinoma, especially as atrophy of the mucous membrane and the glands of the stomach have been found in this disease. But since free hydrochloric acid may be absent at a very early stage, and can reappear after removal of the cancer, it must follow that the cause of the absence of the acid is removed with the carcinoma, and that the glandular atrophy is only secondary. Reissner's² examinations of cancer patients have moreover shown that the total chlorids are relatively high, due to an increase of the combined chlorids. The chlorids found in the stomach are derived from the following sources: 1. The neutral chlorids of food and saliva. 2. The free hydrochloric acid secreted by the gastric glands and that combined with albumens. 3. The combination of chlorin with ammonia. Reissner believes that the total chlorids are increased because a portion of the secreted hydrochloric acid is neutralized by an alkali derived from the fluid discharged from the ulcerating surface of the carcinoma and which in itself possesses a large amount of chlorin. He states that a cancer produces changes in the chemistry of the gastric secretion only after it has ulcerated, and that the free hydrochloric acid is absent because its actually secreted amount is diminished and the existing quantity has been neutralized by the alkali mentioned. The cause for both is ulceration of the cancer. [E.L.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

EDITORIAL COMMENT

Foreign Bodies Left Within the Abdominal Cavity.—Many instances in which this accident occurs are obviously not reported even when recognized, and it is fair to assume that a considerable number are never recognized. The various devices resorted to by surgeons minimize but do not render improbable this danger, so long as any article is placed wholly within the abdominal cavity. We can recall several instances coming

within personal knowledge in which a sponge or pad was left within the abdominal cavity, or else operation was done to remove such a foreign body. Seemingly few cases are reported, and yet Schachner¹ collected 155 reported cases of this kind. He says a foreign body left within the abdomen may remain for years without causing symptoms; usually, however, it seeks the route of least resistance and not infrequently causes a sinus which persists until the body escapes or is removed. The more serious fatal termination occurs too frequently. It is somewhat refreshing to read the admission of Robert Weir² that once in his practice an unremoved sponge caused the death of his patient, and on two other occasions postoperative removal of a pad saved the patient's life. That the accident is somewhat more common than is usually supposed is evidenced by Weir's statement that on five occasions he has been called to remove a sponge or pad left within the abdomen by fellow surgeons, several of them men of high repute for painstaking care. He now permits no pad or other piece of gauze to remain in the abdomen unless in the grasp of a forceps or to which clamps have been attached. To obviate the use of clamps, which are somewhat cumbersome, he has substituted ordinary harness-rings, which are sewn to the tape attached to the gauze with which they are sterilized. Sanger³ holds that dry sponges should not be used in abdominal operations, since their roughness injures the delicate peritoneum and causes subsequent adhesions. He moistens the sponges in a solution of sodium chlorid and calcined sodium carbonate. Lilienthal⁴ holds there is but one safe procedure, and that is to make it an absolute rule to place no packing or other substance entirely within the abdominal cavity. His practice is to cut gauze of such length that two-thirds of a piece may be packed within the abdomen leaving the remaining one-third entirely outside the cavity. From the number of reported cases and the doubtless greater number which are not reported, it is evident that the leaving of foreign bodies within the abdominal cavity is a danger to be reckoned with in every case of laparotomy. Too great care cannot be exercised by surgeons in this particular. Prudence would certainly indicate that no sponge, pad or packing should be placed within the abdominal cavity unless secured by tapes, clamps or other means to minimize the danger of their being left.

REVIEW OF LITERATURE

Ectopia of the Kidneys.—O. Engstroem⁵ reports three cases of congenital displacement of the kidneys. The first case was one of horseshoe kidney, situated below the normal level. In the two other cases one kidney only was displaced, in the last instance being associated with rudimentary uterus. The ectopia is explained by interference with the course of development of the primitive kidney. These ectopic kidneys rarely functionate normally, and often present anomalies of form. The diagnosis is usually made by laparotomy or autopsy. The condition has been mistaken for various pathologic conditions of the pelvic organs, or for an abdominal tumor, and the kidney has even been removed under such misapprehension. Recently it has become possible by catheterization to determine the length of the ureters, and this offers a means of more accurate diagnosis. Dangerous complications may arise as the result of ectopic kidneys, among the most important being injury due to exposure of the organ, pressure of the ectopic kidney on the large veins with resulting thrombosis, serious rectal obstruction by the displaced organ, and difficult or impossible labor. [B.K.]

Gastrotomy for Hemorrhage Following Traumatic Rupture of the Gastric Mucosa.—F. v. Winiwarter's⁶

¹Annals of Surgery, November, 1901.

²Medical Record, May 23, 1903.

³Zentralblatt fur Chir., 1896, p. 191.

⁴Medical Record, October 18, 1902.

⁵Zeitschrift fur klin. Med., Bd. xlix, p. 25.

⁶Wiener klinische Wochenschrift, December 25, 1902.

¹Archives of Pediatrics, May, 1903.

²Zeitschrift fur klinische Medizin, 1902, Vol. xlv, p. 71.

patient run against the elbow of a friend while playing football. It struck violently over the region of the stomach. He recovered from the blow and continued the game. Frequently during the next two weeks he complained of abdominal cramps, was nauseated, and vomited several times. He then began to vomit blood, also passing considerable blood in his stools. After medical treatment had failed, and as the patient seemed to be approaching death, Winiwarter opened the stomach and found as the cause of the hemorrhage two tears in the gastric mucosa—one 5 cm. (2 inches), the other 12½ cm. (5 inches) long. The tears were sutured and the abdominal wound healed by primary intention. On account of the severe anemia and the great irritability of the stomach the patient's recovery was slow, and he was not discharged from the hospital for four months. [E.L.]

Thirty-three Cases of Cancer of the Tongue.—S. Boyd and W. H. Unwin¹ give a table summarizing 33 cases of undoubted cancer of the tongue, with brief history, operation, and result. Of the patients 30 were males and 3 females. The mortality was 5. Six patients have remained free from cancer for periods varying from 11 years to 11 months; 16 recurred within a year. The writers have reason to think that some recurrences were due to direct inoculation of raw surfaces from the growth as it was dragged past them. Wrapping the growth to prevent this is not satisfactory, and they propose in the future to wipe over the surface of the growth with a cautery before beginning the operation. The removal of the mylohyoid and anterior belly of the digastric muscles is advisable in advanced cases. Tracheotomy is performed only for dyspnea. [A.G.E.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Gonorrheal Puerperal Fever.—F. J. Taussig² gives a full history of five cases of gonorrheal puerperal fever, quotes the opinions of several authors, advises against curetment as involving too much risk of general infection, and summarizes the essential points in regard to this condition as follow: The gonococcus is the etiologic factor in about one-sixth of all cases of puerperal infection. Although almost invariably secondary to a gonorrheal process elsewhere, this trouble involves an infection of the puerperal wounds, and hence must be classified under the head of puerperal fever. The gonococcus may gain access to the uterine cavity without any internal examination being made, though more frequently this results from digital examinations and operative manipulations, particularly intra-uterine, in the delivery of the child and placenta. The infection shows itself about the sixth or eighth day by rigors, a temperature of 103° and severe abdominal pains. The fever is usually of short duration and the course of the disease mild, but liable to become chronic. Cases in which the temperature begins to rise as early as the sixth day, and runs up to 102° and 104°, are not necessarily caused by mixed infection but may be due to gonococcus alone. The diagnosis is based on the rather late onset, the slow regular pulse, the moderate and steady elevation of temperature, the profuse purulent, glairy discharge, and, above all, the presence of gonococci in the lochia. Prophylaxis is of more benefit than treatment. All pregnant women having gonorrhea should be delivered so far as possible without internal examination. Treatment should be limited to one or two intrauterine douches, frequent vaginal irrigations and rest in bed for a prolonged period of time. [w.k.]

Puerperal Insanity.—R. Jones³ reports the statistics of 259 cases personally observed. The insanity of pregnancy is more common in first confinements among single women, disgrace being an important factor. During pregnancy melancholia is commoner than mania, and suicide must be guarded against. The nearer to confinement the more acute the symptoms. Insanity of the puerperium comes after the first confine-

ment in 33% of the cases. Cases occurring during lactation show marked physical exhaustion, and are more of the depressed than maniacal form, and are more likely to become chronic than in other periods, and there is a tendency to low forms of inflammation, thrombosis, gangrene, and phthisis. When insanity commences more than six weeks after confinement suicidal and infanticidal promptings are commoner than in puerperal cases. A previous record of hysteria is frequent in puerperal insanity. The pathology is that of heredity and stress. Cases of insanity in early pregnancy improve toward the end of pregnancy, whereas those of late pregnancy become worse at the puerperium. Puerperal insanity is markedly recoverable, requiring from three to five months. All cases presenting headache and sleeplessness must have absolute rest. Home treatment is desirable. Presence of the husband aggravates the symptoms. The diet should be liberal and stimulating. Change is indicated when the patient becomes stuporous. Menstruation is a sign of improvement. [H.M.]

Tetanus After Perineorrhaphy.—L. Goth¹ reports a case of tetanus occurring after repair of perineal laceration. The patient had been delivered four months and had nursed the child until she entered the hospital. Ten days later, after the cessation of milk secretion, the perineorrhaphy was performed under chloroform anesthesia. Repeated vomiting followed and the next day a typical tetanus set in, involving both hands and feet. The cramps were repeated two or three times an hour, causing intense pain. Bromid was ordered in moderate doses and in three days the attacks became less frequent and less extensive. On the eleventh day after operation the sutures were removed, the wound having healed by first intention, and on the thirteenth day the last attack of tetanus occurred, the patient leaving the hospital on the sixteenth day. The tetanus in this case, Goth says, cannot be ascribed to any of the usual known causes. It followed the operation immediately, had occurred neither just before the operation or at any earlier date; further, the symptoms abated with increased rapidity after the removal of the sutures. Hence Goth thinks the operation was the cause of the tetanus. [w.k.]

The Bossi Dilator in Accouchement Forcé.—J. B. De Lee² has made a careful study of reported cases of the use of this instrument, and has used it three times. He reaches these conclusions: (1) There is a small field of usefulness for this instrument in cases in which rapid dilation of the cervix is necessary after effacement. Before effacement the colpeurynter should be used. It will be more successful in multipara; (2) the instrument will be useful in dilating the cervix in those cases where manual dilation would be successful. It possesses advantage over the hand in the asepsis in that it is not so tiring, so that the operator may carry out the subsequent delivery comfortably; (3) the instrument is not safe, but requires careful and skilled watchfulness, and one must search for and be ready to repair more or less extensive lacerations. These are greater in primipara; (4) it should never be used in placenta prævia; (5) it does not replace the colpeurynter, the use of the hand, or cervix incisions in all cases. [A.G.E.]

Congenital Absence of the Uterus.—W. A. Dorland³ thinks probably the true percentage is nearer one case in 5,000. A description of four cases is given, and a discussion of their cause. This congenital defect is probably caused by the action of traumatism, microbes, or toxins upon the embryo in utero. The variety of the congenital defect will depend upon the time in embryogenesis at which the disturbing factor becomes operative. If this occurs after the ducts of Mueller have attained their full maturity, but before they have fully coalesced to form the generative organs, the various forms of double uteri and vaginæ are thus evolved. If, however, the arrest of development occur prior to the formation of the uterus by the fusion of these ducts, or prior to the development of the ducts of Mueller themselves, either one or both of these structures fail to appear. Owing to their distinct origin, ovaries may be present in the absence of uterus and vagina. [w.k.]

¹ The Practitioner, May, 1903.

² American Gynecology, April, 1903.

³ Medical Press and Circular, February 4, 1903.

¹ Zentralblatt für Gynäkologie, April 11, 1903.

² Chicago Medical Recorder, April 15, 1903.

³ American Gynecology, April, 1903.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPELMAN

REVIEW OF LITERATURE

A Case of Septic Meningitis Treated with Intravenous Injection of Formalin.—This case is reported by W. H. Corrigan,¹ the patient being a boy of 14, with the typical signs of meningitis, following influenzal otitis media. After the temperature had been abnormally high for 60 hours, 10 ounces of 1-4,000 formalin solution was injected into the left median basilic vein. The temperature fell in five hours from 106.4° to 99.5°, the pulse from 140 to 84, respirations from 32 to 22. Delirium was followed by sleep and convalescence, ending in recovery; it being interrupted temporarily by a metastatic abscess. [A.G.E.]

Pertussin in Whoopingcough.—H. Barasch² advises the use of pertussin (extractum thymi saccharatum) in whoopingcough. It should be administered in doses of one teaspoonful every three hours. [W.E.R.]

Respiratory Gymnastics.—While it is true that general exercises, which increase the pulmonary respiration by increasing the elementary respiration—that is, the interchanges that take place in the structural elements—constitute the most perfect form of respiratory gymnastics, it must be added that they presuppose the ability to perform a greater amount of work than can always be demanded of the very patients who are most in need of increasing the functional activity of their lungs. It is in these cases that local pulmonary gymnastics, properly so called, find their greatest usefulness. The guiding principle in this method is altogether different from that which underlies the use of general exercise for the purpose of increasing the functional activity of the lungs. No attempt is made to create a desire for air, a need for more active respiration. The patients are, in fact, already incapable of completely satisfying the normal respiratory demands, and an endeavor is therefore made to stimulate function without fatiguing the organ. Chiefly the procedures employed in the Swedish movements are resorted to for this purpose. An attempt is made to facilitate either inspiration alone, or expiration alone; or, possibly, both phases of the respiratory rhythm at the same time. Among the procedures intended to increase the amplitude of inspiration, the so-called "respiratory movement" should be given particular prominence. This "respiratory movement," which is commonly employed by Swedish trainers to satisfy the air-hunger induced by the training exercises, is described as follows: The patient raises his arms to the vertical position, at the same time taking a deep inspiration. He then brings the arms backward and downward, thus describing a large movement of circumduction. The result of this maneuver is to raise the chest with the muscles that are attached to the ribs and to the humerus. These movements may be practised either in the erect or in the recumbent posture. In the latter position the resistant plane formed by the bench on which the patient reclines tends to obliterate the normal curves of the vertebral column, so that the upward movement of the ribs is greatly facilitated. In order to obtain the same extension of the spinal column in the erect posture, the patient supports himself on his toes, inclining his body backward during the entire period of inspiration. Expiration is ordinarily passive. Under certain circumstances, however, it may require the aid of the expiratory muscles. Among the latter the abdominal expiratory muscles are most frequently called into action. One of the procedures in the Swedish movements consists in permitting these muscles to remain inactive, and calling into play exclusively the thoracic expiratory muscles. This is accomplished by making it impossible for the abdominal expiratory muscles, particularly the recti, to act. The patient lies prone upon a bench and contracts the extensor muscles of the vertebral column and of the head in such a manner as to raise the head and shoulders. The recti muscles in this position being tense and unable to contract, the patient calls upon all his thoracic expiratory

muscles in his efforts to make a forcible expiration. Swedish movements yield excellent results in the treatment of chronic emphysema. One of the most efficacious procedures consists in passive movements having for their object the mobilization of the ribs. For this purpose direct pressure upon the ribs may be employed; or the muscles that move the ribs may be subjected to various manipulations, especially to a movement that appears exceedingly strange to the observer who witnesses it for the first time. This movement is designated in Swedish "scrufridning," which practically signifies a screwing motion. The patient being seated astride a bench to which his thighs are fixed, two attendants, grasping him by the shoulders, forcibly rotate the trunk upon its axis, alternately from right to left and from left to right. These movements are repeated a certain number of times in succession, and the shaking to which the various bones that compose the thorax are subjected has for its object to cause one bone to play upon another and thus to mobilize, by this general shaking, the vertebrocostal articulations, upon which it would be difficult to act separately. The maneuver designated "*fente en arriere*," is intended to facilitate both phases of respiration: During inspiration the patient thrusts the chest backward in forced extension, brings the arms forcibly to the horizontal position in abduction, and carries one of his legs back to steady himself. During expiration he lowers the arms, inclines the body forward, and brings the legs in line in such a way as to favor mechanically the expulsion of air from the chest. At the same time the patient is instructed to rise on his toes during inspiration, and to flex the knees during expiration. When the vertical position is a source of fatigue to the patient, he may be made to assume the recumbent posture upon a resistant surface—a bench, for example—as in performing the "respiratory movement" already described. This is to obliterate the curves of the spine and to give the ribs a direction which better enables them to attain the maximum degree of elevation.—Tissier's Pneumotherapy (System of Physiologic Therapeutics, Vol. x).

Concerning the Therapy of Croup.—Leopold Bayer¹ treats croup by the administration of ½ grain doses of calomel, alternating every hour with 1/10 grain of apomorphin, until the maximum dose is reached of calomel 8 grains, and of apomorphin ½ grain. The author obtained very favorable results in 20 patients treated in this manner. [W.E.R.]

Guacamphol in Night sweats.—Ladisl² considers guacamphol the best means of stopping night sweats. The dose is 3 to 4 grains, and should be continued over a period of two weeks. Guacamphol splits into guaiacol and camphoric acid in the alkaline medium of the intestine. [W.E.R.]

Pertussin in Laryngitis.—A. Model³ reports the favorable and rapid effects of pertussin (extractum thymi saccharatum) in acute laryngitis, bronchitis and the dyspnea of emphysema. One hundred grains should be taken in the course of a day. [W.E.R.]

FORMULAS, ORIGINAL AND SELECTED.

Snuff for Rhinitis.—In acute coryza Cates⁴ considers the following snuff almost a specific:

- Aluminium acetate,
 - Menthol,
 - Acetanilid, of each 1 grain (0.06 gram)
 - Bismuth subnitrate 1 dram (4.0 grams)
- Dispense in a vial, labeled Catarrh Snuff.

A bit of this snuff the size of a grain of wheat is poured into the palm of the hand and snuffed up each nostril. [H.C.W.]

For Administering Quinin Hypodermically.—Aufrecht⁵ recommends the following formula:

- Quinin hydrochlorate . . . 0.5 gram (7½ grains)
 - Urethane 0.25 gram (3¾ grains)
 - Distilled water 5 grains (80 minims)
- For one injection.

He believes that unpleasant after effects are less likely to supervene than when the drug is given by the mouth. [H.C.W.]

¹ Iowa Medical Journal, April, 1903.

² Prager medicinische Wochenschrift, March 26, 1903.

³ Therap. Monatshefte, 1902, No. 4.

⁴ Prager medicinische Wochenschrift, March 5, 1903.

⁵ Therap. Monatshefte, 1902, No. 7.

⁶ Cincinnati Lancet-Clinic, 1, No. 5.

⁷ Therap. Monatshefte, February, 1903, xvii.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 23, 1903:

SMALLPOX—UNITED STATES.

Cases Deaths

Alabama:	Mobile	May 2-16	13	
California:	Los Angeles	May 3-10	1	
	San Francisco	May 3-10	4	
Florida:	Chipley	May 8-16	9	
	Jacksonville	May 8-16	7	
	Pensacola	May 8-16	5	
Georgia:	Atlanta	May 5-20	4	1
Illinois:	Belleville	May 11-18	9	
	Chicago	May 8-16	8	1
	Galesburg	May 8-16	3	
Indiana:	Ellwood	May 10-17	7	
	Evansville	May 1-16	6	
	Indianapolis	May 8-16	6	1
	Kokomo	May 8-16	1	
Iowa:	Des Moines	May 8-16	1	
Louisiana:	New Orleans	May 8-16	7	1
Maryland:	Baltimore	May 8-16	7	
Massachusetts:	Lawrence	May 2-9	1	1
				Doubtful.
Michigan:	Detroit	May 8-16	33	
	Grand Rapids	May 8-16	2	
	Port Huron	May 8-16	1	
Minnesota:	Winona	May 8-16	2	
Missouri:	St. Louis	May 3-17	17	
Nebraska:	Omaha	May 8-16	1	
New Hampshire:	Manchester	May 8-16	1	
	Nashua	May 8-16	1	
New York:	Elmira	May 8-16	1	
	Rochester	May 7-14	2	
Ohio:	Ashtabula	May 8-16	1	
		Imported from Toledo.		
	Dayton	May 2-16	6	
	Toledo	Apr. 18-May 16	31	1
Pennsylvania:	Pittsburg	May 2-16	48	7
	Philadelphia	May 8-16	35	1
South Carolina:	Charleston	May 2-16	1	
	Georgetown	May 20	1	
Tennessee:	Memphis	May 8-16	3	
Utah:	Salt Lake City	May 8-16	5	1
Washington:	Tacoma	May 4-11	2	
Wisconsin:	Milwaukee	May 8-16	3	

SMALLPOX—INSULAR.

Philippine Islands:	Manila	Mar. 21-Apr. 4	11	2
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SMALLPOX—FOREIGN.

Austria:	Prague	Apr. 18-May 2	11	
Belgium:	Antwerp	Apr. 18-May 2	6	
	Brussels	Apr. 25-May 2		4
Brazil:	Rio de Janeiro	Apr. 19-26		2
British Guiana:	Demerara	April 25		
		Present and spreading rapidly.		
Canada:	Quebec	May 2-9	2	
China:	Hongkong	Mar. 26-Apr. 3	4	1
Colombia:	Bocas del Toro	Apr. 28-May 5		1
France:	Marseilles	May 1-8		1
Great Britain:	Birmingham	Apr. 25-May 2	5	
	Bristol	Apr. 25-May 2	3	
	Dublin	Apr. 30-May 7	23	3
	Leeds	Apr. 25-May 2	14	
	Liverpool	Apr. 25-May 2	69	4
	Manchester	Apr. 18-May 2	17	
	Newcastle-on-Tyne	Apr. 25-May 2	1	
	Nottingham	Apr. 18-May 2	2	
	Sheffield	Apr. 25-May 2	6	2
	Sunderland	Apr. 25-May 2	1	
India:	Bombay	Apr. 14-21		73
Italy:	Milan	Mar. 1-31	1	
	Palermo	Apr. 25-May 2		1
Japan:	Kobe	Mar. 27-Apr. 11	3	
Mexico:	City of Mexico	Apr. 26-May 3	7	10
Russia:	Moscow	Apr. 18-25	5	1
	Odessa	Apr. 19-May 2	4	1
	St. Petersburg	Apr. 4-25	58	12
	Warsaw	Apr. 11-18		3

YELLOW FEVER.

Brazil:	Rio de Janeiro	Apr. 12-26		34
Colombia:	Panama	May 7-14	3	1
Mexico:	City of Mexico	Apr. 26-May 3		1
	Tampico	May 8-16		1
	Vera Cruz	May 2-16	11	5

CHOLERA—INSULAR.

Philippine Islands:	Manila	Mar. 21-28	1	93
	Provinces	Mar. 21-28	164	98
		Not previously reported	14	14
		Mar. 28-Apr. 4	201	141
		Not previously reported	521	261
		Apr. 4-11	64	85
		Not previously reported	547	291

CHOLERA.

Straits Settlements:	Singapore	Mar. 21-Apr. 4		13
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PLAGUE—INSULAR.

Hawaii:	Honolulu	May 10		1
Philippine Islands:	Manila	Mar. 21-Apr. 4	6	12

PLAGUE.

Australia:	Brisbane	Feb. 1-28	5	2
Brazil:	Rio de Janeiro	Apr. 12-26		1
China:	Hongkong	Mar. 27-Apr. 3	28	24
India:	Bombay	Apr. 14-21		1,320
	Karachi	Apr. 4-19	372	340
Mexico:	Mazatlan	May 14		1

Changes in the Medical Corps of the U. S. Army for the week ended May 23, 1903:

BRECHEMIN, Major LOUIS, surgeon, is relieved from his present duties and will proceed to Camp Stotsenburg, Angeles, Province of Pampanga, for assignment to duty as post surgeon, relieving Major Daniel M. Appel, surgeon.

APPEL, Major DANIEL M., surgeon, will proceed to San Francisco, Cal., reporting by telegraph to the adjutant-general of the army for instructions.

LAMBERT, First Lieutenant SAMUEL E., assistant surgeon, will proceed to Fort Keogh for temporary duty. Upon the departure of the Second Squadron, Thirteenth Cavalry, from San Francisco, Cal., en route for Manila, P. I., he will report to the squadron commander for duty as medical officer to accompany the squadron to its destination.

PINKSTON, OMAR W., contract surgeon, now at Kansas City, Mo., is relieved from further duty in the division of the Philippines, and will proceed to Madison Barracks for duty.

RAFTER, JOHN A., contract surgeon, is relieved from duty at Madison Barracks, to take effect upon the arrival at that post of Contract Surgeon Omar W. Pinkston, and will then proceed to his home, West Winfield, N. Y., for annulment of contract.

HOWELL, First Lieutenant PARK, assistant surgeon, is granted leave for eighteen days from about May 14.

SHEPARD, First Lieutenant JOHN L., assistant surgeon, is relieved from further duty at Fort Apache and will proceed to San Francisco, Cal., and report for assignment to duty at the U. S. General Hospital, Presidio.

MILLER, J. E., contract surgeon, is granted leave for twenty-three days.

PETTYJOHN, JOSEPH, contract surgeon, is relieved from duty at Fort Gibbon, Alaska, and will proceed to Vancouver Barracks for further instructions.

GREENLEAF, First Lieutenant HENRY S., assistant surgeon, is granted leave for one month, beginning May 15, with permission to apply for an extension of one month.

BLOOMBERG, First Lieutenant HORACE D., assistant surgeon, leave granted January 12 is extended one month.

PEASE, F. D., contract surgeon, is granted leave without pay, to include June 30, and to take effect upon the expiration of the extension of leave granted April 14.

Changes in the Medical Corps of the U. S. Navy for the week ended May 23, 1903:

WEIBER, F. W., surgeon, granted sick leave for two months—May 15.

MORRIS, L., passed assistant surgeon, ordered to the Minneapolis—May 16.

MICHEL, R. H., assistant surgeon, ordered to the Asiatic station via the Solace—May 16.

BROWN, E. M., assistant surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Hospital, Newport, R. I.—May 18.

HOLLOWAY, J. H., assistant surgeon, ordered to the Baltimore—May 19.

GEIGER, A. J., assistant surgeon, appointed assistant surgeon from May 6, 1903—May 19.

Changes in the Public Health and Marine-Hospital Service for the week ended May 21, 1903:

VAUGHAN, G. T., assistant surgeon-general, detailed to represent the service at the meeting of the Association of Military Surgeons at Boston, Mass., May 20—May 21, 1903.

PERRY, J. C., passed assistant surgeon, to report at Washington, D. C., for special temporary duty—May 17, 1903.

DECKER, C. E., assistant surgeon, granted extension of leave of absence, on account of sickness, for fourteen days from April 24—May 15, 1903.

WILSON, R. L., assistant surgeon, granted leave of absence for seven days from April 28, 1903, under provisions of paragraph 191 of the regulations.

MCLAUGHLIN, A. J., assistant surgeon, granted leave of absence for two months from May 1—May 15, 1903.

WARD, W. K., assistant surgeon, granted leave of absence for three days from May 14, 1903, under provisions of paragraph 191 of the regulations.

FORD, C. B., acting assistant surgeon, granted leave of absence for fourteen days from June 3—May 15, 1903.

FRASER, A. C., acting assistant surgeon, granted leave of absence for forty-five days, on account of sickness, from April 27—May 15, 1903.

MARSH, W. H., acting assistant surgeon, granted leave of absence for seventeen days from May 8—May 15, 1903.

WETMORE, W. O., acting assistant surgeon, granted extension of leave of absence for fourteen days from May 15—May 15, 1903.

WIGHTMAN, W. M., acting assistant surgeon, granted leave of absence for three weeks from June 7—May 19, 1903.

WILSON, W. W. W., acting assistant surgeon, granted leave of absence for fourteen days from May 14—May 19, 1903.

SCHLAAR, W. F., pharmacist, granted leave of absence for three days from May 10, 1903, under provisions of paragraph 210 of the regulations.

American Medicine 889

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War Waged by Means of Bacilli.—Held to be of sufficient credibility to justify cabling, the newspapers say that the revolutionary leaders in Bulgaria have obtained a quantity of plague bacilli and are determined to infect the people of Constantinople, Salonica, and even Berlin, unless the Powers interfere in their behalf. Gunpowder, dynamite, and other explosives have been thought of as conservers of the capitalistic, governmental and educated classes, and of civilization itself, because of the inability of the masses to secure these means of malevolent destruction. In some parts of Europe the pollution of the wells, etc., with disease germs has been credited to some wicked unfortunates. The popularization of knowledge and mechanical skill will perhaps make the control of revolutionary and inferior peoples by the engines and explosives of war no longer possible, or only so with increasing difficulty. We have long wondered if bacteriology would not be seized upon as an implement of war by private or public vengeance. Once at least in old Europe, as history tells, venereal disease was consciously used as a destructive agent for enemies, and its effects on Spain and Europe brought by the returned Columbians was a full repayment, however unintended, for the wrongs done them by the renegades of the discoverers of America. Perhaps the foregoing press dispatch is only a canard, or only a preliminary hint of a new agency to be thrown into the hates and wars of mankind. One must confess that the method could easily be used in some such a way as that suggested. The thought is worth more than a passing smile of incredulity.

The war against bad milk now being waged by the profession of the cities of the nation is a fine proof of the union of science and benevolence, and as the summer approaches far-sighted preparations are being made by every competent health board to strike at the root of the abuse. An indication of how watchful the officers must be is shown in the results of recent "milk raids" carried out in New York under Dr. Lederle's direction. In one out of 162 samples only 44 were above the legal requirement, according to tests made at the laboratory of the Department of Health. In another raid 124 samples were taken, and out of this number only 18 were found to be wholesome. The Sunday raids showed clearly that dealers were taking advantage of

the lax inspection on this day by reducing, watering, and adulterating milk to a greater extent than was done on week days. The value of pasteurized milk is shown in the records of the Infant Asylum at Randall's Island. In 1897 the deathrate among the waifs picked up in the streets of New York and taken to this hospital was 44.36%. A year later a pasteurizing plant was installed and the deathrate dropped to 19.80%. In 1901 it was 18.09%.

A Strabismic Veto.—As indicative of the power of "politics" in some States we recently called attention to the veto of the medical practice act by the Governor of Colorado. That is also noteworthy of the Governor of Illinois of the act regulating "the examinations of those who desire to practise any other system of treating human ailments who do not use medicines internally or externally and who do not practise operative surgery." Both the concocters of this legislative nonsense and their vetoing Governor seem to think that only drugs are "medicines" and that manipulations, massage, etc. (as, *e. g.*, in setting a dislocated hip-joint), are not "operative surgery." Under the old law the osteopaths were enabled to practise their "system of healing" in Illinois, as, according to the Governor, 350 are now doing. Consequently the discriminating chief executive says: "No hardship is imposed upon this class of practitioners and they are deprived of no legitimate privileges." The inference is plain that had such hardship been desired, even by the osteos themselves, the befriending Governor would have interposed to save them from themselves. His especial objection to the bill, however, is that it would have "subordinated the entire machinery of the State government to societies." National Guardsmen should not control admission to the National Guard; the State bar, the pharmacists, the teachers, etc., should not prescribe the conditions as to those desiring to practise law, pharmacy, or school teaching. That is to say, those knowing nothing of a subject should make laws for and govern those who do. In the same way, the logical conclusion must be that those who know nothing about statesmanship and government should be legislators and Governors! The sting is in the tail: "I am far from any intention of casting any aspersions upon the practice of osteopathy, or the practitioners thereof. I believe those who pursue this practice are doing great

good, and are rapidly earning, and justly earning, the confidence of the people." He should have added that some democracies are slowly learning, "and justly learning," lack of confidence in their Governors.

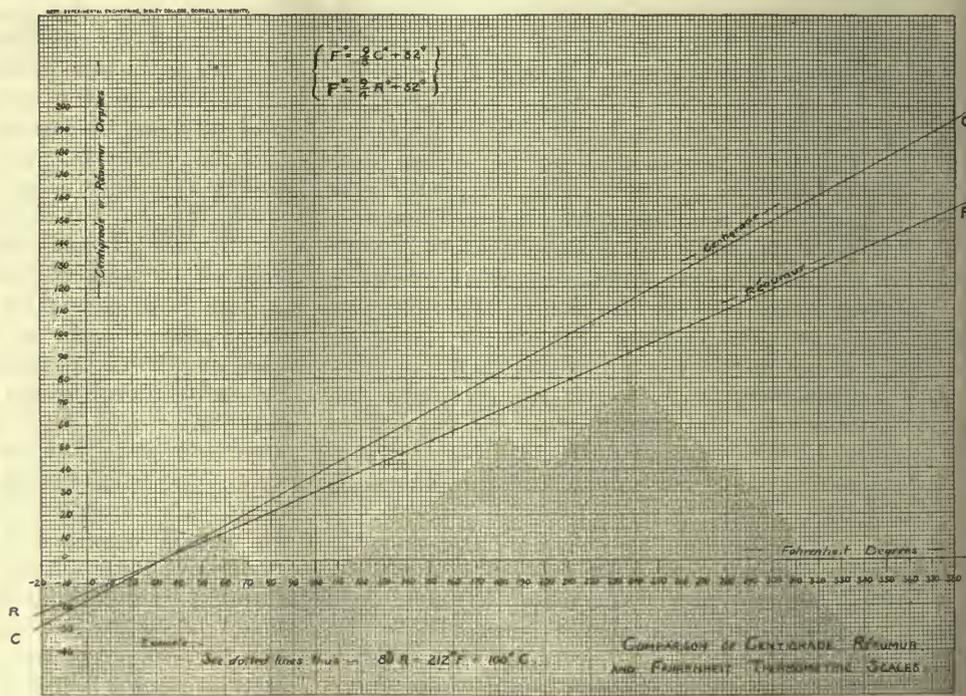
"The Infant Index" is the name of a new system devised by Dr. Lederle, of New York, for the purpose of reducing the mortality among infants from "summer complaint." Already an index of 20,000 infants has been made—this number having been born since January 1—but the records will be carried back to October of last year. In the case of each infant, the name, date of birth, number of birth certificate, the number of the house in which it lives, and the name and nativity of its father, have been written on a card, and to the father will be sent a circular describing in simple terms the proper method of caring for babies in hot weather. The circular will be printed in English, German, Italian, and Yiddish. The city will be laid out in districts, and to each district one or more inspectors will be assigned. It will be the duty of the inspectors to visit continually all children under their charge, and where children are sick to make immediate reports of the cases. In his reports the inspector will state whether the child has been nursed by its mother or whether it has been fed on loose or bottled milk. He will also state the amount of each feeding, the air space of the living-rooms, whether the rooms are clean and the child well cared for, and whether raw fruit has been given to the infant. The health board has in its employ six physicians who are specialists in the diseases of children, and these men will take charge of cases reported by inspectors. The doctors will report on the family history of the infant from a medical standpoint, the character of the sickness, the treatment, and the kind of food which the infant has been taking. Coupled with the crusade against bad milk the board will still further greatly lessen the infant mortality of the city. Could the plan not be adopted by the boards of other cities?

Economy in Nutrition.

—After careful laboratory tests, Professor Chittenden, of Yale (*Popular Science Monthly*, June, 1903), finds that a man who weighed 165 pounds was able to keep up his weight and health on a self-chosen diet at an average food-expense of 11 cents a day. This, moreover, was during a period—a short period, it should be noted—in which he undertook "drastic and fatiguing" exercises. His only food was "a prepared cereal food," milk and maple sugar, taken twice a day, in the quantities desired. Professor Chit-

tenden's work is most scientific, valuable, and suggestive. He rightly contends that the problems of nutrition demand scientific investigation; that they lie at the basis of our social and personal life, that there is an evident and enormous waste in our common diet, that the influence of the mind on digestion and nutrition need the most careful study, etc. Such a preliminary or suggestive investigation is illustrated by this 13-day laboratory test of "H. F." In view of the millions of dollars invested in "breakfast foods" we cannot help being suspicious of the term "a prepared cereal food," used by Professor Chittenden and his subject. Even if the commercially cunning Yankee's head never becomes visible in the wood newspaper pulp, and on the wooden billboards, there are at least the greatest individual variations in the demands of the organism for food. One must doubt the ability of American men generally to keep up their weight and health, while undergoing "drastic and fatiguing" physical exercise, upon 11 cents' worth of maple sugar, milk, and "a prepared cereal" a day, even if the latter were force itself. Radium is a very rare metal. Will the radium-man supplant "Sunny Jim"?

Thermometric Readings.—By the courtesy of the editor of *Science* and of Professor S. W. Dudley we reproduce herewith a diagram which gives at a glance the differences in the three thermometers in common



use. Professor Dudley says that the diagram affords a convenient method of transferring one reading to another provided a high degree of accuracy is not desired. The relations between the three systems are given by the following formulas:

$$F.^{\circ} = \frac{9}{5} C.^{\circ} + 32^{\circ} = \frac{9}{4} R.^{\circ} + 32^{\circ}.$$

Fahrenheit degrees being plotted along a horizontal axis and Centigrade or Réaumur degrees along a vertical

axis, the graphs of the two equations above give two straight lines, as shown, from which, having given a reading in one of the systems, the corresponding reading in either one of the other two may be obtained. Thus to find the equivalent of 80° R. the horizontal from the 80° division on the vertical axis is followed to its intersection with the line marked Réaumur, thence downward where the corresponding Fahrenheit reading (212° F.) is found on the horizontal axis; or upward to "Centigrade" line and thence horizontally to left where the corresponding Centigrade reading (100° C.) is found on the vertical axis. Both lines cross the horizontal, or Fahrenheit, axis at the same point, 32°; the Réaumur line having a slope of $\frac{9}{4}$, the Centigrade line a slope of $\frac{9}{5}$.

"Education Not the Cause of Race Decline" is the title of a masterly article by Dr. Engleman, of Boston, in the current issue of *Popular Science Monthly*. There can be no doubt as to the proofs adduced that although the average graduate family does not reproduce itself, neither does that of any other group of our native American population. The graduate's family is even larger than that of his uneducated brother. As has been emphasized in these columns, the startling truth is that of all the civilized nations, the American has the lowest rate of reproduction. The alumnus of the American college is even more obedient than the foreigner alumnus to the primal command to increase and multiply, for although the child birthrate has been decreasing in our college families, it has been decreasing to a still greater extent in those families abroad. The inattention to this is because the fecundity of the foreign elements in our population is from 2 to 2½ times that of the native. The native American is therefore disappearing, and rapidly, with a birthrate of 17 per 1,000, and less than 2 children to the family. Dr. Engleman contends that the cause of the rapid decline of the formerly high birthrate of the native American is not physical, not due to venereal disease, nor to late marriage, but to the deliberate avoidance by couples of the obligation because of the strenuous, nerve-racking life of the day, and the struggle for luxury. As in the ancient Rome of Juvenal, so now, "Few children are born in the gilded bed to the wealthy dame, so many artifices has she, and so many drugs to render women sterile and destroy life within the womb."

"The Graveyard of the Human Race"—such is a melodramatic description of the city which has often served to point a moral and adorn a tale as to the relative mortality of city and country. There has never been any doubt in the minds of the quoters of the *mot* that in a general way the city was as much fed by the country with men as with food. But the need of extreme caution in the use of statistics is illustrated by Professor Jordan (*Popular Science Monthly*, June), who shows that it is unnecessary that the city's mortality rate should be higher than that of the country. If we can only get the known laws of preventive medicine carried out, if we can stop the unnecessary waste of city life, the deathrate and sickness expense can be made as low as that of the country. But the further fact is

brought out that in the last few years this urban expense has been vastly lessened and that the relative difference is being reduced to zero. Professor Jordan gives the following table:

EXCESS OF URBAN OVER RURAL DEATHRATE.		
Registration State.	1890.	1900.
Connecticut	3.9	.1
Massachusetts	2.7	.8
New Hampshire	1.0	1.3
New Jersey	7.9	3.3
New York	9.3	4.0
Rhode Island	1.1	.4
Vermont	3.0	.7

Gratification over the fact herein disclosed will not lessen effort, and one may even go so far as to say that there is every promise and speedy possibility that the new science of city sanitation will soon reduce the deathrate below that of the country.

The increase of age of college graduation, according to Professor Thomas (*Popular Science Monthly*, June) has been greatly exaggerated, and he says that at best it exists only for certain institutions, others showing even a decrease. As our school system is at present constituted, the normal age is between 22 and 23, and the gradually organizing secondary education tends to make the percentage graduating within this age increasingly large. It was formerly possible, though not often happening, for a boy to graduate at 16; but this is not so now. The young man now leaves college but little older than did his father or grandfather, but, of course, with higher academic attainments. If entrance into professional life is later than formerly, the cause is not in the college or its preparatory school. The trend of opinion and of practice is in some way to drop a year of the college course, and to make the medical college course longer and more thoroughgoing. In this connection we call attention to the thoughtful and most noteworthy article of Dr. Dearborn, published in *American Medicine*, April 11, 1903.

A University President on Football, Rowdyism, and Scholarship.—The champions of a bastard athleticism have as a chief argument relied upon the contention that football prevented worse evils, such as those of bloodless and diseased scholarship, idleness, and depraved sports. President David Starr Jordan puts the matter in another way:

It is the spirit of advertising that leads some institutions to tolerate a type of athlete who comes as a student with none of the student's purpose. I am a firm believer in college athletics. I have done my part in them in college and out. I know that the "color of life is red," but the value of athletic games is lost when outside gladiators are hired to play them. No matter what the inducement, the athletic contest has no value except as the spontaneous effort of the college man. To coddle the athlete is to render him a professional. If an institution makes one rule for the ordinary student and another for the athlete it is party to a fraud. Without some such concession half the great football teams of today could not exist. I would rather see football disappear and the athletic fields closed for ten years for fumigation than to see our colleges helpless in the hands of athletic professionalism, as many of them are today.

The same methods which cure the aristocratic ills of idleness and cynicism are equally effective in the democratic vice of rowdyism. With high standards of work, set not at long intervals, by formal examinations, but by the daily vigilance and devotion of real teachers, all these classes of mock students disappear.

The football tramp vanishes before the work-test. The wealthy boy takes his proper place when honest, democratic brain effort is required of him. If he is not a student he will no longer pretend to be one and ought not to be in college. The rowdy, the mucker, the hair-cutting, gate-lifting, canerushing imbecile is never a real student. He is a gamin masquerading in cap and gown. The requirement of scholarship brings him to terms. If we insist that our colleges shall not pretend to educate those who cannot or will not be educated we shall have no trouble with the moral training of the students.

Science and Materialism.—There has of late been a great deal of discussion as to the origin of life and the attitude of scientific thinkers concerning the subject. The matter has of course a decided medical bearing, as the influence of a belief in materialism, whether openly or secretly held, will undoubtedly affect the subjects and trend of investigation of the laboratory worker and even the therapeutics of the practicing physician. A noteworthy contribution to the subject is made by the man whom all agree is the world's greatest scientist. The highest authority in physics says that physical laws and forces cannot explain the origin and actions of organic beings. His words, from a recent letter to the *London Times*, are:

... but I desired to point out that, while "fortuitous concurrence of atoms" is not an inappropriate description of the formation of a crystal, it is utterly absurd in respect to the coming into existence, or the growth, or the continuation of the molecular combinations presented in the bodies of living things. Here scientific thought is compelled to accept the idea of Creative Power. Forty years ago I asked Liebig, walking somewhere in the country, if he believed that the grass and flowers which we saw around us grew by mere chemical forces. He answered, "No, no more than I could believe that a book of botany describing them could grow by mere chemical forces."

Every action of human free will is a miracle to physical and chemical and mathematical science.

A preparatory course for nurses' training schools is announced by the Drexel Institute of Philadelphia and the plan deserves the serious interest of the professions concerned and of the public. The rapid development of training schools for nurses in this country has led of late to serious discussion as to the kind and amount of scientific education which ought to be given to the nurses in training. The question has been before the American Society of Superintendents of Training Schools for Nurses, and the drift of opinion is evidently in favor of increasing the amount and raising the standard of the instruction given in those studies which might be characterized as auxiliary to the strictly professional training given in the hospitals. The conviction among those who have given the matter special attention appears to be that this scientific knowledge could be more advantageously acquired if given independently of the professional work; and the general conclusion which has been reached is that if a preparatory course of training in the scientific branches, a knowledge of which is essential to a fully equipped nurse, should be provided relief from the pressure upon the women in the first year of the training schools would be obtained, while the standard for the education of nurses would be raised. Particulars concerning the course, etc., can be obtained by addressing the president of the Drexel Institute, James McAlister, Philadelphia.

AMERICAN NEWS AND NOTES.

GENERAL.

Drug Stores in Havana Closed.—The drug stores have all closed in consequence of the enforcement of the Havana Provincial Council's tax on the sale of patent medicines, and free prescriptions are again in vogue at the public dispensaries. The Druggists say that, rather than continue to be fined for the privilege of selling patent medicines, they prefer to remain closed until Congress passes on the pending bill providing that the government shall collect the internal revenues and appropriate the same among the provinces.

New Rules for the Hypochondriac Health Seeker.—Drink water and get typhoid. Drink milk and get tuberculosis. Drink whisky and get the junjams. Eat soup and get Bright's disease. Eat meat and encourage apoplexy. Eat oysters and acquire toxemia. Eat vegetables and weaken the system. Eat dessert and take to paresis. Smoke cigars and die early. Smoke cigars and get catarrh. Drink coffee and obtain nervous prostration. Drink wine and get the gout. In order to be entirely healthy, one must eat nothing, drink nothing, smoke nothing, and even before breathing one should see that the air is properly sterilized.—[*Southwestern World*.]

Miscellaneous.—ANN ARBOR, MICH: It is reported that Dr. J. Playfair McMurrich, professor of anatomy at the University of Michigan, has accepted a commission from the Royal Academy of Prussia and the government of Holland to examine and identify certain species of animal life. ATLANTIC CITY, N. J.: Dr. C. Radcliffe Johnson has recently accepted an appointment as Missionary Physician to the Philippines, and will be stationed at Manila. NEW YORK CITY: Dr. Eugene Hodenpyl has been elected president and Dr. Simon Flexner vice-president of the American Association of Pathologists and Bacteriologists. CHICAGO: Dr. J. Rollin Slonaker, associate in neurology, University of Chicago, has accepted the position of assistant professor of physiology in Leland Stanford, Jr., University.

Hospital Benefactions.—BROOKLINE, MASS.: The Free Hospital for Women has received a bequest of \$20,000 from the estate of the late Robert C. Billings. This sum is given to establish a permanent fund called the Robert Charles Billings Fund, the income of which is to be used for general hospital purposes. RICHMOND, IND.: Daniel G. Reid, formerly of Richmond, now of New York City, recently notified the trustees of St. Stephen's Hospital that he would give \$50,000 to the city for a new hospital provided \$25,000 is raised by the trustees of the present hospital as an endowment fund. The gift has been accepted. PHILADELPHIA: According to the will of the late Hannah B. Fry, of this city, the sum of \$5,500 will revert to St. Timothy's Hospital to establish a free bed after the death of the testatrix's sister. CAMBRIDGE, MASS.: It is reported that James Stillman, the New York banker, has given \$50,000 to the Stillman Infirmary of Harvard University for the purpose of establishing a ward for the treatment of contagious diseases. YONKERS, N. Y.: The late Warren B. Smith, of this city, bequeathed \$50,000 to St. John's Hospital.

To Prohibit Adulterated Wines and Meats.—It is reported that a conference has been held at the Bureau of Chemistry and the Department of Agriculture in Washington to determine upon a plan for the execution of the new law which places a ban upon adulterated wines, meats, etc., from foreign countries, particularly from Germany and France. The wines from France and the meats from Germany are the two articles which will be discriminated against most severely. This will probably result in a very much restricted importation of these articles into this country. During the last fiscal year there were imported into the United States from France champagne and sparkling wines to the value of \$4,529,000, and still wines to the value of \$1,073,159, whereas from Germany came sparkling wines to the value of \$1,273,227. The American consuls abroad will be directed to notify shippers that the new law will be enforced. It is known from analyses that have been made that foreign meats coming into this country are chemically treated. French wines imported into this country are proverbially impure. False brands are much used by foreign shippers as well as domestic dealers and manufacturers in California. It is asserted that a mixture consisting of 10% alcohol, 3% of sugar and glycerin, a trace of tannin, a red coloring material, a few drops of essential oil, a little burnt sugar, will make a mixture which the average person can in no way distinguish from claret. This fraudulent mixture is said to be sold in large quantities. Anilin dyes and logwood are said to be used to color wines. The primary purpose of the law is to safeguard the health of consumers, but it is also said that it will serve as a powerful means for retaliation on countries like Germany which have carried the exclusion of our products to an extreme degree. The new law is comprehensive and will be easy to execute, and it is believed that the officials are thoroughly in earnest in their determination to restrict the importation of many fraudulent products.

NEW YORK.

Socalled Doctor Fined.—A person practising medicine in New York City has been fined for illegal practice. He claimed to be a specialist in diseases of men. Although he had no license to practise in the State it is estimated that his income was upward of \$20,000 per annum, while the pharmacist, a one-time baseball player, to whom his prescriptions were sent and who had no license to practise pharmacy, derived an income equal to that of the socalled specialist. The fine was \$50.00, a small deterrent when \$20,000 per annum is at stake.

Consumptives in Tents.—The present issue of *Charities* discusses at some length the plan of treatment for consumptives inaugurated during the present summer in New York. It says that June marks the beginning of the third year of tent treatment for special classes of the insane at Manhattan State Hospital, East, Ward's Island, New York City. Stakes are being driven and floors laid for new tents, and not less than 170 patients will be under canvas. The Hospital for Consumptives, opened by the New York Commissioner of Public Charities in connection with the Metropolitan Hospital, Blackwell's Island, on January 31, 1902, which has quickly become the largest hospital for consumptives in or near the city of New York, is adding to its equipment a series of tent cottages. Three of these are already occupied, four others are in process of construction, and still others will be erected as rapidly as practicable. There will be provision for at least 100 men before the end of the summer.

PHILADELPHIA, PENNSYLVANIA, ETC.

New Dean at Hahnemann Medical College.—Dr. Charles M. Thomas, who at present holds the chair of ophthalmology in Hahnemann Medical College, has been elected dean of that institution, to succeed Dr. Dudley, resigned.

Hospital in Need of Funds.—The Orange Memorial Hospital is in serious financial straits, and the Finance Committee of the Board of Governors has issued an urgent public appeal for funds. The cost of running the hospital is constantly on the increase, but the income has remained stationary for many years.

Phipps Institute.—A second ward has been opened in the Phipps Institute for the cure and prevention of tuberculosis. This will provide a total of 30 beds for the present capacity of the institute. It is asserted that many more beds are needed, and those in charge are pushing the work of extending the institute as rapidly as possible.

College of Physicians.—After a protracted discussion the College of Physicians has decided to purchase for \$80,000 the property at the northwest corner of Twenty-second and Chestnut streets, Philadelphia. The purpose is to dispose of by sale and abandon the historic old building at Thirteenth and Locust streets, and build a handsome and extensive structure on the new property acquired, and thus establish an entirely new home for the college. The generous donation of \$50,000 from Andrew Carnegie has enabled the College of Physicians to take this new departure.

Typhoid and the Schools.—Director Martin has taken steps which it is hoped will materially decrease the prevalence of typhoid fever in Philadelphia. His work in this particular is directly mainly toward the securing of water free from germs for the public schools. Investigation has shown that many of the schools are unsupplied with filters and that such as are supplied have filters practically worthless. The director has suggested that school children be not permitted to drink water coming directly from the hydrants or spigots about the school-yard and that the knowledge of the efficacy of the boiling of water be impressed upon the school children and their parents.

Encourage the "Index Medicus."—The College of Physicians has adopted the following resolutions:

WHEREAS, Through the generosity of the Carnegie Institution, which has pledged \$10,000 a year for three years, the *Index Medicus* has been revived; and

WHEREAS, The *Index* is invaluable to the profession not only of America, but of the whole world, and its permanent establishment is of the utmost importance to the profession at large; and

WHEREAS, If the profession does not support this publication by a general subscription, it cannot be expected that the Carnegie Institution will continue to defray nearly the entire expense of its publication; therefore

Resolved, That the College of Physicians requests each Fellow, if within his power, to subscribe to at least one copy, at an expense of \$5 a year, by check or postal money order, to the *Index Medicus*, care of Carnegie Institution, Washington, D. C.

SOUTHERN STATES.

Cambridge Hospital.—The corner-stone of the new hospital of the United Charities in Cambridge, Maryland, was laid with imposing ceremonies on May 26. The chief guest and prime benefactor of the hospital was John E. Hurst, from Baltimore, and a native of Cambridge. The length of the building is to be 136 feet by 51 feet in width, with wings at each end 36 feet wide. There will be three stories and a basement.

WESTERN STATES.

Tornado Wrecks Hospital.—At Glenwood, Ia., a tornado struck the State Hospital for Feeble-minded on May 25. Two persons were killed and 11 injured.

Colony for Vegetarians.—It is said that Edgar Wallace Conable, of Colorado Springs, has purchased 8,000 acres of timber and fruit land in Benton county, Ark., where he will found a vegetarian colony. Colonists will be forbidden to use meat, alcoholic stimulants, or tobacco. The land is favorably situated in the Ozark fruit belt.

Osteopaths and Vaccination.—The *Cleveland Medical Journal* for May says: "Dr. Metz, of Cincinnati, applied to the State Board of Health for a decision in reference to the authority of an osteopathic practitioner in vaccinating school children. He claims that an osteopath has no right to perform surgical operations even of minor form. He has been sustained in his claim."

Contaminated Ice.—The Bulletin of the Health Department of Chicago says: "Recent ice analysis has shown some of the lakes from which ice has been cut during the winter are contaminated. The ice companies have been notified and are using great care to protect their customers. When contamination is found the ice is sold only for cooling purposes. Typhoid fever was widely spread last year, and the summer hotels situated on these lakes may have had visitors who were convalescing or suffering from the fever. As the sewage sweeps into the lake its waters become contaminated."

Money to Secure Better Milk Supply.—An appeal for \$5,000 to cover the expense of inspecting, standardizing, and distributing milk as suggested by the Children's Hospital Commission was authorized by the milk conference, which was held May 27 at the Chicago Women's Club. Dr. Reynolds states that the campaign for purer milk in Chicago had its inception in 1892, when the inspection ordinance was passed. At that time 45% of the milk analyzed was below grade. At the depots only 8% was below grade, indicating that the contamination occurred in the city. There has since been a great improvement in the milk supply of Chicago, though it is far from what it should be at the present time.

Improving the Milk Supply.—The Bulletin of the Health Department of Chicago for the week ended May 23 states that notwithstanding the high temperature of the week the effect of the work begun by the department three weeks ago relative to the impure milk supply has been to check the increasing mortality among infants. The daily deaths under one year were as follows: Sunday, 23; Monday, 23; Tuesday, 24; Wednesday, 10; Thursday, 10; Friday, 9; Saturday to noon, 4; a total of 103. During the corresponding last four days of the previous week there were 45 deaths among the same class, the decrease for the present week being 26.6%. The inference is that the agitation has borne fruit and mothers are taking more precautions in the care and feeding of milk furnished. The work on the part of the health department is still in active progress and circulars are being furnished to all homes in the afflicted districts, with specific instructions as to the proper means of preserving and feeding the milk furnished.

FOREIGN NEWS AND NOTES

GENERAL.

Paris Académie des Sciences.—There is only one German among the members of the Paris Académie des Sciences—Professor Robert Koch, who was elected in place of the late Rudolf Virchow. Of the other six foreign members Austria and America contribute one each—Suess and Newcomb, and England four—Kelvin, Lister, Stokes, Hooker.

To Use Plague Bacilli as Revenge.—From London comes a communication that the following has been received from a correspondent in Constantinople: The revolutionary leaders have at the present moment in their possession a large quantity of the Indian plague bacilli, with a dire determination to infect Constantinople, Salonica, and even Berlin. "If within eight days after the warning," they say in effect, "the great Powers do not grant the execution of the Berlin treaty, then we die, but we shall not die alone, for there shall follow us into the grave myriads of people in Europe—Europe which robbed us of our liberty."

Fish Cause of Leprosy.—Dr. Jonathan Hutchinson, former president of the Royal College of Surgeons, who has recently returned from a tour of investigation in India as to the cause and prevention of leprosy, has written a letter in which he gives it as his opinion that fish eating is the cause of leprosy. Catholic fast days are responsible, he says, for a great deal of the spread of leprosy. The eating of unsound fish should be prohibited. Wherever Catholic missions are successful, says Dr. Hutchinson, leprosy increases. His calculation is that the risk to a

Catholic convert is twenty-fold that to one who remains in the Hindu faith. He says the Jain, who is a vegetarian, rarely if ever has leprosy, while the Catholic converts suffer fearfully, and he expresses the opinion that this is proof that the disease is noncontagious. Among other measures of prevention he urges the abolition of the salt tax in India to enable the Hindu to render fish wholesome.

CONTINENTAL EUROPE.

Mothers of Large Families.—Senator Piot has written to Premier Combes proposing that the government accord decorations to mothers of families. The senator says the depopulation of France is a serious menace, and urges that mothers of large families are entitled to equal consideration with firemen, gymnasts, and others who have recently been decorated. M. Piot expects to propose in parliament the creation of a mother's decoration, consisting of a ribbon and cross.

OBITUARIES.

E. C. Wendt, of New York City, died in Paris, France, May 27. He was an authority on sanitation, and during the past seven years has devoted nearly all his time to studying the methods of sanitation in Europe, especially in Southern Italy. He has written many papers on the subject. He was an editor of the *Medical Review*. After going to Europe Dr. Wendt continued to contribute valuable papers to medical publications in this country.

John P. Bryson, of St. Louis, Mo., died recently. He was graduated from the Humboldt Medical College, St. Louis, Mo., in 1868. He was professor of genitourinary surgery in the medical department of Washington University, and surgeon to the St. Louis Mullanphy Hospital. He was a member of the American Association of Genitourinary Surgeons and of St. Louis Medical Society. He was a Founder of *American Medicine*.

Florence W. Hunt, in Milwaukee, Wis., May 27. She was graduated from the Northwestern University Woman's Medical School in 1891. She was formerly a member of the Illinois State Board of Health, the American Medical Association, the Chicago Medical Society, and the Illinois State Medical Society. She was neurologist to St. Joseph's Hospital.

Octavius A. White, of New York City, May 25, aged 78. He was graduated from the South Carolina Medical College in 1848. He served as surgeon in the Confederate Army during the Civil war. In 1876 he received an appointment by the American Medical Society to go to Savannah and report on the yellow fever epidemic in that city.

John Reid, in London, Eng., May 14, aged 80. He first practised his profession in Rochester, N. Y., and then in St. Louis, Mo., afterward going to Chicago, where he stayed a number of years and served several terms as health officer. He subsequently removed to New York City, where he resided several years.

A. T. Tagert, of Chicago, Ill., May 27, aged 57. He was graduated from the medical department of the University of Vermont in 1866. He was a member of the American Medical Association, the Chicago Medical Society, and the Illinois State Medical Society. He was president of the Kedzie Hospital.

H. G. Latham, in Lynchburg, Va., May 5, aged 72. He was graduated from the University of Virginia, Charlottesville, in 1851. During the Civil war he was in command of the famous Latham battery. He served several terms as president of the Virginia Medical Board.

Jacob R. Plank, of York Springs, Pa., May 24, aged 76. He was graduated from the old Washington University School of Medicine, Baltimore, in 1873.

H. C. McLaurin, of Brandywine, Miss., May 25, aged 42. He was graduated from the medical department of the Tulane University of Louisiana in 1888.

Ethan A. Riggs, of New Orleans, La., May 28, aged 42. He was graduated from the medical department of the Tulane University of Louisiana in 1869.

Robert M. Euders, a contract surgeon in the United States Army, died at Manila, May 24.

John Van Harlingen, of Brooklyn, N. Y., May 18, aged 57. He was graduated from the medical department of Columbia University in 1869.

Alfred B. McChesney, in Chicago, Ill., May 7, aged 75. He was graduated from the University of Michigan, Ann Arbor, in 1853.

Walter B. Morrison, in Muskegon, Mich., May 2, aged 65. He was a graduate of the Long Island College Hospital, Brooklyn.

William Deegan, in Chicago, Ill., May 6. He was graduated from the College of Physicians and Surgeons, Keokuk, Ia., in 1884.

James C. Rhodes, in Stillwater, Minn., May 1, aged 79. He was graduated from the Geneva (N. Y.) Medical College in 1847.

T. C. Rich, at Williamsport, Pa., May 27, aged 60. He was graduated from the Jefferson Medical College in 1878.

James E. Hyslop, in Keller, Va., May 15, aged 27. He was graduated from the University of Maryland in 1900.

Andrew J. Lauer, of Canton, Ohio, May 20, aged 30.

SOCIETY REPORTS

SIXTH TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Held in Washington, May 12, 13 and 14, 1903.

[Specially reported for *American Medicine*.]

Sessions of the Congress.

SECOND SESSION.

The subject of this session was the medical and surgical aspects of the diseases of the gallbladder and bile ducts.

Diagnosis of Affections of the Gallbladder and Bile Ducts.—JOHN H. MUSSER (Philadelphia) pleaded for the early recognition of the primary inflammation of the gallbladder and ducts. In his opinion there would be very little seen of the secondary stages if the early ones were recognized. He laid great stress upon laboratory methods of diagnosis, and referred to the presence of leukocytes in these conditions. Among other things with which gallbladder disease is confused, he mentioned cholelithiasis, congestion of the liver, perforation of the intestinal tract, subdiaphragmatic abscess, pleurisy, pneumonia, pancreatic disease, syphilis of the liver, simple abscess of the liver, and primary cancer of the gallbladder. In his opinion there is still much to be learned about hepatic function, and one must rely very largely upon the urine.

Differential Diagnosis of Diseases of the Gallbladder and Bile Ducts.—GEORGE E. BREWER (New York) claimed that much of the information obtained in reference to this disease has been due to the conditions found at the time of operation. He divided the subject into (1) calculous disease; (2) inflammatory disease; and (3) newgrowths; and called especial attention to the pain in impacted gallstone. The presence of the gallbladder near the median line, as well as its congenital absence, was referred to, and the cause of the pain in gallbladder disease was believed to be due to inflammatory conditions, although it may be due to pressure and spasm. The most characteristic symptom of cholelithiasis was considered to be the pain, while the most conspicuous symptoms of stone in the common duct were mentioned as jaundice, pain and fever. In the author's opinion inflammation of the gallbladder is present in most cases coming under the surgeon's hands, but a tumor of the gallbladder was rarely found. The three chief symptoms of obstruction were given as (1) pain, (2) tumor, and (3) jaundice, and the fact that gallstones are rarely found in young persons, say under 20, was alluded to.

Etiology and Pathology of Gallstone.—C. A. HERTER (New York) first considered the chief constituents of gallstones, which in his opinion are cholesterol and bilirubin. He showed a table giving the results in the formation of cholesterol after injections into the gallbladder, and after mentioning that cholesterol is increased in pneumonia stated that the quantity of this substance in the blood was very little in relation to the quantity in the bile. As to bacteria in gallstones reference was made to the work of Welch, who found *Streptococcus pyogenes*, or the colon bacillus, while a bacterial nidus was found in one-half of the stones. In reference to the artificial production of stone the principal obstacle to its accomplishment was believed to be the flow of bile. Inflammation of the gallbladder, superinduced by ascites and unaccompanied by any infection, is not itself sufficient to give rise to a very marked increase in the percentage of cholesterol in the bile. The author stated that gallstones may be produced, experimentally, by the introduction of bacteria, although he felt there was considerable evidence that we are going a little too far in assuming that all cases of gallstones are due to bacteria and nothing else.

Diseases of the Gallbladder and the Bile Ducts, with Especial Reference to Diseases of the Stomach and Intestines.—C. A. EWALD (Berlin). This will be published in a future issue of *American Medicine*.

A Study of 534 Operations Upon the Gallbladder and Bile Ducts.—WILLIAM J. MAYO (Rochester, Minn.) commenced his paper with the statement that in nature's defense against infection within the abdominal cavity there are three weak situations, the fallopian tube, the appendix, and the gallbladder, of which the first to gain an accepted surgical position was the infective lesions of the tube. While he considered that the appendix had reached an assured place in surgery he considered that the gallbladder had been slow to receive that attention from the medical public which its importance deserved. He compared the similarity between the appendix and the gallbladder and explained why perforation and sudden death are less frequent in diseases of the gallbladder than the appendix. He showed the relative preponderance of the two conditions according to the age of life of the patient and also the relative frequency of operations upon the appendix, gallbladder, ovaries and tubes, and stomach. The 534 operations upon the gallbladder and bile passages, which formed the basis of this paper, were performed upon 518 patients, with 19 deaths, a mortality of 3.5%. Of the total number 510 were for gallstone disease, with a mortality of 3%. Considering stones in the gallbladder as uncomplicated, there were 208 cases with 2 deaths, a mortality of less than 10%. While in his opinion the colic is

the standard of measure in the diagnosis of gallstones, yet it is but a small part of the clinical picture and is readily diagnosed. While it is known that the large majority of adults with gallstones never suffer it is equally true that these stones only slumber, with the possibility of a painful awakening. The ideal operation, which is complete closure of the gallbladder incision, has been successful in many of these cases of slumbering stone, while the hope of the patient that the stones will pass down and out through the common duct frequently materializes; usually, according to the author, there were more behind, and he has never operated upon a patient who has passed calculi without finding more in the gallbladder. Commenting upon the safety of operations upon the common duct, he claimed that the mortality depended more upon the condition of the patient than any difficulties in the technic, and gave Dr. Robson the credit for the great improvement in the technic. He has met chronic pancreatitis 18 times in connection with gallstone disease and in 4 of them cholecystoduodenostomy was successfully performed, while in the remaining 12 no special treatment was adopted. The average stay in the hospital was slightly less than three weeks, the attempt being to remove all of the stones at the primary operation. Malignant disease of the gallbladder and bile duct was met 24 times, in some of which the exact origin could not be determined. As the presence of gallstones only occurred in 15% of secondary cancers of the gallbladder and in over 80% of primary cancers it was concluded that they were the chief etiologic factors in the production of malignant disease.

[To be continued.]

ASSOCIATION OF AMERICAN PHYSICIANS.

[Specially reported for *American Medicine*.]

FIRST SESSION (CONTINUED).

Artificial Immunity in Experimental Tuberculosis.—

E. L. TRUDEAU (Saranac Lake) referred to the recent attempts at producing artificial immunization against tuberculous infection, and spoke of the work of Koch, Falk, Martin, Dor, Behring, and others. The attainment of a certain degree of toxin immunity did not protect against reinfection, and whatever degree of immunity had been obtained experimentally was due to a bacteriolytic immunity. A living germ was necessary to produce whatever immunity had been obtained experimentally. The great majority of mankind had to some degree a natural immunity against tuberculosis, but it was only relative and maintained only so long as the person was in a good state of health.

Studies of Mammalian Tuberculosis III: Description of a Bovine Bacillus from the Human Body: A Simple Culture Test for Distinguishing the Bovine from the Human Type of Bacilli.—THEOBALD SMITH (Boston) described tubercle bacilli isolated from men, cattle, dogs and cats. Some were isolated from the mesenteric lymph-glands of children; one identified as belonging to the human type of bacilli, the other differing from it very much and agreeing in all its characteristics with the bovine type. A test was described for differentiating by means of bouillon cultures these different types. The writer concluded that the bovine bacillus does invade the human body, but that such invasion is rare.

Discussion.—OSLER (Baltimore) inquired if any macroscopic differences between the mesenteric glands in the two cases were observed. Creighton had suggested 25 years ago that some cases of human tuberculosis might be of bovine origin, because of the similarity of lesions, whereas really the lesions were unlike those of bovine tuberculosis. SMITH, in closing the discussion, said that he had not seen the autopsies, but thought no macroscopic differences were observed. The case of bovine tuberculosis, however, showed numbers of the bacilli in the mesenteric glands, while the other case did not.

The Transmission of Bovine Tuberculosis in Milk.—GEORGE M. KOBER (Washington) said that a number of cases of tuberculosis supposed to be due to infectious milk had been collected and the evidence indicated the agency of the milk of tuberculous cows in the spread of the disease, especially in children, but the writer thought the degree of danger was apparently not so great as was usually supposed. He thought the subject demanded much more study before Koch's conclusions that bovine and human tuberculosis are different and that human tuberculosis can not be conveyed to cattle and that man is insusceptible to bovine tuberculosis, could be accepted, for much of the recent investigation seemed to disprove the claims of Koch.

Discussion.—THEOBALD SMITH (Boston) said it was pretty well agreed that there was a difference between the tuberculosis of man and animal, though it was slight, but it remained to be determined how great the difference was. Pathologic difference certainly existed and the immunizing qualities had not established their identity.

Tuberculosis of the Tonsils, the Tonsils as Portals of Tuberculous Infection.—HENRY KOPLIK (New York) called attention to the work of Cohnheim, Orth, Strassman, Schlenker, and Kruckmann in this connection, and thought the cases might be divided into those observed clinically and those in

which postmortem examinations had been made. Primary tuberculosis of the tonsil was rare; secondary forms, especially those occurring in pulmonary tuberculosis, were common. With tonsillar tuberculosis there was constancy of occurrence of the cervical lymph-nodes. The writer referred to a number of cases of tuberculosis of the lymph-nodes occurring in children, and said the secondary enlargements of these nodes was of interest only as a complication of tuberculosis elsewhere. Owing to the greater activity of growth of lymph-tissue in children they furnished the largest percentage of cases of tuberculosis of the tonsils. At first it had been thought that these lymph-nodes were infected from below, from the bronchial nodes, and that might exceptionally occur, but as a rule the tubercle bacilli entered the tonsil and infected the nodes from above. Cases of Friedman demonstrated this fact. The writer detailed a number of cases in conclusion.

A Skin Lesion Associated with Rapid Growth of Long Bones (Les Vegetures de Croissance, Jules Comby).—W. P. NORTHROP (New York) said that he considered the conditions producing this lesion to be adolescence, typhoid fever, prolonged rest in bed with excessive growth of the long bones. These conditions resulted in fraying, welts, or wales of the skin over the epiphyses of the long bones. Photographs were exhibited illustrating the condition.

Discussion.—JACOBI (New York) considered the case as but an example of an excess of what was frequently seen after cases of typhoid fever in a growing child. Epiphyseal hyperemia produced an exaggeration of the normal process; he did not think lying in bed had anything to do with it; it was just the reverse of what was seen in rachitis. OSLER said the condition might not always be attributed to rapid growth, inasmuch as it frequently occurred in adults after typhoid fever. He referred to a friend who had welts come on his back after typhoid, causing considerable deformity.

The Visceral Lesions of the Erythema Group of Skin Diseases; Third Series.—WILLIAM OSLER. (Read by title.)
Dermatomyositis.—F. FORCHHEIMER (Cincinnati) presented another case of this rare disease and dealt with the classification and etiology of the affection.

Observations Upon Results Obtained in Infant Feeding with Various Forms of Milk in Tenements and Institutions in New York: Clinical Report.—L. EMMETT HOLT (New York).
Bacteriologic Report.—WILLIAM H. PARK (New York). A report upon 600 infants, observed in their homes for a period of three months, was made by the writers. Two-thirds of the observations were in the summer and one-third in the winter. This work was conducted with a view to ascertaining how much the results depended upon the factors of care, surroundings, atmospheric conditions, sterilized or raw milk, and the number of bacteria present in the milk.

[To be continued.]

AMERICAN SURGICAL ASSOCIATION.

[Specially reported for *American Medicine*.]

SECOND SESSION.

The Surgery of the Gastrointestinal Tract.—Prof. JOH. V. MIKULICZ RADECKI (Breslau) divided his subject into the following topics: 1. Cardiospasm and its treatment. 2. Peptic ulcer of the jejunum. 3. The operative treatment of severe forms of invagination of the intestine. 4. Operation on malignant growths of the large intestine. ZENKER considered the cardiospasm an idiopathic dilation of the esophagus. It consists mainly of a sacculated or fusiform dilation of the esophagus, most pronounced in the lowest portion. The chief characteristic of the lesion is difficulty in swallowing either liquid or solid food; until, in the advanced stage of the affection, only very small amounts of food can reach the stomach. The cause of this difficulty lies in the fact that the esophagus retains a portion of the ingesta, instead of being completely emptied during each act of swallowing, as is normal. In advanced stages this residue amounts to a quarter or even half a liter; and the patient finally dies of inanition. The author has observed about twenty cases. Twenty years ago he showed that in all these cases there exists an abnormal occlusion of the cardiac orifice of the stomach, which he regards as owing to a muscular spasm. While under normal conditions during the act of swallowing the cardiac orifice opens automatically and easily admits the food into the stomach, it remains closed in case of cardiospasm; and this spasm must be overcome by the contraction of the muscular wall of the esophagus. This leads to an eccentric hypertrophy of the esophageal wall; and the organ becomes more and more dilated as the free passage of the food is interfered with. Another consequence of this impeded passage of the food is a chronic esophagitis caused by the decomposition of the contents of the esophagus. Cardiospasm can be definitely diagnosed in the living subject only by means of the esophagoscope. The affection which the author describes is a primary cardiospasm, if no other lesions are demonstrable. There is, however, a secondary cardiospasm which he has occasionally observed in case of carcinoma of the cardiac end of the stomach. This secondary cardiospasm is originally entirely different from the secondary dilation of the esophagus in consequence of actual esophageal carcinoma. Two cases of which he had charge were peculiar in that they

were followed by secondary carcinomas. In each case the carcinomatous growth was found in the first thoracic portion of the esophagus, above the dilation. In view of the insufficiency of all therapeutic measures for the relief of this affection, Prof. Mikulicz advises the following operation:

The stomach is exposed by laparotomy, and in the anterior wall is made an incision long enough to allow the entire left hand to pass into the stomach. Under the guidance of the fingers, which are pushed forward toward the cardiac end, an instrument resembling a glove-stretcher is introduced into the cardiac orifice. Dilation is gradually effected to such an extent that the blades of the instrument are about 7 cm. apart. Thus is caused a blunt dilation of the cardia similar to the dilation of the sphincter and in case of anal fissure. Then the wounds in the stomach and in the parietal walls are closed.

Professor Mikulicz suggests that it would perhaps be better not to make so large an incision into the wall of the stomach, but to introduce the dilator through a small gastric fistula; or an instrument might be constructed which could be introduced into the cardia through the mouth and act as a dilator. 2. *Peptic ulcer of the jejunum* has only recently been observed by surgeons, and only as a sequel to gastroenterostomy performed for benign affections of the stomach, such as gastric ulcer or pyloric stenosis. Moreover, it appears only after anterior gastroenterostomy according to Woelfer's method—but it does not after von Hacker's posterior gastroenterostomy. It may develop during the first weeks after the operation, or it may delay for several months. The general picture of the disease closely resembles that of gastric ulcer; hence most cases were formerly regarded as a recurrence of the original trouble. The ulcer lies either at the point of junction between the stomach and the jejunum, *i. e.*, at the artificial anastomosis, or some centimeters away from the anastomosis, sometimes 10 cm. Peptic ulcer of the jejunum can be explained only by the prolonged presence of gastric juice, which reaches the jejunum without having been normally diluted and neutralized by bile and by the pancreatic secretion. The author believes that after these observations we are not entitled to perform anterior gastroenterostomy any longer—at least, not for benign affections of the stomach. For carcinomatous stenosis of the pylorus it may be considered, being technically the more simple operation. For the benign affections of the stomach we must choose an operation which does not expose the jejunum to the immediate action of the gastric juice, *i. e.*, an operation which restores so far as possible normal physiologic conditions. The most rational method is the pyloroplasty operation. If this is not feasible, we have to choose between gastroduodenostomy, which recently has been advocated by Kocher, and von Hacker's posterior gastroenterostomy. 3. *The operative treatment of severe forms of invagination of the intestine*, when disinvagination is impossible, as advised by Prof. Mikulicz, is that which he first performed in Breslau in March, 1902.

In this case the anterior surface of the distended, edematous, descending colon was sutured into an incision of 20 cm. in the left rectus abdominis. The colon was then opened longitudinally for 12 cm., exposing the intussusceptum, which consisted of two tubes, the outer being colon, the inner ileum. These tubes were in contact with each other on their serous surfaces. In order to avoid all danger of infecting the serous surfaces, the outer and inner layers of the intussusceptum were cut away step by step, and a deep catgut suture was immediately put in to close the peritoneal pocket as soon as it was opened. The mesentery was separated by multiple ligatures. A small strip of iodoform gauze was inserted here, in order to drain the mesenteric pocket into the gut. The resected portion was then drawn out through the abdominal wound, after an unsuccessful attempt to draw it out through the rectum. There was no peritonitis, and the large artificial anus which was left was closed in about eight weeks. The patient left the clinic cured. The same method was used with equal success in the case of a second patient, a woman of 35 years.

4. *As to operation on malignant growths of the large intestine.* Statistics collected up to the present time show that the prevalent method of excision of the tumor and immediate suture of the intestine give very bad results, the mortality varying between 30% and 50%—most patients succumbing to peritonitis. The cause of this phenomenon is found mainly in the secondary changes which take place in the intestinal walls under the influence of carcinomatous stenosis. For a number of years the author has invariably performed the operation at 2 sittings. Of 24 cases operated on only 4 died after the operation; but in none of these cases can the method of procedure be held responsible for the fatal termination. One patient died of pulmonary embolism; 1 of pneumonia; a third, 6 weeks after the operation, of general carcinomatous; and the fourth within 2 days, of peritonitis, caused by rupture of the carcinomatous gut during the enucleation of the tumor.

As regards the technic of the two operations performed by the author, the primary incision, the enucleation of the tumor, the removal of the lymphatic glands—in short, the entire operation—are performed exactly as when one operation only is done. After the tumor has been freed and completely enucleated, it is drawn out of the wound, the loop of gut is stitched to the parietal peritoneum with sutures including only the serous coat, and the abdominal wound is closed, leaving only room enough for the loop of the gut. Now only, after the abdominal cavity is completely closed, is the tumor excised, and an artificial anus is established, which is closed in two to four weeks, according to the usual methods.

In compiling the joint statistics of the author's clinic and that of Körte, it is found that in 24 cases which have been under observation more than 4 years, there are 9 cases without any recurrence.

[To be continued.]

AMERICAN GYNECOLOGICAL SOCIETY.

[Specially reported for *American Medicine*.]

SECOND SESSION (CONTINUED).

Ureterocystotomy.—J. W. BOVÉE in a previous paper had recounted 80 cases, which, together with his own, had been reported. He now brings the number to 111, and reports three cases of his own, all of which were successful, and all done by the abdominal route. Indications for the operation are ureterovaginal fistula from whatever cause, abnormal orifices, resection of the ureter for malignant disease, etc. Should fistula develop after operation for malignant disease 8 to 12 months should elapse before operation for its cure should be undertaken, as recurrence of the disease is probable, and the operation would have been useless. If the proximal severed end of the ureter is below the ileopectineal line it should be implanted into the bladder; if above, it may be implanted into the other ureter; if but slightly above, the kidney of the same side may be depressed to permit implantation into the bladder. The principal complication is infection. The mortality in the 80 cases was 8%; in the 111 cases 6%. Continuous drainage from the bladder is very essential. GEORGE H. NOBLE (Atlanta) called attention to the firmness with which the ureter is held in the areolar tissue beneath the peritoneum. Ordinarily it can be drawn down but little. In a case detailed he incised the peritoneum for 6 cm. (2½ inches) on each side of the ureter, loosened the same, and was thereby able to gain about 2½ cm. (1 inch). Important points are secure implantation, a tight joint, and continuous bladder drainage.

Discussion.—POLK said that bladder implantation of the ureter must inevitably lead to constriction and stenosis, and result in pathologic renal changes. Ureteral anastomosis is to be preferred to ureterocystotomy whenever possible. REUBEN PETERSON reported that he operated for an intraligamentous fibroid and without his knowledge injured the ureter. A fistula developed, and a ureterocystotomy was done, which resulted in the death of the patient. We should warn our patients that the operation is attended with danger. BOVÉE closed by stating that insisting on peritoneal drainage whether we operate by the transperitoneal or extraperitoneal route. He described the technic of several operations.

Occurrence of Gallstones in Insane Women.—W. P. MANTON stated that sedentary life, bodily inactivity, and supposedly torpid livers of the insane should theoretically conduce to the formation of gallstones. He began to investigate the subject some five years ago, but as yet his statistics did not embrace numbers sufficiently large to be of value. Among 133 deaths among insane women in the hospital with which he is connected he could obtain but 23 necropsies owing to the ignorance and prejudice of relatives of the deceased. State laws should permit autopsies to be held on the dead bodies of all who have been gratuitously cared for by the State. He found gallstones in 26% of those autopsied.

Excision of the Proximal Ends of the Fallopian Tubes at Their Origin in the Uterus the Operation of Choice for the Extremely Rare Cases Wherein Sterility is Desirable.—PHILANDER A. HARRIS said this is to take the place of the Porro operation, of bilateral removal of the ovaries, and of bilateral excision of healthy tubes. Menstruation will not be sacrificed. Every advantage arising from retention of the ovaries will be preserved to the individual, excepting the single item of impregnation. Tubes thus disconnected from the uterus will probably remain immune from future gonorrhoeal infection of the endometrium. A patient thus sterilized can doubtless be cured of her sterility by implantation of the tubes through the uterine cornua to the uterine cavity. While there are doubtless cases which are characterized by certain conditions of the body, mind or nervous system calling for the voluntary production of sterility, there must necessarily be a very limited field for the employment of this operation. If a case is to be surgically sterilized it should be effected in such manner that the patient and her friends may feel that she can be restored to fertility should the pathologic factors of her case so abate or disappear as to render impregnation and pregnancy permissible. No attempt will be made to present the indications for an operation which produces sterility for temporary purposes, although such instances are believed to be within the range of possibility, and if so, they emphasize the advantage of doing the primary operation in the manner proposed.

Operation on Diabetic Patients.—C. P. NOBLE (Philadelphia) reported that he had operated on 7 women with diabetes mellitus, of whom 6 recovered and 1 died of diabetic coma. So far as his experience goes, no preoperative treatment appears to reduce the danger of diabetic coma which, however, occurs less frequently than would be supposed. He has collected 62 cases from literature, operated upon; 14 of these were breast cases, 17 abdominal cases, and 31 were pelvic cases; of these 52 recovered and 17 died (25%), the chief cause of death being diabetic coma.

Officers Elected.—President, Edward Reynolds, Boston; first vice-president, Whitridge Williams, Baltimore; second vice-president, E. P. Davis, Philadelphia; secretary, J. Riddle Goffe (re-elected), New York; treasurer, J. M. Baldy, Philadelphia. Retiring president Joseph E. Janvrin was elected a member of the council. The next meeting will be held in Boston.

[To be continued.]

AMERICAN ASSOCIATION OF PATHOLOGISTS AND BACTERIOLOGISTS.

Third Annual Meeting, Held in Washington, May 12, 13 and 14, 1903.

[Specially reported for *American Medicine*.]

THIRD SESSION.

Blood-plates and Their Possible Relation to Coagulation of the Blood.—F. H. PRATT (Boston) has used a modification of Vierordt's apparatus for the determination of the coagulation time, and has used a solution in water of sodium metaphosphate to permit of the counting of the blood-platelets. The study has shown a marked variation in the number of the plates in blood taken at different times from the same individual. No relation between number of plates and time of coagulation could be ascertained. The plates disappear at coagulation and disappear from the blood of an animal injected with albumose.

In the *discussion* LOEB (Montreal) says that normal lymph will coagulate, and yet it contains no plates. This coagulation of the lymph is also inhibited by the injection of peptone.

Some Experiments Relating to the Influence of Innervation Upon the Course of Inflammation.—S. J. MELTZER and CLARA MELTZER (New York) dealt with the influence upon the course of an inflammation of section of the sympathetic as compared with the influence of the extirpation of the third cervical ganglion. An interesting detail of technic is the use of subcutaneous injections of adrenalin chlorid to produce the inflammatory reaction. The conclusion of the paper is that the sympathetic carries nerve fibers which control the anabolic processes in the ear, while the ganglion carries the fibers presiding over the katabolic processes. Therefore, when the sympathetic is cut the katabolic fibers can continue in their function, unopposed by the action of the anabolic fibers, and the course of the inflammation is favorably influenced by the increased tendency to katabolism.

A Preliminary Report of an Experimental Study on the Action of the Pneumococcus in Animals, with Special Reference to the Pneumonic Processes.—AUGUSTUS WADSWORTH (New York). The difficulty with all inoculation experiments heretofore has been that the pneumococcus has set up a general septicemia in the inoculated animals. After many control experiments Wadsworth has tried the ingenious idea of immunizing animals against the pneumococcus and then subjecting them to intratracheal infection, with the idea of giving the animals a sufficient resistance to escape the septicemia. His experiments have thus far been successful, if the proper relation of immunity to virulence of the inoculation culture was observed. Wadsworth demonstrates the lungs of several rabbits thus treated, which show apparently a typical pneumonic infiltration.

Tuberculosis of the Placenta and the Occurrence in the Fetal Circulation of Thrombi Containing Tubercle Bacilli: Microscope Demonstrations.—A. S. WARTHIN and D. M. COWIE (Ann Arbor) detailed the case of a woman with acute miliary tuberculosis, in whom abortion occurred the day before death in the seventh month. Placenta and fetus showed no macroscopic lesions, but the microscopic examination showed that the placenta was filled with thrombi, composed of red blood cells or possibly of blood-plates, which thrombi contained great numbers of tubercle bacilli. The thrombi occurred chiefly in the intravillar spaces. Of interest was the behavior of the syncytial cells, which seem to have been especially resistant to the tuberculous process, since in many instances they had grown over and around the thrombi. The giant cells of the thrombi Warthin thinks were composed of leukocytes. Great numbers of the tubercle bacilli were found in the bloodvessels of the liver of the fetus. The fetal tissues seemed especially resistant to the growth of the organism. Warthin thinks that congenital tuberculosis is possible, and should be considered as a possibility. In this case the presence of the bacilli was demonstrated both in sections and in inoculation experiments.

In the *discussion* BALDWIN (Saranac Lake) touched upon the behavior of the bacilli in immunized animals, and suggests the possibility that this fetus was immunized.

The Bacteriolysis of the Tubercle Bacillus.—E. R. BALDWIN (Saranac Lake) has used a method of saturating the sera to be tested with emulsions of tubercle bacilli, and then testing the hemolytic value of the serum. The theoretic possibility of such a procedure was not made clear. Baldwin thinks that he has evidence of the existence of a specific immune-body in his immune sera.

Morphology of the Tubercle Bacillus, with Lantern Slide Demonstration.—S. B. WOLBACH and H. C. ERNST (Boston) gave a detailed description of the methods used in the cultivation of seven bovine and four human strains. In the lantern demonstration, especial attention is called to the presence of certain round bodies, occurring side by side with the ordinary vacuolated appearance of the tubercle bacillus.

A Hitherto Undescribed Fibrillar Substance Produced by Connective Tissue Cells Illustrated with Diagrams.—F. B. MALLORY (Boston), by the use of a special method, has been able to demonstrate the presence in rapidly growing con-

nective tissue of a new form of fibril, which seems to lie upon the exterior of the cell; these fibrils extend in all directions, and are of interest in their relation to the basement membrane. These fibrils follow the development of the connective tissue, are acidophile, and do not branch.

In the *discussion* WELCH (Baltimore) emphasized the work of Mallory in extending our knowledge of the connective tissue substances, and asks regarding the possible value of these fibers in the differentiation between certain types of tumors. MALLORY replied that his studies have not been carried far enough to enable him to say if any diagnostic value is to be attached to them in pathology.

A Case of Gigantism with Leontiasis Ossea, with Lantern Demonstrations.—PETER BASSOE (Chicago). This was reported by E. R. LECOUNT. The case is one which has been brought before the medical profession several times before—that of the giant Wilkins, reported in 1893 by Dana. Lamberg next reported the case, and considers it a case of akromegaly. Sternberg opposed this diagnosis, and again later in his article in Nothnagel's work, where he states his view that the case is one of pathologic growth, but not akromegaly. Wilkins was admitted to the Presbyterian Hospital, Chicago, for surgical relief for blindness, but died soon after admission of amebic dysentery. Bassoe reports as a matter of interest that the small intestine was 60 feet in length. The autopsy showed a soft tumor of the base of the skull, which nearly filled the anterior fossa. The brain shows a corresponding atrophic area. The tumor is a spindle-celled sarcoma. The hypophysis was not enlarged. COPLIN (Philadelphia) demonstrated a lantern slide of an endothelioma of the pituitary body.

Demonstration of Specimens from a Case of Dermatitis Gangrenosa Infantum, with Microscopic Specimens.—E. R. LECOUNT (Chicago) gives the history of the case and discusses certain of its bearings. *Staphylococcus pyogenes aureus* was isolated from all the skin lesions, also obtained from the kidney, the pleural cavity, and the peritoneal cavity.

Observations on the Distribution and Culture of the Chaneroid Bacillus, with Lantern Demonstrations.—L. DAVIS (Boston) discusses the cultural characteristics of the bipolar staining organism first described by McCrae as occurring in soft chancres. Davis succeeded in obtaining pure cultures from eight cases by cultivating upon media which contained fresh blood or by cultivating in fresh human blood. Old media do not give results. Davis reports positive inoculation experiments on the monkey. Two interesting cases were of chancre of the hand, independent of genital affection.

The Nonidentity of Agglutinins Acting Upon the Flagella and the Bodies of Bacteria.—THEOBALD SMITH and A. L. REAGH (Boston) have made a comparative study of the sera produced by immunizing an animal with a motile specimen of the hog cholera bacillus and of the serum of an animal immune against a nonmotile bacillus of the same group. Their conclusions are, in short, that there are two different agglutinins, one acting upon the flagellas and one acting upon the bodies of bacteria. A serum produced by immunization with a motile form will not agglutinate a nonmotile form, unless used in a much greater quantity than that necessary to produce agglutination of the motile form.

In the *discussion* BERGEY (Philadelphia) thinks that his own work would not justify any such conclusion.

[To be continued.]

AMERICAN ORTHOPEDIC ASSOCIATION.

[Specially reported for *American Medicine*.]

SECOND SESSION (CONTINUED).

Observations on Hip Diseases as Seen in Hospital Out-patients.—AUGUSTUS THORNDIKE (Boston) is of opinion that the poor results obtained from hospital out-patients are due largely to their ignorance and poverty. Patients come for treatment in homemade apparatus consisting of straps, buckles, etc., and return for continued treatment at their own good pleasure rather than at regular intervals. Of 55 cases coming to the children's out-patient clinic 11 years ago 17 had involvement of the right hip, 36 the left, and 2 both. All under 12 years of age are received; the favorite age for development being from 2 to 7 years. Symptoms are usually noticed early by the family and the patients are usually brought to the hospital at once or before a month or so has elapsed, while in former years children were frequently left untreated for years, thus proving the rapid advance of orthopedics. The length of time treatment lasted ranged from 18 months to 11 years, the splint being withdrawn intermittently. It is safer to leave the splint on too long than risk relapses by too early removal. The Taylor long-traction splint was used in the majority of cases, the author preferring the Thomas double splint in a few cases, and these discarded later for the convalescent splint. There was no prolonged recumbency. Bed frame and traction were used for a few weeks mostly. Results were as follows: Permanent deformity and shortening in 20%, the average shortening being 1½ inches, and all those over a shortening of 3 inches were due to some peculiar condition as a long trochanter, etc. Motion usually resulted even in the irregular patients and began as a rule after discarding the apparatus. Amount of motion in 32 was over 20° and in 23 less than 20°. None was

deprived of walking, but did so without aid. These good results he believes were due to early recognition and treatment (thus avoiding suppuration); employing traction and persistence in looking after details of the treatment.

The Forcible Reposition of Congenital Luxation of the Hip.—GWILYM G. DAVIS (Philadelphia). To be published in *American Medicine*.

Peripheral Palsies Following Manual Replacement of the Congenitally Dislocated Hip.—HENRY LING TAYLOR (New York) is of opinion that since Lorenz's visit to this country more force has been used to reduce the dislocation and stretch the contracted tissues, and the position of retention is more extreme. In many cases observed by him it was noticed that some patients did not get up and walk. This, upon examination, was found to be due to paralysis of the quadriceps. As Lorenz says, this is not an uncommon sequel of the operation, and in fact occurs in all for the first few weeks. The paralysis is easily overlooked if the patient is not made to walk or tested for this condition by placing in the vertical position, allowing the leg to hang. He has observed 12 cases of palsy of the quadriceps, only 4 being in patients over 6 years of age; all recovered completely; 2 sciatic palsy, 1 in a patient 10 years old who recovered; the other, 13 years of age, shows a faint trace of returning power. These peripheral palsies are a common cause of the difficulty in walking experienced by some patients, the sciatic being less common and less favorable as to recovery.

Discussion.—RIDLON (Chicago) reported 27 cases operated upon, with 6 failures, including 2 cases in which fractures occurred. Palsy of the sciatic nerve was found in 1 case in which the patient has not recovered. Of 4 casts removed the results have been good; these were mostly anterior transpositions. Three other Chicago cases have been equally successful. MCKENZIE (Toronto) states the prognosis as double dislocations, 25%; single dislocations, 50%, and therefore recommends not being too ready to operate, for patients are often greatly benefited by nonoperative methods. STEELE said that Lorenz uses traction for a considerable period prior to operating, and thought his success in America would have been greater had this been possible.

The Scoliotome, a Machine for Elongating the Spine and Lessening the Rotation in Lateral Curvature.—COMPTON RILEY (Baltimore) says the external oblique is the principal muscle figuring in this deformity, the other muscles by their attachment and nearness being unable to cause the condition. In all lateral curvatures there is noticed a marked inequality of the sides of the pelvis, the anterior superior spines and the crests always differing. This may be due to numerous conditions, such as rickets, short leg, faulty attitude, etc., but in every case lateral curvature is a secondary condition, the primary cause making the pelvis unequal, overstretching the muscles on one side, which in turn pull the ribs with them. Treatment: (1) Overcome the cause; (2) stretch the weakened muscles (Swedish movements); (3) use the scoliotome, which consists of a square frame, a rack for the patient, and a weighted strap to overcome the deformity. With it any amount of force can be used at any desired angle without any exertion on the part of the physician.

Discussion.—R. W. LOVETT (Boston) exhibited an ingenious folding board for home use in lateral curvatures. It answers the purpose of more complex apparatus at a small cost, and is used in the home by the patient. It consists of a folding board with three belts worked by pulleys and ropes. The patient lies prone and uses any amount of force necessary to produce the correction. N. M. SHAFFER (New York) believes the cause is due to: (1) Anterior poliomyelitis; (2) unequal development; (3) growth following in the line of least resistance. Treatment: Ankylosing the articular processes, thus preventing further development though not curing already deformed spine. LOUIS A. WEIGEL (Rochester) treats the condition by straightening with force, and holds the position thus gained by an enameled paper cast.

[To be continued.]

AMERICAN DERMATOLOGICAL ASSOCIATION.

[Specially reported for *American Medicine*.]

FIRST SESSION (CONTINUED).

Syphilis and the Medical Secret.—P. A. MORROW said that from the ethical standpoint it is necessary that the physician keep the medical secret of his profession to the utmost in most diseases, and especially is this true when dealing with syphilis because of the private nature of the disease. Only by so doing and by virtue of this does the patient have the utmost confidence in the physician. The law has made the failure to keep this confidence an offense, and at the same time the physician is obliged to report all cases which are dangerous to public health. Syphilis certainly comes under this classification. In order to treat the case correctly the physician must direct his conduct in the line of duty. The interests of others must be considered as well as that of the patient, and especially is this true if the patient is a married man. The wife and children as well as those with whom he comes in contact must be protected. In many cases when the patient is a young man he goes to the physician for advice in regard to marriage, etc. It is distinctly

the duty of the physician to tell the patient of the dangers of the disease in marriage and he should use every means possible to prevent such marriage. Until he has done such he has failed to do his duty and is committing a moral and legal crime. It is his duty on the one hand to protect his patient and on the other hand to defend the innocent woman from the disastrous injury to herself and offspring. Here is a crime contemplated but not completed and the physician is the only person who can prevent it. The physician very often stands back and says nothing. His conscience as well as his professional code should guide him in his conduct. There are no circumstances in medical practice so painful as to see a syphilitic man infect an innocent woman in marriage. It is a sanitary duty to keep syphilis and marriage apart and the law backs up the sanitarian. The medical man feels the situation and his conscience makes him feel as an accomplice in the crime. Few patients when enlightened and warned on the subject postpone marriage. The physician owes it to his profession to use every available means and many patients could be brought to see the dangers and act accordingly. While some criminal monster may endanger the physician as to practice, and even as to life, yet in the face of all this the physician should be loyal to his profession. In many instances it is best to inform the innocent woman of the situation, and an understanding can usually be brought about. After marriage the physician should not tell the wife of the nature of the disease; it will spare mental anguish and worry. The patient should not confess either, but should persist in the treatment. The syphilitic child introduces a dangerous contagion, which is generally multiple. In France the wetnurse must be notified by the attending physician of the nature of the child's disease; it must then be insisted that the syphilitic child's mother nurse her offspring. When this is impossible, artificial nourishment must be resorted to. The drynurse is also exposed to danger, but not so much as a wetnurse. She should also be informed of the danger so that greater care may be taken on her part and those with whom she comes in contact. The child may be healthy and the nurse syphilitic, so the physician should examine both wetnurse and drynurse for evidence of the disease and if found they should give up their employment and situation.

Discussion.—T. C. GILCHRIST said that syphilis should be taken on the same standpoint as variola, for it is certainly a contagious disease. The sooner we can educate the people to recognize the danger of the contagion the better off the community will be. EUGENE FULLER said the specialist looks out for himself and does not regard others. He did not think it was good policy for the physician to interfere in marriage, as he gets very little thanks for his painstaking. Very few take it kindly. He thought legislation should take a hand in regard to marriage as well as to syphilitic servants and nurses. H. W. STELWAGON thought that before hospitals get their appropriation they should be bound to receive and treat syphilitic patients. This is a means of spread of the disease. He also thought the physician was to blame, as he very often belittles the disease; the patient is laughed at and made the subject of a joke. The contraction of syphilis is anything but a joke.

SECOND SESSION.

Dermatitis Venenata: A Supplemental List.—JAMES C. WHITE (Boston) said that this is a partial list of the substances noted since he had published his book which have been known to produce dermatitis: Chlorhydratparaphenyldiamin, orthoform, salol, aristol, ichthyol, resorein, dermatol, erophen, pyocetanin, creolin, iodvasogen, kerosene, electricity, "aurantia," coccuswood, guaiaicum, humulus, heracleum, angelica, hyacinth, ginkgo tree, cotoneaster, humea; while among the suspected agents are tecoma and ampelopsis. He reported a case of dermatitis from ginkgo tree which he saw in November. This tree is a native of China, and is grown in this country for its foliage. In this case a woman gathered the fruit, which was let stand for four days, when she washed the fruit in water, roasted it and gave it to the children to eat. While she was washing the fruit she noticed some itching of the hands and arms; on the second day the itching became intense and appeared on the face. A marked dermatitis could be seen. She was treated with lead acetate, and relief was obtained. There was no rhus toxicodendron about the yard or house, and no firewood was handled by the woman. Later another case with similar symptoms occurred under similar circumstances. In the Southern States the Virginia creeper has produced marked dermatitis. The trumpet vine has also produced it, and the dogwood has been accused in different instances as a cause, also the small laurel. Other cases are reported from handling green fruit of pawpaw, dog fennel, various molds, and radish tops, pollen of life everlasting. He was of the opinion that blonds were more susceptible than brunets. Homatropin, as used by amateur photographers, has been known to produce a dermatitis of the hands.

Report of a Case of Symmetrical Gangrene.—E. B. BRONSON (New York) reported the case of a young lady aged 17, of neurotic family and of nervous temperament, ambitious, but distinctly no hysteria, who 3½ years ago had an affection of her legs; various pains, at times severe, or vague, or burning, but at times lancinating in character. These came on at varying periods, and were always accompanied by erythema. The lesions remained at the same place and were at same

area on both legs, occupying a space $1\frac{1}{2}$ inches long, oval, at the middle and lower third of anterior surface of tibia dusky red in appearance, looked more like venous than arterial congestion, and was of a deeper hue in the center. Later it looked "bleb-like," as if it had been blistered, was kept under observation for one month, and no change whatever was noticed. She then disappeared and came back in three years with the same symptoms, and the same area was involved, except that it was a little larger and showed more evidences of cyanosis, especially at the center. The patient stated that four months previous to her return she had gone to a surgeon who exposed the areas to moderate x-ray, making six exposures, with the result that the lesions were worse and the pain was worse. About this time decided evidences of gangrene began, beginning on the outskirts of the ulcerated area, which gradually spread until the space occupied was exactly the same on both legs. After waiting for four weeks a papular erythema appeared over the entire body with intense pruritus. The gangrenous area was operated upon, the sloughs removed and the legs treated with silver foil. The area began to heal, and several skin grafts were made. The area healed perfectly, and since then there has not been any pain or erythema. Hysteria is distinctly contraindicated in this case. Raynaud's disease was thought of, but was doubtful because of the peculiar area involved, absence of the prominent symptoms and no pallor. Only the cyanosis in its favor.

Discussion.—S. POLLITZER thought this should be classed in a subdivision of Raynaud's disease—the cyanotic form—the cyanosis bringing about thrombi, thus accounting for the gangrene.

[To be continued.]

THE AMERICAN OTOLOGICAL SOCIETY.

[Specially reported for *American Medicine*.]

SECOND DAY.

The Effects of Increased Intratympanic Pressure: A Possible Explanation of Tinnitus Aurium.—H. O. REIK (Baltimore) called attention to a paper which he read before this society at its last meeting, presenting some physiologic experiments to show the cardiac and vascular effects of operations upon the middle ear. These experiments tended to show that operations upon the membranes or ossicles always produced a depressor effect, an unusual result to follow the stimulation of a sensory nerve, and that the lowering of blood-pressure and the duration of the period of depression was always in direct proportion to the amount of injury inflicted. This fall of blood-pressure that immediately follows any injury to the tympanum was shown to be due to the disturbance of the vasomotor apparatus and to account for that cardiac depression and syncope that so often accompany operations upon the middle ear; phenomena that had been erroneously attributed to disturbed equilibrium due to increased intralabyrinthine pressure. Following in this line of work Dr. Reik had attempted to determine the effect of increased intratympanic pressure as measured by changes in the pulse-rate and blood-pressure. The method of procedure was to inject fluid into the middle ear through a catheter fastened in the mouth of the eustachian tube. A mercury manometer was attached to the tube so that the pressure exerted within the tympanum at any given moment could be accurately recorded. At the same time the kymographion was registering the pulse-rate and blood-pressure. Charts were exhibited to show that any increase of pressure upon the fluid within the tympanum, in fact even the weight of that fluid, so small in amount, immediately causes a falling of the blood-pressure and of the pulse-rate and the greater the pressure exerted the greater will be the degree of depression and the longer will the effects be felt after withdrawal of the pressure. It seemed fair to conclude that any foreign substance, such as a pathologic exudate, whether it fills the tympanum or merely irritates the mucous surface of the tympanic membrane or tympanum walls, will produce a vasomotor disturbance. Dr. Reik then called attention to a suggestion made long ago that tinnitus aurium might be due to the appreciation of sounds produced by the circulation of the blood in the vessels in or bordering upon the tympanum and quoted from a paper on "Tinnitus Aurium," published some years ago by Dr. Samuel Theobald, who said: "I have been led to the conclusion that in almost all cases tinnitus aurium is to be attributed to the existence of vibrations excited in the walls of the bloodvessels by the friction attending the circulation of the blood." Both Dr. Theobald and Dr. Reik expressed the conviction that the generally accepted theory of increased intralabyrinthine pressure failed to explain the etiology of tinnitus in the majority of cases, since there is no reason to assume that in the majority of cases of tinnitus increased pressure in the labyrinth exists. Dr. Reik believed that his experimental work substantiated the hypothesis put forward by Dr. Theobald many years ago and that tinnitus aurium is the result of vasomotor disturbances in the middle ear and labyrinth produced by irritation of the tympanic mucous membrane, the blood supply of both regions being intimately associated by anastomosis and controlled by the same nerves.

A Case of Thrombosis of the Sigmoid Sinus, with Unusual Complications.—GORHAM BACON (New York).

The most interesting point in the discussion of this subject turned upon the question of ligation of the internal jugular, in cases where the sigmoid sinus is involved.

Discussion.—JACK and CROCKETT advocated the early ligation of the jugular in every case of sinus thrombosis, believing it to be an easy operation, which affords greater safety to the patient in diminishing the chances of conveying infection to other parts of the body and an operation that should be performed too soon rather than too late. Bacon believed that the operation was often more difficult than is generally supposed, and that in many cases it was not necessary, since the patient would recover without it, and he was not sure that its performance did not occasionally detract from the chances of success.

A Study of the Surgical Relations of the Facial Canal.—B. ALEX. RANDALL (Philadelphia) said that an examination of 500 skulls showed but a single instance in which there was a notable outward deviation of the canal. There was a group in which an apparent outward deviation was due solely to overlapping of the paramastoid process upon the stylo-mastoid, giving the canal an apparent outward course, although it was really vertical. In 60% of all cases no deviation from the vertical could be detected, and he felt warranted in reiterating his claim that in the vast majority of cases the descending portion of the facial canal is exactly or practically vertical, and that variability of course, as claimed by Schwartz, is of extreme rarity, if, indeed, it actually occurs in any degree demanding surgical consideration. The course of the canal was found to have no relation to the edge or cranial index of the skull.

A Case of Aural Fibroma.—BRYANT (Boston) said that this patient had been seen by several physicians and different diagnoses made, varying from a ceruminous plug to an exostosis. The mass in the canal was removed, and microscopic examination proved it to be a fibroma having rather large cells with elongated nuclei, the cells being arranged in columns and some of them undergoing hyaline degeneration.

Under the heading, **exhibition of new instruments**, BULLER (Montreal) exhibited a new contrivance for the more perfect and satisfactory inflation of the middle ear by Politzer's method; and JACK (Boston) exhibited a new mastoid retractor which he believed of value, because it could be quickly adjusted, easily kept in place, and holds the lips of the wound wide open.

Officers Elected.—President, B. Alex. Randall, Philadelphia; vice-president, Wm. H. Carmalt, New Haven, Conn.; secretary and treasurer, Frederick L. Jack, Boston.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

[Specially reported for *American Medicine*.]

FIRST SESSION (CONTINUED).

Why Not Employ Intracapsular Irrigation in the Extraction of Cataracts?—H. O. REIK (Baltimore) called attention to the very slight references to this operation in the recognized textbooks, and to the fact that these references were generally of a discouraging character, while a review of the literature showed that every operator who had properly employed the method was on record as an enthusiastic advocate of its employment as a routine measure. He stated the belief that many operators had feared to employ the method solely on the ground of theoretical objection, and that those who had condemned it had either failed to properly employ the apparatus and the method as set forth by McKeowen or had made an unsatisfactory attempt at the operation with inefficient apparatus. He called attention to the monograph published by McKeowen in 1898, and described the operation as performed by that surgeon. It has been claimed for intracapsular irrigation after extraction of the lens nucleus that it improves the chances of securing a successful result, diminishes the probabilities of concurrent iritis or keratitis, and lessens the number of secondary capsular cataracts, and consequently the number of dissection operations. Dr. Reik stated that he brought the question forward in order to ascertain whether there were any well-grounded objections to the employment of this measure, and after quoting from the published experiences of McKeowen, Lippincott, and others, he stated that his own experience with the operation had been entirely satisfactory and led him to believe that the employment of intracapsular irrigation properly was an improvement in the technic of cataract operations.

Discussion.—LIPPINCOTT referred to several papers he had published on this subject, and said that after 15 years' experience he now used irrigation for the removal of cortical matter in 90% of his cataract operations; in other words, in all cases except those in which there was threatened or actual escape of vitreous, or where the lens came out in its capsule. He had met with no disadvantages from the use of irrigation, and believed that its employment secured more benefits even than were mentioned by Reik. He quoted statistics from an additional 100 cases, not previously reported, showing the same good results as he had heretofore claimed for the operation. Dr. Lippincott exhibited an instrument which he had himself devised for the operation and which he believed had served him better than the original McKeowen apparatus. GRUENING said that the operation had never appealed to him, that he

believed he could empty the anterior chamber without irrigation, and that there was some danger in its use. HOLT replied that he had used irrigation for 14 years and could not agree with Dr. Gruening that it was at all dangerous. "With proper manipulation of the apparatus there is no danger to come from it, and I still think that by the use of irrigation you not only lessen the amount of irritation about the eye, but secure better results." RISLEY said that he had in the past made some adverse criticism of the operation, but that he was going to try it again, inasmuch as he was convinced that he had not given it a fair trial because he had not been employing the proper apparatus.

An Interesting Case of Retinitis Pigmentosa.—WALTER L. PYLE (Philadelphia). This will appear in future issue of *American Medicine*.

Leukosarcoma of the Choroid.—T. R. POOLEY (New York) exhibited a specimen of nonpigmented sarcoma of the choroid occurring in a man aged 35. When he first came under observation he presented the typical features of absolute glaucoma, and an iridectomy was performed. Later a fresh hemorrhage into the anterior chamber occurred, accompanied by pain and increased tension, and enucleation became necessary. Microscopic examination showed a typical small rounded sarcoma of the choroid.

Discussion.—MARPLE said that he had seen a case of leukosarcoma situated near the papilla in a patient only about 35 years of age. Both the situation of the tumor and the age of the patient were contrary to the general rule.

Are Tenotomies for Hyperphoria Necessarily More Uncertain in Their Results Than Those for Esophoria and Exophoria?—SAMUEL THEOBALD (Baltimore) related a number of case histories to show the varying results following the same operation, as nearly as he could regulate it, for hyperphoria. In some instances a tenotomy of the verticle muscle would secure a change of only four or five degrees, while in another instance it would amount to as much as 15° to 18°. He had sometimes found, too, that a slight over-correction gave the patient more discomfort than the original trouble operated for.

A Case of Panophthalmitis Following Dissection of a Capsular Cataract.—L. H. TAYLOR (Wilkes-Barre) had operated upon this patient for cataract in both eyes, and later performed a dissection operation upon the capsule. He believed his technic had been perfect in every respect, and yet infection followed necessitating enucleation.

Discussion.—MATTHEWSON, BRUNS, KNAPP, and RISLEY all reported somewhat similar cases, and Knapp called attention to the fact that there must be in such cases some infective material on the cornea just at the point where the knife is entered and thought that the operator should not blame himself since it is impossible to sterilize the eye perfectly, and there had been no fault in his own technic. LIPPINCOTT suggested the advisability of closing the puncta in all such cases by filling the conjunctival sac with a melted ointment of mercuric chlorid, since infection might come from the nose.

Officers Elected.—President, Chas. Steadman Bull, New York; vice-president, Arthur H. Matthewson; secretary and treasurer, S. B. St. John. A committee was appointed to confer with a similar committee from the Otolgical Society to determine the next place and time of meeting.

AMERICAN MEDICAL ASSOCIATION.

Fifty-fourth Annual Meeting, Held at New Orleans, La.,
May 5 to 8, 1903.

[Specially reported for *American Medicine*.]

Section on Practice of Medicine.

FIFTH SESSION (CONTINUED).

The Passing of Chronic Rheumatism.—J. J. WALSH said most persons under 40 think they have had rheumatism, when in fact few have had. Doctors are to blame for this prevalent error. Osteopaths depend for their clientele upon those who have been erroneously treated for chronic rheumatism. The latter arises only from repeated attacks of acute rheumatism. Four different painful conditions are often erroneously diagnosed chronic rheumatism: 1. Relaxed ligaments, as in flat-foot, at the shoulder or knee joint. 2. Occupation neurosis; almost any occupation may lead to some form of neurosis, and the pain is usually worse in rainy weather. 3. Neuritis; as for instance in the group of shoulder muscles, when they are exposed or overworked, pain will be felt in the joint because the circumflex nerve sends trophic fibers into the joint. 4. Gout is often mistaken for rheumatism, and it is much more common in this country than is generally supposed. It is only about 25% less frequent here than in England, and is especially common in lead-workers and beer-drinkers; and arthritis deformans, which is also more frequent than is commonly supposed. It assumes three forms: 1. Those cases with Heberden's nodes, which is an osteitis at the ends of the bones, with early pains. 2. Osteoarthritis, which is more common in young women and in old men—in the latter often a spondylitis. 3. Acute rheumatoid arthritis. The term "rheumatic diathesis" has no real meaning in medicine and should be expunged from the medical vocabulary.

Discussion.—JAMES TYSON said the subject is a difficult one because it has no definite pathology. He thinks more cases are called gout than should be. We cannot positively say a case is gout unless there has been a well-defined previous attack or unless Heberden's nodes are present. Uric acid diathesis is a much abused term. If we have a persistent condition of scanty urine, high specific gravity, with uric acid sediment, we may speak of it as a uric acid diathesis, but even then we do not know the pathology of the condition. THOMAS McCRAE said we know little more about this condition than was known 100 years ago, when Heberden wrote exhaustively upon the subject. LAMBERT said cases frequently occur, especially in young women, which begin as acute rheumatism, but which are arthritis deformans. There is much more gout in New York than formerly, and he is of opinion there is more chronic rheumatism than Walsh apparently believes. Uric acid diathesis is a poorly-understood condition. Athletes have been observed to have much uric acid in their urine at times, yet certainly with them there is no great tendency to rheumatism or gout.

Albuminuria in Diabetes.—A. R. ELLIOTT said there are no typical renal lesions in diabetes. Hyaline degeneration of the tubular epithelium is observed in most severe cases. In some mild cases there is a chronic interstitial nephritis; in most, however, there is a combined interstitial and parenchymatous nephritis. About 43% of the cases have albumin. A toxic albuminuria always eventually arises in all severe forms of diabetes, but it is never severe. A degenerative albuminuria arises as a result of the irritation produced by the sugar. It begins as a local inflammation, but finally cardiovascular changes arise, and interstitial and parenchymatous changes in the kidneys. Coma is always preceded by albumin and casts. Kidney alterations are always antecedent to and often the cause of coma; yet this is not the coma of uremia.

Arthritis Deformans.—THOMAS McCRAE gave an analysis of 110 cases. We know little about this disease. Broadly speaking, there are two groups of cases: (1) Those exhibiting bony changes, and thus producing osteoarthritis; (2) those exhibiting changes in and around the joint, the rheumatoid group. Another method of grouping, without reference to the pathology, give us: (1) Those exhibiting Heberden's nodes—clinically it has been observed that these are apt to escape involvement of the larger joints; (2) polyarticular involvement; (3) nonarticular involvement; and (4) spondylitic cases. Ninety-four of the analyzed cases were of the polyarticular type, 30% being before the twentieth year and 50% being before the thirtieth year. Of the 110 cases 106 were white, 4 were colored, and 96 were native born. The disease is often mistaken for chronic rheumatism; it bears no relation to acute rheumatic fever, nor to a preceding gonorrheal infection. The attack was gradual in onset in 45 cases, and acute in 41 cases. The cervical vertebrae are at times involved; nearly 25% of the cases had involvement of the temporomaxillary articulation, and one or both knees were involved in 80 out of 92 cases. The temperature runs from 99° F. to 100° F., while the pulse-rate is high, averaging about 96. These differentiate it from acute rheumatic fever. There may be periods of latency; the heart is not involved. The spondylitic cases were 22, 20 being in males and 2 in females, and in 15 the whole spine was involved. Pain in the spine and legs resembles sciatica. We can differentiate from Pott's disease by the use of tuberculin and the Röntgen rays.

Discussion.—J. J. WALSH said no other affection gives so much scope to quacks as the so-called chronic rheumatism, but which in reality is too often arthritis deformans. This disease is common in this country, while true chronic rheumatism is rare. J. J. MOORE said he had found a large number of these cases in the dissecting-room, which in life had rarely been recognized. Investigation of this disease is much needed. McCRAE closed by stating that the disease is probably some form of infection. Treatment should be along general lines—plenty of nourishment, iron, arsenic, massage; rest is indicated in the osteoarthritic cases, and exercise in the articular group is indicated. Massage and exercise prevents contractures and atrophy.

[To be continued.]

Section on Surgery and Anatomy.

FOURTH SESSION (CONTINUED).

Epithelioma Under the X-ray: A Preliminary Report of the Histologic Changes.—J. CLARK STEWART (Minneapolis) reports the case of a patient whose finger was cut by a bottle, epithelioma afterward developing in the wound. It was treated by exposure to the x-ray and successive blocks of tissue were cut during the treatment until the growth seemed entirely cured. In all seven blocks of tissue were cut. The more important changes which were noted in the tissues microscopically examined were fatty degeneration, which was found in the pearls of epithelial cells in all the blocks. Later on vascular changes occurred, new bloodvessels being formed, which were tightly packed with polymorphonuclear leukocytes. In the later sections necrotic changes were noted in the cells and in the latest section nothing was left, the cells being entirely destroyed by coagulation necrosis, and only fat, broken down epithelium, and polymorphonuclear leukocytes could be seen. Different patients and different tumors no doubt vary in their susceptibility to the x-rays. In this case the subsequent history

was of progress of the growth beneath the skin, the exposed tissue melting away entirely.

Discussion.—CHRISTIAN (Boston) mentioned a case of epithelioma of the hand in which he had had an opportunity of examining microscopic specimens before treatment and during treatment by the x-rays. In this case the epithelial cells were found dead and surrounded by giant cells. There was no effect noted on the connective tissue cells, though neighboring epithelial cells were killed. Few, if any, polymorphonuclear leukocytes were seen and no inflammatory changes were noted. Not too much stress should be laid upon fatty degeneration in Stewart's case, for the reaction employed is open to some objections, osmic acid staining several other tissues beside fat. Fat is also always present in cases in which polymorphonuclear leukocytes are present, and these are always present in ulcers of whatever sort. Another source of doubt was that Stewart's tumor was not examined microscopically before the x-ray treatment was begun. Christian considered the bloodvessels which were seen in Stewart's case probably those which are usually found in all granulation tissue. NICHOLS (Boston) has seen a number of cases in which epithelioma has skinned over after treatment with the x-rays, but the disease was still present in the deeper tissues. The changes noted in the cases treated under the observation of the Cancer Commission of Harvard were not characteristic. Probably the action of the x-ray is to be explained by the changes which it produces in epithelial cells of low vitality where the more resistant cells are not affected. Epidermoid-carcinoma may be produced by the action of the x-rays. Nichols mentioned one case in which death resulted from epidermoid-carcinoma in a man who had worked a great deal with the x-rays and had suffered from severe x-ray burns. RIDLON (Chicago) doubts if sunlight alone is of great advantage in the treatment of tuberculosis. The value of sun and fresh air is most noticeable in the case of city children, and is probably caused by the change from their accustomed environment, for country children are not correspondingly benefited by such treatment. A number of cases of tuberculosis have been under treatment by the x-rays by his associates, but it is too early to say anything definite about the results. Ridlon has the impression, however, that the benefit is more often seen in tuberculosis of superficial joints, not of the deeper joints, such as the hip and vertebrae. LUND (Boston) called attention to the fact that most of the cases of the carcinoma which have been successfully treated by the x-rays were the nonmalignant epithelial variety. Many surgeons are premature in saying that the day of the knife has passed. The local disease is frequently cured in these cases, but the glands are already affected and x-ray treatment has not proved successful in the treatment of glandular involvement. Lund believes that such growths should be excised early in every case, while radical operation is still possible, and that we should not tamper with the x-ray. THOMPSON (Scranton, Pa.) mentioned a case of carcinoma of the pylorus with obstruction in which excision of the growth seemed impracticable. Posterior gastroenterostomy was performed and 48 hours later the wound was reopened, gauze was packed about a tumor of the size of an orange and the x-ray treatment was tried directly on the growth. A gastric fistula resulted from sloughing, but by gauze packing food was retained. Temporary improvement resulted, but death occurred in a month after the operation. WILLARD, in closing, said that he advocated the use of light and the x-ray simply as adjuvants to other recognized methods of treatment. The x-ray at least relieves pain in certain cases and may prove of considerable help. He has found fresh air and sunlight as valuable in treating country children as city children. Frequently the sanitary conditions in the country are as bad as in the city. STEWART, in closing, stated that the vessels in his specimens were real vessels and not such as are to be found in granulation tissue.

Varix of the Inferior Mesenteric Vein Complicated by Chronic Ulcerative Colitis; Operation.—JOHN E. SUMMERS, JR. (Omaha). The varix of the inferior mesenteric vein in the case reported was either an effect or cause, most probably the former, of a chronic ulceration of the rectum and sigmoid flexure of the colon. The ulceration was accompanied by the usual clinical signs and demonstrated by ocular inspection. An incision in the left inguinal region, made for the purpose of establishing a temporary artificial anus, disclosed an intense dilation of all of the radicals going toward the formation of the inferior mesenteric vein. The project of the establishment of an artificial anus was abandoned. At a subsequent operation an attempt was made to discover any interference with the return circulation. These operations were without benefit to the patient. A gastroplasty and in addition a Morrison operation were carried out with the purpose of relieving the congested circulation; much benefit followed. Two months later an artificial valvular fistula was formed in the cecum and the colon irrigated daily, the patient gaining 20 pounds in weight. Another experience in which an artificial valvular fistula in the cecum for the purpose of irrigation in the case of chronic colitis was mentioned.

Discussion.—SMYTHIE (Memphis) stated that in the hospital to which he was the attending surgeon all cases of colitis, such as had been reported by Summers, are now referred to the surgeon. Operation is simple in these cases, and the results have been very favorable.

Congenital Dislocation of the Radius.—CHARLES A.

POWERS (Denver) reported in careful detail a very interesting case of this kind. The position of the hand in extreme pronation and grasping motion were quite characteristic. The motions of pronation and supination were absolutely wanted, and flexion and extension of the elbow were limited. Operation was refused by the child's parents without assurance could be given of much benefit, and from the results in the cases previously reported Powers was not prepared to give this. Details of the few cases which have thus far appeared in the literature were given.

Discussion.—BOTTOMLEY (Boston) reported two cases which had occurred in the service of Cotton, at the Massachusetts General Hospital. In one case both elbows were involved. Excision was performed, followed by early passive motion with a perfect result on the right side, and improvement on the other side. WILLARD (Philadelphia) has seen several cases of this kind, in which the extreme pronation and grasping motion of the hand noted by Powers were present. He would advise resection of the elbow and division of the muscles, if necessary, to relieve the extreme pronation. The improved appearance of the arm would repay one for operation, if nothing else.

Acute Epiphysitis of the Head of the Femur Causing a Condition Subsequently Simulating Congenital Misplacement.—JOHN P. LORD (Omaha) reported a case in which all of the appearances of congenital dislocation of the hip were present. An abscess had appeared over the hip-joint following an attack of pneumonia, and Lord thought that the infection was possibly from the pneumococcus. An unsuccessful attempt was made to remedy the deformity by the Lorenz method. The Hoffa cutting operation was then tried, and considerable improvement resulted. Lord believes that a perfect cure of the condition would be impossible.

Discussion.—RIDLON (Chicago) has had no personal experience in the treatment of these cases until a short time previously, when two cases came under his care. He believes that the condition is rare. Both cases were operated upon. The only treatment is to operate, pull the bone down in position, abduct the leg and fix it in this position for a number of years if necessary. TOWNSEND (New York) considers abduction all important in the treatment of these cases. Either casts or traction may be used to produce it. In some cases after forcibly pulling down and abducting the patient should be allowed to get about on a high shoe to return for treatment if necessary.

[To be continued.]

Section on Obstetrics and Diseases of Women.

SECOND SESSION (CONTINUED).

Discussion.—MARCY (Boston) had contented himself by modifying Sims' operation for cystocele. He thanked the essayist for pointing out the anterior vaginal plane. THIENHAUS (Milwaukee) cited various forms of cystocele. If in a woman 50 years of age, the uterus must usually be fixed, especially if the uterus is in the axis of the vagina. He uses vaginal suspension, thus retaining the uterus in the pelvis, where it belongs. BOVÉE (Washington, D. C.) considers it rational to treat cystocele as a hernia. He practises resection, always passing the sutures transversely. Unless the operation is skillfully done it will pull the cervix forward. REYNOLDS, closing, stated that his method brings the vaginal walls together from side to side, narrowing the vagina.

An Investigation as to the Proper Time for Repair of Lacerations of the Cervix Uteri.—DANIEL H. CRAIG (Boston). This paper involves an investigation covering one year and five months. As a basis of study the results of 100 tracheloplastic operations performed at the Free Hospital for Women were tabulated. A majority of these operations were trachelorrhaphies. The cases include those in which from two to five years have elapsed since the operation. The first desire was to prove tracheloplasty a necessary and justifiable procedure. To consider an operation necessary symptoms must exist which fail of relief by palliative treatment, and to be justifiable it must relieve these symptoms without causing sterility, miscarriage, or dystocia. Another justification is that it serves as a prophylactic against cervical carcinoma. A circular letter was sent asking certain questions. In the answers received complete relief from symptoms had resulted in 78 cases, great relief followed in 11 cases, no benefit accrued in 11 cases. There were 37 pregnancies subsequent to trachelorrhaphy, and of these 24 (80%) went to full term. Twenty-three of the 100 cases were past the child-bearing period. Therefore, a proper tracheloplasty does not engender sterility. Inquiry made as to relaceration at the time of delivery, about one-half the cases reported showed a relaceration; this, then, cannot be considered a serious contraindication to tracheloplasty when definite indications for it exists. Regarding subsequent womb trouble inquiry showed that 67% women have, after the lapse of two to five years, been entirely free from "womb trouble." Craig has learned that 12 of the 33 not permanently cured owe their symptoms to adnexal lesions, fibroids, etc. There has been no instance of malignancy. Having satisfied himself that a proper tracheloplastic operation after proper palliative preparation was curative and justifiable he turned his attention to its prophylactic influence as regards cervical carcinoma. Fifty gynecologists were addressed. In addition 78 cervical carcinoma cases treated in the Free Hospital for

Women were investigated. In no single instance was a history of a previous tracheloplastic operation found in a carcinomatous cervix. Answers received in connection with investigation convince Craig that at least 90% of the cases of cervical carcinoma occur in previously lacerated cervixes remaining unrepaired. From information gathered he is convinced that a properly repaired cervix reverts in labor to about the condition of the primiparous cervix as regards laceration. The following conclusions are reached: 1. Immediate repair of the cervix is indicated only in exceptional cases, aside from the control of hemorrhage. 2. Mediate repair is contraindicated, except it be in some unusual cases. 3. Secondary repair is indicated so soon as symptoms are definitely due to the laceration, such symptoms failing of relief by palliative measures or recurring after apparent palliative cure. 4. Operations on women past 35 give better permanent results than in younger women. 5. Repair of the cervix is indicated as prophylactic of malignancy in a woman approaching the cancer age, if the cervix manifests locally evidence of cellular irritation, whether or not causing subjective symptoms. 6. Lacerations in which operation is not indicated should be kept under close observation as the cancer age approaches. 7. Obstetricians are obviously unable to avoid lacerations of the cervix in many cases, but if the above deductions are correct a far more strict asepsis will, by favoring spontaneous primary union of such lacerations, do much toward lessening the number of secondary tracheloplastic operations.

The Hygiene of Young Girls.—J. H. CARSTENS (Detroit) considered the conditions of girls during puberty, and included the care of both body and mind. In some walks of society girls are required to do hard work with poor food, bad air, general bad hygiene; they may have strong but ungraceful figures. In other social conditions the mental training is far beyond the physical strength. We desire equal development of body and mind. Predisposition to nervous affections was dwelt upon. The influence of the mother often intensifies neurasthenic or hysterical tendencies. The mother imbues the daughter with the belief that the latter is nervous and cannot help it, and the belief becomes established. Often it is necessary to take away the daughter for a time from the baneful influence of the mother when a wonderful change for the better may result. The mother suggests a train of pelvic troubles. Poor girls undergo hardships of physical strain and the ignorance on the part of the mother as to hygiene is often at fault. The physician can usually manage the latter cases. He can regulate the kind of work, and control in various ways. The State should regulate the hours of labor and ventilation, should see that proper toilet facilities are provided. Diet above all should be regulated. Gymnastics and sports of girls should be encouraged and directed. So guiding the girl, the menstrual function will take care of itself. As to the mental development of girls there is greater difficulty. The rich are ever ready to stop school when advised by the physician. With the poor or middle classes there is the greater difficulty. Often a girl is ambitious, or feels that she needs an education to aid in supporting herself and others. If she continues in school, the nervous system will collapse; if she marries, she becomes a burden to her husband. In many such cases mental work should be stopped to be resumed perhaps in a year. The hygiene of girls is a problem most difficult. There is no general rule, but each case should be studied. Heredity, environment, assimilation, elimination, the nervous system, etc., must each be considered. The physician must have tact sufficient to manage both the patient and family, and he must work out each case for himself.

Pelvic Disease in Young Girls.—F. LAWRENCE (Columbus, Ohio) says that prejudice has often been met in the laity and among general practitioners against the pelvic examination of young girls. He wishes to direct the attention to the fallacy and injustice of such a position. The young have equal rights with the old to relief and protection. Many, if not all, pelvic diseases are curable. Displacements destroy functions of tubes and ovaries, render the patient sterile, and, therefore, demand relief. A chaste man will not excite any impure thought in the mind of a patient. Sound physical organism is the surest protection against degradation. Nymphomania, he believes, occurs only in diseased conditions of the genital organs. The recto-bimanual method should be used except in rare conditions. Sterility may be the result of neglected pathologic conditions in the girl. Tuberculosis is not infrequent, leukorrhea is common. Symptoms often direct the attention to the nervous system or circulatory system. Symptoms of irregular menstruation or menstrual pain point to disease and should lead to investigation. Displacements, infantile uterus, metritis, fibroids, endometritis, ovaritis, prolapse, septic salpingitis, all occur in the young girl.

Discussion.—MCMURTRY (Louisville) considered that these subjects have been too much neglected by the section. It is common for the gynecologist to be consulted by young women neurasthenics, a condition that could have been avoided by proper prophylaxis. They were apt to pass in rotation through the hands of the general practitioner, the oculist and gynecologist, and finally as nervous wrecks into the care of the neurologist. It is often essential to protect and prevent too much being done in these cases. If in conditions of neurasthenia the environment could be altered in the incipency the greatest advance in therapeutics would be made. EFFA GRAHAM (Chicago) has treated girls for gonorrhoea at 4, 6, and 14 years of age.

The latter was in the hands of a physician for six weeks without improvement. He had failed to make an examination. Better examine 100 girls free from gonorrhoea than by failure to examine miss one who has the disease. This case had been infected by the nurse. The case of a girl of 18 was cited, in which retrodisplacement existed, and the fact emphasized that whenever disease exists the patient has reached the age to cure the disease.

[To be continued.]

Section on Diseases of Children.

FOURTH SESSION (CONTINUED).

Management of Catarrhal Pneumonia in Infants and Young Children.—CHARLES GILMORE KERLEY (New York) said that the first step should be to establish a sick-room régime. The value of fresh air was not sufficiently appreciated in connection with the management of this disease. The necessary change of air was most easily and effectively secured by the use of the wellknown window-board. Coddling and over-clothing these children were the rule, and should be prevented. The food should be reduced one-third or one-half and the intervals between medicines and external applications should be arranged, particularly at night, that the sick child was disturbed as little as possible. Among distinctly remedial measures steam and creasote inhalations deserved a prominent place. Ten drops of creasote should be added to one quart of water in a croup kettle, and the vapor conducted to the crib for about 30 minutes every three hours. Revulsives should be found very useful. Among the best were the mustard plaster and an embrocation composed of oil with one-third turpentine. The mustard plaster should not be applied longer than enough to produce reddening of the surface, and not oftener than two or three times in the 24 hours. Expectorants must be given with care lest they disturb the stomach. For a child of one year he would prescribe $\frac{1}{10}$ of a grain of tartar emetic and $\frac{1}{10}$ of a grain of ipecac, and if the cough were teasing small doses of sodium bromid might be advantageously added. Syrups should be avoided. If the fever ran high and bathing was not well borne, or the attendant could not give them properly, a child of one year might be given $\frac{1}{4}$ of a grain of caffeine, and $\frac{1}{2}$ grain of phenacetin at intervals of four to six hours, and if there were great restlessness one might even give cautiously a little Dover's powder. Heart stimulants should only be prescribed when there were distinct indications of failing heart power; then he would give one drop of strophanthus every three or four hours. Strychnin was a useful adjuvant, but whisky or brandy, because of their disturbing action on the stomach, should be strictly reserved for occasional emergencies. When employed, it should be given in doses of $\frac{1}{2}$ dram to 1 dram, well diluted with water, every two hours to a child of one year. For the relief of marked cyanosis $\frac{1}{10}$ of a grain of nitroglycerin could be given every three hours to a child of one year. A sponge bath at 90° should be given daily. When the temperature showed a tendency to go above 104° F., the temperature should be controlled by sponging off the body surface with one part of alcohol and four parts of water. The child should be sponged under the blanket for 10 or 15 minutes at a time, and then the skin briskly rubbed with the hand. He had not found tub baths a desirable antipyretic measure in these children; a far better and more potent method was by the use of the wet pack. The child should be covered with a bath towel from the neck to the middle of the thighs, and a hot-water bag placed at the feet. At first the towel should be moistened with water at 95° F., and then after a few minutes with water at 85°, the temperature being gradually lowered to 80°. After a half an hour, if the temperature had been very little reduced, and had originally been at about 105°, the temperature of the pack might even be gradually lowered to 65° or 60° F. The aim should be to keep the body temperature between 102° and 103.5° F.

Discussion.—C. F. WAHRER (Fort Madison, Iowa) described graphically some of the conditions met with in rural private practice, and said that undoubtedly some of these children were smothered to death by the treatment employed. He added that it was not always easy to differentiate in children between a pure bronchitis and a pure pneumonia. WILLIAM CARVER WILLIAMS (Chicago) said he wished to still further emphasize that very important part of Dr. Kerley's paper which pointed out the necessity in carrying out our treatment—to disturb the child as little as possible and husband its vitality. R. B. GILBERT (Louisville) said that when an emetic was indicated he was of the opinion that turpentine mineral should be given the preference, as it produced emesis promptly and the subsequent nausea was of short duration. THOMAS D. PARKE (Birmingham, Ala.) spoke of the asthmatic element often associated with bronchitis, and which was frequently not recognized and treated. He made it a rule in the treatment of bronchopneumonia in children to watch for tympanites and endeavored by appropriate regulation of the diet to prevent it, and so avoid one of the common causes of respiratory embarrassment. Among drugs, his main reliance was on strychnia, given in solution as a rectal enema. He did not hesitate to give a child of 1 year $\frac{1}{10}$ of a grain, and if necessary even more. He was not alarmed if this dosage caused some twitching, for he had never seen any harm from it. HUGH A. LEAVELL (Louisville)

said there could be no doubt that much could be accomplished by the use of inhalations, yet it was possible to carry this treatment too far, and in the later stages smother the child in its own secretions. Much could be done in the way of controlling the fever by occasionally emptying the stomach and promoting the activity of the bowel. Heart stimulation he considered of the greatest importance, and consequently began early the use of strychnin. BARBOUR, closing, said that he avoided cough syrups and made use of strychnin from the beginning to the end of bronchopneumonia, giving it in doses sufficient to cause muscular twitching. He also held belladonna and aconite in high esteem.

FIFTH SESSION.

The Safranin Reaction in the Urine of Children.—W. S. CHRISTOPHER and A. C. CROFTAN (Chicago) presented this paper in abstract. The test was new, and consisted in a color change produced by the presence in the urine of a substance, which Dr. Christopher considered to be sugar. The following were some of the conclusions from this study: (1) Safranin is a reliable and convenient test agent for sugar in the urine in quantities too small to be detected by the copper test; (2) safranin is decolorized by sugar, but not by uric acid; (3) the "safranin index" is the number of cubic centimeters of a 1-1,000 solution of safranin solution which are decolorized by 1 cc. of urine; (4) the normal safranin index is low during the first year of life, but gradually increases until it reaches a maximum between the third and fourth years, after which it slowly decreases for a number of years; (5) during the first 10 years of life boys have a constantly higher safranin index than girls; (6) at the age of 11 years the index curves of the two sexes cross, the girls becoming superior; (7) both the safranin and acid toxemias play an important role in infancy, and are responsible for many of the difficulties in infant feeding.

The Treatment of Scarlet Fever, Its Complications and Sequels.—H. M. MCCLANAHAN (Omaha) insisted upon the importance of keeping all scarlet fever patients on a liquid diet for not less than four weeks, in order to prevent renal complications. For hyperpyrexia associated with great restlessness he found hydrotherapy particularly useful. Oily applications or bathing the skin with a 1% carbolic acid solution was comforting to the patient and served to limit contagion.

Discussion.—R. B. GILBERT (Louisville) was accustomed to prescribe iron ammonio-citrate in all these cases. The physician who prescribed baths for his private scarlet fever patients must meet many difficulties and assume additional responsibilities, chiefly because of the prejudices and ignorance of the laity. B. R. SHURLY (Detroit) spoke of the treatment of scarlet fever by the use of antistreptococcal serum, and stated that he had used it rather late in two malignant cases, but death had occurred nevertheless. He wished to emphasize especially the great importance of irrigation of the nose and throat in the early stage.

Prolonged or Retained Intubation Tubes, With a Method of Treatment Leading to Their Extraction.—B. R. SHURLY (Detroit) described a number of cases, reviewed the literature, and spoke of the danger of metal intubation tubes. A large dose of diphtheria antitoxin as a preliminary to extraction of the tube was a great aid. The treatment advocated consisted in the use of small or modified tubes coated with alum ointment or gelatin. This treatment had been successful in all of his cases.

Pseudohydronephrosis or Paraneuritic Cyst in a Boy of Three and a Half Years; Operation; Recovery.—SAMUEL W. KELLEY (Cleveland) sent the report of this case, together with photographs.

Officers Elected.—Chairman, Charles G. Kerley, New York City; secretary, Charles F. Wahrer, Fort Madison, Iowa. Henry E. Tuley was reelected to the House of Delegates.

Section on Sanitary Science and Hygiene.

SECOND SESSION (CONTINUED).

The Present Status of the Filtration of Water.—GEO. G. FULLER (New York) stated that the composition of the water supplies of the different cities in the United States varies considerably. Lawrence, Mass., has 10 parts solid matter per million parts of water in the water supplying it; Allegheny has 50 parts per million; Cincinnati has 230 parts per million; Louisville has 350 parts; New Orleans has 650 parts, and St. Louis has 1,000 parts per million. It is possible to purify any water into a potable water by filtration. The varieties of filtration of water for the supply of large cities was described. The mechanical method is the cheapest. At New Orleans the Mississippi river water contains small submicroscopical particles of clay suspended. The hygienic condition of the water at New Orleans is good, containing only three *Bacilli coli communis* per one cubic centimeter. The sewage from 45,000 persons empties into the river above New Orleans within 250 miles of the city, but none within 130 miles. There are no records to show that harmful results follow the use of sulfate of aluminum. It is used in cities with an aggregate population of 2,000,000. Present status: Any water may be purified by some one or by a combination of the methods of filtration.

Discussion.—SWARTS (Providence, R. I.). There is no danger in using aluminium sulfate, and people should not

object to it. Nature employs chemical methods as well as sand filtration in the artesian wells. He is glad to know that the mechanical method is cheaper than the sand filters. All inland cities suffer from bad water supplies, and he is of the opinion that filtration will do much toward mitigating this evil. He is glad that Mr. Fuller emphasized the fact that aluminium sulfate does not prevent the use of the sand filter also. In Providence they were unable to use the alum method, as the citizens did not wish "doctored" water. Ozonization of water destroys bacteria. The treatment of surface water, he is glad to know, will give a potable water. The mechanical method he thinks is best, as it is the simplest and there is less likelihood of contamination. CHAPMAN (Toledo): Ignorance as to filtration is very prevalent. The masses need education along this line. Most people consider the water of the Great Lakes a pure water, but the water of Lake Erie is not a potable water. Toledo has established a plant for its purification. He believes that the mechanical method is excellent. The water-supply of Toledo is at times muddy, and in these instances he uses aluminium sulfate as a coagulum. E. B. BORLAND (Pittsburg) thinks any contaminated water can be purified by filtration. The laity have no ideas or appreciation of the value of filtration. The real value is in the gelatinous film which forms on the top of the filter. By experiments carried on in Pittsburg it was found that 98% of the bacteria were removed in the first two filters. Fifty-seven thousand bacteria were found in 1 cc. of water, but all of these were gotten rid of by filtration without the aid of a coagulum. S. G. EGBERT (Philadelphia) thinks that the regions to be especially taught are the rural districts. Physicians should be taught the value of filtration. The cost of maintaining a filter plant is less than the cost of illness to the community. F. J. MAYER (Lafayette, La.) wished to emphasize the importance of educating the public to the value of pure water: The majority of the water in the State of Louisiana is unfit for drinking. This is especially the case in the rural districts. The Mississippi river water is the most potable water in Louisiana. In the inland parishes it is especially difficult to obtain potable water. Many so-called artesian wells in Louisiana are merely surface wells and are not potable. It is absolutely necessary to educate the masses. W. G. OWEN (White Castle, La.) has found several cases of typhoid traceable directly to drinking cistern water. FULLER, in closing, said that the gelatinous layer on the surface of the sand filter is the real filter. The organic matter in the water forms a gelatinous coating around each granule of sand or clay and this catches the bacteria. In order for a mechanical filter to be effective the gelatinous material must be supplied if not present. Mechanical filtration is best suited for some waters, and sand filters for others.

A resolution was submitted by Dr. F. J. MAYER, of Lafayette, La., and passed unanimously by the section, to submit a resolution to the House of Delegates requesting the establishment of a section on medical jurisprudence in the American Medical Association.

Stereopticon slides of the proposed purification plant were then shown.

[To be continued]

Section on Nervous and Mental Diseases.

SECOND SESSION (CONTINUED).

Neurasthenia, and Its Treatment by Actinic Rays.—ALBERT E. STERNE (Indianapolis) summarized his paper as follows: (1) Actinic rays are chemic in their quality, but of small calorific value; (2) they exist mainly in the ultraviolet zone of the spectrum; (3) actinic rays derived from high power electric light are similar or identical to those of solar radiation; (4) their use is as rational as that of sunlight itself; (5) their value lies in their decomposing but at the same time reconstructive molecular action upon the body tissues, mainly the fluid elements; (6) by the method herein spoken of their activity is enhanced by the generation of ozone in free and nascent form; (7) their ultimate effect is one of oxidation, and consequently they increase the metabolic changes, thereby augmenting the natural processes of regeneration within the system; (8) the germicidal action is especially pronounced on account of the fact that few germs can exist in the presence of free or nascent oxygen.

Symposium on Relation of Public School Methods to Psychoses.

Relation of the Public School to the Seminary and College as to Psychoses.—F. SAVARY PEARCE (Philadelphia) emphasized the fact that there was not sufficient correlation between the various institutions of learning, and that the desire of the teacher for originality had led away from fundamentals, and for this reason students were often overworked. The subject chiefly concerned not the boy on the farm but the citybred youth, who among the comforts and confinement of city life too frequently neglected his physical training. It had been his experience, in observing the average American boy or girl who passes from the city grammar school to the high school and finally to the academy or college, that there was a wide variance in the methods of instruction, brought about largely in some instances by the fact that too much stress was

laid upon particular methods of instruction. Of course, the greatest trouble lay in the fact that growing children were often put to tasks which their brains could not compass. In many instances psychoses in children and early adult life could be laid at the feet of the general practitioner, who did not prove to be a wise guard, as he should be, and had failed to advise against the evils of overstudy on the one hand, and overtraining in gymnastic exercises on the other.

Best Methods of Counteracting Psychoses Due to Strain and Stress Incident to Our Public School Methods.—WILLIAM JAMES HERDMAN (Ann Arbor, Mich.) summarized his paper as follows: 1. A careful medical inspection of school children at the beginning of their school life and at stated intervals thereafter, covering both their physical and mental capacities. 2. All teachers should be well instructed in the physiology and psychology of the child and in the principles of school hygiene. 3. School buildings and their environments should be made to comply with all the requirements of modern school hygiene as to light, pure air, temperature, seating, decorations, playground facilities, etc. 4. The curriculum should be so flexible as to allow more opportunity for the exercise of the individual judgment of the teacher as to the best method to adopt for each child in order to secure for it the greatest educational value, and the curriculum should include facilities for appealing to the mental faculties along every sensory pathway, among which facilities he would mention nature study, rational kindergarten, manual training, and physical exercise. 5. The number of pupils assigned to any one teacher should be only such as he or she can care for to the best advantage. Time should be allowed the teacher for a careful study of the physical and mental needs of each pupil. 6. A closer relationship between the parent and teacher, with a view of securing the end sought—the highest and most useful development of the child. 7. The removal so far as possible of all conditions within or without the school-room that interfere with the accomplishment of this purpose.

Discussion.—H. N. MOYER (Chicago) said he felt convinced that the psychoses of childhood were largely incidental to the developmental period *per se*, and were the result of bad heredity and primary defects in the nutritional processes rather than of overwork and the stress and strain of school life. They were manifestations of impaired nutrition during the growing period, when nutrition represents such a vastly more important factor than it did after the age of puberty. The nutritional factor was the broad, underlying principle of pedagogy and education. All other factors, such as eyestrain, etc., were supplemental to it. All organs of the body could only be strengthened by use, but we must stop short of strain. The early breakdown of the athlete was due to the fact that there was a maladjustment of the organs resulting from the decay and atrophy of those organs upon which there was no longer any strain after youth had gone. JOHN PUNTON (Kansas City) said there was a great need of a consensus of medical opinion in reference to the relation of school education to nervous diseases, and up to the present time nothing of a tangible nature had been done in that direction. The appointment of medical inspectors in the public schools was in the line indicated, but much still remained to be done. He referred to the value of anthropometric measurements as a guide in estimating the mental and physical capacity of school children, and stated that if they were systematically carried out they would go far toward preventing the occurrence of psychoses in early life. Certain definite standards of weights and measures in relation to the height of pupils would be of vast importance. Under the present system pupils of the same age were assumed to possess like mental capacity, and this was plainly a misleading criterion. Standards should also be fixed by which the normal child could be separated from the abnormal. J. H. McBRIDE (Los Angeles) said he did not believe that many persons broke down as the result of overwork. The evil effects of so-called overwork among school children were really due to the faulty methods employed in teaching; to too long hours, the multiplicity of the studies, etc., and to bad hygiene. ALBERT E. SIERNE (Indianapolis) emphasized the fact that the school period was the growing period, the evolutionary period, both physiologic and mental, and this no doubt accounted, to a certain degree at least, for the peculiar psychoses occurring at that time. D. R. BROWER (Chicago) in speaking of the importance of this general subject, said that during the past few years, according to his experience, the number of cases of insanity among adolescents had at least doubled in the city of Chicago. They were rapidly increasing in that strenuous city, as they probably were elsewhere in this country. T. A. WILKINS (East Bernard, Texas) said that many of the psychoses among school children could doubtless be traced to their bad hygienic surroundings. The effects of defective ventilation reacted upon circulatory activity, and eventually led to the impaired digestion of food, constipation, and other evils. A thorough reconstruction of our school system was necessary. School teachers should be as incapable as violating a hygienic law as they are supposed to be of violating a social or moral law, or as a surgeon is of violating an antiseptic law. The entire subject under discussion was much simpler than it appeared on the surface, when studied in connection with the physiologic laws of the growth of children, both physical and mental.

[To be continued.]

Section on Cutaneous Medicine and Surgery.

THIRD SESSION.

This took the form of a clinic by ISADORE DYER at the Charity Hospital, with presentation of the following: **Three cases of leprosy.** One case of multiple cystic epithelioma involving the face. This latter case is of 15 years' standing, and for 10 years was of the benign type. One case of herpetic dermatitis, exhibiting many features of impetigo contagiosa, was of two years' duration and somewhat unique. One case of psoriasis in a tuberculous patient. The condition was of long duration and very refractory to treatment. MCGOWAN suggested the use of iodipin. He claimed good results in these cases from its use. A unique case of nevus lateralis in a child of 5 years was exhibited. The disorder had existed for three years. Dr. DYER was of the opinion that no interference was best in these cases. He thought it better to wait, as a great many of the vessels would contract in time. Later those remaining might be treated by electrolysis or some other means. A very interesting case illustrating the use of thiosinamin in scar formation was presented, showing marked improvement. He used the soap and the plaster. A case of infantile eczema of reflex origin was presented. Dr. DYER was of the opinion that these cases always recover and with the simplest applications, if the cause was once discovered and removed. A case of pediculosis capitis followed by impetigo contagiosa involving face and vulva in a girl about 10 years of age was then shown. The lids were especially involved and resembled very much a sycoosis. ZEISLER thought the case one of staphylococcus origin. MENAGE reported that the case did not yield to the usual treatment of impetigo contagiosa. ROUSSEL suggested the use of the ultra violet ray. He had seen a very similar case recover under its use when the other agents had been faithfully used with no results. A case of psoriasis and one of chloasma in the negro were exhibited. These exhibited no special features.

FOURTH SESSION.

Pityriasis Rosea.—LUDWIG WEISS (New York) thought the disease still of uncertain classification. Its etiology is not known, but he thinks it is entirely due to internal causes—to absorption of toxins from the intestines. External irritants, chemical or mechanical, are also etiologic factors. Some may possess latent disposition to develop pityriasis rosea. He did not think it in any way parasitic, others to the contrary notwithstanding. Macules of pityriasis rosea are clinically as well as pathologically pure erythemas. He thought the scaling of a recent patch of the disease upon scraping with the nail was pathognomonic of the disease. Little treatment was necessary.

Discussion.—ANTHONY (Chicago) was of the opinion that the disease was distinctly on the increase. He thinks it parasitic in nature. BULKLEY (New York) thinks it impossible to confound this with ringworm. He has always thought it was parasitic in nature from the way it spreads. He thinks that treatment is very important, and insists on the use of such agents as salicylic acid, mercuric chloride, etc., in always obtaining cure by their agency. DE FORDYCE saw a case in which the lesions were confined to the legs. He thinks it is parasitic.

The Influence of the Menstrual Function on Certain Skin Diseases.—DUNCAN BULKLEY (New York) thought with Jacobi that women passed through periods in life of which the menstrual period was but one. He thought that such diseases as acne, eczema, psoriasis, herpes and urticaria, etc., were usually worse just before or during the period, sometimes even without any pathologic symptoms in the ovaries. Nervous affections attributable to such conditions arose. Of acne one-third of his cases were worse at menstrual period. Acne on the chin is usually due to menstrual disturbance. The hands are also often affected in this form. In all of these affections the treatment should be directed toward removing the cause, though, of course, some local applications also should be made.

A Case of Blastomycetic Dermatitis from Accidental Inoculation in a Physician.—NEWTON EVANS (Battle Creek, Mich.) stated that the case appeared about a week after he had held a postmortem on a case of the same disease. Inoculation took place in a small cut on his forefinger, the disease appearing as a small pustule, which became rapidly worse. A lymphangitis involving the lymphatics of the hand and arm followed, with enlargement of the axillary glands. Microscopic examination revealed budding organisms similar to those revealed in the fatal case. The case is particularly interesting as being the only case in which the source of infection was positively known. Potassium iodid is the best medicinal remedy known so far, but excision is still better.

Discussion.—BRAYTON (Indianapolis) referred to boring pain as frequent in this disease. He thinks it easy to diagnose. DYER would like a cure for a case in his practice. The lesions are located on the leg of a man of 70 years. He has given him potassium iodid in 120 grain doses with no results. Irrigation with 2% argyrol does best of the remedies used, but none does very well. HEIDINGSFELD (Cincinnati) does not believe that the yeast fungus is the cause of the disease. He believes the presence of the fungus is accidental. It may be a form of tuberculosis. DYER believes that clinically yaws and blastomycetic dermatitis are similar. DE FORDYCE has seen many cases that clinically appeared to be blastomycetic dermatitis, but was not

able to find the fungus. He thought that the fact that the fungus did cause the disease was well established.

[To be continued.]

Section on Ophthalmology.

SECOND SESSION (CONTINUED).

Discussion.—GRIFFIN (Ann Arbor) considered that subjective tests were very unreliable, and there was great necessity for some exact method that we might not have to depend upon the patient's judgment. The method should be followed in all its details in order to get the desired results. He was somewhat surprised at Dr. Jackson's view that accurate results could not be obtained at one meter, and believed himself that at that distance one could diagnose within a quarter or even an eighth diopter. GIFFORD (Omaha) thought we should speak of the visual area and not "zone." WILDER (Chicago) thought that while the method was very exact it was in most cases an unnecessary refinement. He felt satisfied when within a quarter diopter of the actual truth; it was close enough for practical purposes. He thought it increased the difficulties without proportionately increasing the good results obtained. HAWLEY (Chicago) considered the method very scientific but hardly necessary for practical work. Most ophthalmologists used a distance of one meter. He spoke of the necessity for the examiner to correct his own error of refraction, especially if presbyopic.

THIRD SESSION.

Some Points in the Pathology of Neoplasms of the Conjunctiva, Illustrated by the Present Exhibit of Morbid Growths.—EDW. A. SHUMWAY (Philadelphia) gave a review of our knowledge of tumors of the conjunctiva, and exhibited stereopticon illustrations showing the various growths which are found on this membrane. He considered the growths on the conjunctiva of great interest pathologically because of their great variety, although they were, relatively speaking, infrequent. He showed illustrations of carcinoma, sarcoma, and of the benign growths, specimens of dermoid tumor, lipoma, cystoma, lymphangioma, telangiectasis, fibroma, granuloma, papilloma, adenoma, hemangioma, etc.

CASEY A. WOOD (Chicago) gave a lantern exhibition and talk, showing the comparative appearance of the fundi of various of the lower animals, including the bat, duck, skunk, snake, chimpanzee, Nubian negro, rabbit, sheep, goat, etc. He called attention to the close resemblance of the fundus of the chimpanzee and the Nubian.

The Bacteria Concerned in the Production of Eye Inflammations.—ROBERT L. RANDOLPH (Baltimore) spoke of the occurrence, cultural properties, and morphology of the bacteria concerned in the production of the eye inflammations, illustrating his talk with lantern slides. He said, among other things, that we had not yet found any bacteria that were pathogenic only for the eye. That the possibility of there being such bacteria was suggested by such diseases as sympathetic ophthalmia and trachoma. He was sometimes tempted to think that the bacteria so often found in the normal conjunctival sac performed important functions in the life of the normal conjunctiva and should not be destroyed. He thought that with increasing knowledge of the subject we would be compelled to take a different position and perhaps to regard some of the bacteria, at least, as benefactors.

Bacteria in the Conjunctiva, Cornea, Iris, Ciliary Body and Choroid, and Changes Caused Thereby.—(Illustrated by projection with a lantern of sections and lantern slides.) BROWN PUSEY (Chicago) gave a lantern lecture in which many sections were shown and the interesting and instructive features pointed out, especially pertaining to the bacteriology of the conjunctiva, cornea, iris, ciliary body, and choroid, and the pathologic changes resulting from the invasion of bacteria. He also showed specimens of the Weeks' bacillus, diphtheria bacillus, gonococcus, streptococcus, typical bacilli in the tissues. The author said we were handicapped by the fact that many of the organisms that produce conjunctivitis in man do not lend themselves to experimentation in animals; such being the case with the Weeks' bacillus and that of Morax-Axenfeld.

The Essentials and Unessentials of Ophthalmic Asepsis.—HAROLD GIFFORD (Omaha) briefly discussed the bacteriology of the conjunctiva, edges of the lids and eyelashes and gave the results of experiments in disinfecting the same. The writer thought a certain share of the precautions taken by the general surgeon could be dispensed with for the ophthalmic operator. The preparation of the conjunctiva should be conspicuous for its simplicity; simple irrigation with sterilized normal salt solution or boric acid solution. He deprecated the use of the preparatory bandage as increasing the number of germs in the normal sac. The best application was one of the shields composed of an arch of some firm material. Instruments should be boiled 8 to 10 minutes in a closed vessel; the collyria should be sterilized at each operation. He thought that for the oculist no preparation of the hands beyond a good scrubbing with sterile soap and water and careful drying on a sterile towel was necessary.

Discussion.—CASEY WOOD (Chicago) advocated the method of tying off the canaliculi by simple suture in cases of infective

daercycystitis where the eyeball was to be opened, filling up the sac and canaliculi with argyrol prior to tying the suture. DUDLEY (Easton) called attention to the great value of making bacteriologic examinations of the conjunctival secretion as a routine practice in the office. FRICKS (Louisville) thought the ophthalmic surgeon should prepare for operation just as the general surgeon. He did not believe that boiling the instruments dulled the edges as much as was generally supposed; it was the operation that dulled them. BAKER (Cleveland) said it had been his custom for a long time to place his instruments in boiling water; he did not boil his knife long and while waiting wiped the knife with bits of sterile cotton held in the forceps in the boiling water. ELLETT (Memphis) referred to a method he had recently used to prevent infection in a cataract extraction where there was an incurable conjunctivitis. Previous to the extraction he incised the conjunctiva and dissected it up from the eyeball all around the cornea; he then picked up the edges of the conjunctiva and bringing them up over the cornea, sutured them there, after having extracted the lens. The sutures were removed on the fourth day, when the corneal wound was healed and the conjunctiva slipped back to its natural position. Patient got vision of 20/30 without needling operation. PARKER (Detroit) had operated on one case after the method employed by Ellett with good result and vision of 20/40. CLAIBORNE (New York) called attention to the fact that the health and vitality of the patient had a great deal to do with the matter of healing of the corneal wound, citing a case of nonclosure for a long time although there was no infection. GIFFORD (Omaha) said that a number of years ago DeWecker had recommended the covering in of the corneal wound in these cases with membrane and the use of a flap from above had been recommended. For several years he had been using the flap method.

Development of the Fusion Center in the Treatment of Strabismus.—NELSON M. BLACK (Milwaukee) designated the fusion center as the dominant center of the visual apparatus and said that from it must emanate all the impulses to the various subsidiary centers for all changes in the accommodation, position of the visual axes and position of the head and body that are required to bring corresponding retinal points into focus. Any disturbance or condition of nondevelopment of this center is the cause of those heterophorias or heterotropias not due to abnormalities in the anatomic relation of the orbit and extrinsic muscles or their paralyses. He considered the various causes of the nondevelopment of this fusion center; the method of developing its function with the amblyoscope during the existence of strabismus. He considered that if treatment did not result in parallelism of the visual axes and operation had to be resorted to the fusion center, being in a developed condition, could better proceed with its function as soon as the visual axes were made parallel.

A set of charts for stereoscope to be used for an amblyopic eye or for treatment of squint was shown and explained by A. B. HALE (Chicago.)

Discussion.—SAVAGE (Nashville) did not believe in the existence of a fusion center, but in volitional centers controlling the recti and oblique muscles, and basial, or reflex centers, all being under the control of the fusion faculty. WOOD (Chicago) said that binocular single vision is a thing that every child has to acquire; he doesn't possess it at birth. He strongly advocated the use of the Worth instrument for exercising the children. He used practically only three pictures, one of which was the bird and cage, which the child would always recognize. The child should be exercised three or four times a day with the stereoscope at home and at least three times a week in the office. JACKSON (Denver) called attention to the advantages of the fusion tubes suggested by Priestly Smith, and thought the child would be easily induced to keep up the use of that instrument, more so than with the pictures. STEVENSON (Akron) had found the Worth instrument of great service in the cases of squint. He thought the term "fusion faculty" preferable to that of "fusion center" and that it was the principal factor in binocular vision.

Cramp of the Ciliary Muscle Due to Eyestrain.—J. W. WRIGHT (Columbus, O.) referred to cramp in other parts, as in the fingers and hands of telegraphers, pianists, typewriters, etc., due to prolonged contraction of certain muscles and said that similar conditions occurred in the muscles of accommodation; that it occurred in emmetropia as well as in refractive errors. He spoke of the frequency of this cramp and considered that the etiology was particularly enforced near work: ametropia, especially hypermetropia and astigmatism. He referred to the differential diagnosis between this cramp and hypertrophy of the ciliary muscle. As to treatment he thought that cycloplegics were of only transient value and should be supplemented by internal treatment. The writer had found gelsemium of considerable value in these cases.

Discussion.—JACKSON (Denver) said as to treatment that the important consideration was the discovery and removal of the cause, which was generally uncorrected ametropia or some overuse of the eye. When that had been thoroughly attended to the condition generally cleared up very quickly. DONOVAN (Butte, Mont.) had found homatropin more or less unreliable in the treatment of these cases and preferred the use of hyoscin hydrobromate. RYAN (Galesburg) said that as Dr. Wright had made the statement that he was never able to get relaxation of the spasm by the use of the gelsemium alone he thought that would militate against its employment.

FOURTH SESSION.

Some Observations on the Eye Complications of Small-pox During the Recent Epidemic in Cleveland.—A. R. BAKER (Cleveland, O.) exhibited a chart showing the character of the complications and referred to a number of cases in which loss of the eye resulted. The total number of cases occurring was 1,248, with 224 deaths, 17.9%. He referred to the fact that one-third of all the cases of blindness in Europe before Jenner introduced vaccination were due to smallpox. The infection is carried into the eyes from the skin. The eye complications were greatly to be feared. As to treatment no specific treatment had been found. Frequent washing of the eyes and the use of such antiseptics as were not harmful were indicated.

[To be continued.]

AMERICAN PROCTOLOGIC SOCIETY.

Fifth Annual Meeting, Held in New Orleans, May 5-6, 1903.

[Specially reported for *American Medicine*.]

The Qualifications for Membership in the American Proctologic Society.—After the transaction of preliminary business President EARLE (Baltimore) among other things said: "Now is the time that our foundation is being laid and the life and success of the Association depend upon the wisdom and discretion with which it is laid. And just at this time and juncture it seems to me that our attention should be called to a matter of the gravest importance to the continued life and usefulness of our Association. The profession, and especially general surgery, is already prophesying that no great good can be accomplished in such a restricted field, and where work to be done is so near the surface and within reach of the simplest observer. It is certainly expected that if we are to be recognized as leaders in this line of work we must use as our foundation the cardinal principles that underlie both general surgery and medicine. When fairly upon its feet there is nothing more important to the perpetuity and usefulness of an association than the character and ability of the members it gathers in, and upon whom the position to be taken by the association depends. It is quality, not numbers, that we most need; neither the one whose usefulness in proctologic work is interfered with by his interest in other departments of medicine or surgery, nor the pseudoproctologist, should apply for membership in this Association. The principal object the members of this Association have had in keeping it a separate and distinct organization from the American Medical Association has been that we might control the character of its membership, not from any selfish or narrow motives, as is evidenced by the welcome we have always accorded to those who are not members to attend our general meetings, but for the broad and worthy object of enrolling upon our list of members only men of ability, learning, and with the avowed purpose of bending all their energies to advancing their knowledge of rectal medicine and surgery. Candidates for admission to the American Proctologic Association should be specialists in that line of work, meaning thereby that they devote their energies chiefly to it. If men in the various specialties of medicine would only be sufficiently honest and unselfish as to confine themselves strictly to their special work, there would be no necessity for these suggestions that I am now making. I do not mean to say that our work is so complicated that others than rectal surgeons cannot perform such operations. A general surgeon can perform iridectomy, but who would be so foolhardy as to go to a general surgeon for such an operation when a competent oculist is at hand? So it is in ours, and in all other specialties; the man who confines himself to one line of work must be far below mediocrity if he cannot perform the operations in his line better than the general surgeon or those in other special lines of work. In order to be recognized by this organization one should be something more than a mere itinerant vender of a pile ointment, or a pile doctor whose only armamentarium consists of a hypodermic syringe and a bottle of carbotic acid. We need well educated, well trained, and well equipped men to carry on this work. We have submitted to us operations that require the most perfect surgical technic and the greatest skill, the coolest head and deftest hand."

X-ray Therapy in Anorectal Diseases.—J. RAWSON PENNINGTON (Chicago) dwelt upon the importance and efficiency of this agent in the treatment of pruritus and when the cause is local. The society asked Dr. Pennington to continue his researches.

Tuberculous Ulceration of the Rectum and Anus.—L. A. ADLER (Philadelphia). This paper will appear in a future issue of *American Medicine*.

Primary Tuberculosis of the Rectum: Report of Cases.—LEON STRAUS (St. Louis) presented a very interesting paper.

Atony of the Rectum and Anal Sphincters: Its Etiology, Pathology, Diagnosis and Treatment.—WILLIAM BODENHAMER (New York) said: "Atony of the rectum and colon is most commonly met in delicate women of a lax muscular fiber, and in those whose sedentary occupations lead to a neglect of the necessary measures to ensure the regularity of the functions of the organ. It is also frequently met with in delicate children. In the treatment of rectal atony the first consideration is to enjoin a strict observance of regular habits respecting a daily evacuation of the rectum, and this may be

aided and often attained by simple means, such as the injection of half a pint of cold water into the rectum at the regular time of going to stool; cold being tonic, stimulant, and astringent, and acts somewhat similarly to nux vomica, by exciting the sensibility and contractility of the organ; but it should be discontinued as soon as the object of its use has been attained. In the more obstinate cases, however, the chief remedies should be nux vomica, alone or combined with some other ingredients, together with the employment of rectal injections composed of powerful astringents and tonic substances, with the intention of inducing contraction, corrugation, and condensation of the relaxed and weak muscular fibers of the rectum, by which they become shorter and firmer, and thus aid in diminishing the morbid organ to its normal dimensions and tone.

Obstipation: Its Causes, Effects, Diagnosis, and Treatment.—JOHN L. JELKS (Memphis, Tenn.) stated: "Obstipation is the term used by proctologists to denote mechanic obstruction of the bowel, and is preferred to the generic term, of which obstipation is one variety." He classed the causative factors as (1) extravisceral; (2) perivisceral; (3) visceral; (4) intravisceral. One of the chief facts which the author wished to forcibly express is that other factors may and do cause obstipation or obstructive constipation, and a careful discrimination should be made before an operation is performed upon a supposed obstructing rectal valve.

B. MERRILL RICKETTS (Cincinnati) called the attention of the society to **cautero-angiotribe** as an efficient agent in the treatment of hemorrhoids and first degree rectal prolapse.

This subject, together with that of **hemorrhoids**, by GEORGE J. COOKE (Indianapolis), elicited considerable discussion, and Dr. Ricketts was instructed to make further report on the use of the angiotribe in the treatment of hemorrhoids. The discussion disclosed the approval of various methods of treatment of hemorrhoids, but none of them ideal.

The Treatment of Anal and Rectal Diseases Without General Anesthesia.—WILLIAM L. DICKINSON (Saginaw, Mich.) said: "The treatment of anal and rectal diseases has been so long associated with that of general anesthesia, that when a patient presents himself and we have made an examination, we unconsciously begin to solve the mental problem of how he will take the anesthetic, and the number of days he will be confined to the house after the operation. The time-honored treatment of anal fissure by dilation, under chloroform, was both effective and speedy, but we can accomplish the same results in a little longer time by the use of cocaine or eucain. Superficial fistula, ischioanal abscess, external hemorrhoids, and many cases of internal hemorrhoids can be operated upon under filtration just as well as general anesthesia. We owe it to our patients, and also to ourselves, to keep patients from going to the irregular practitioner, for as regular, educated physicians, we ought to be able to cope with all diseases of the rectum in an intelligent manner, and thus give entire satisfaction to our patients. Our students should be taught that the greater number of our patients seek our advice and aid for ailments that respond readily to office treatment that can be given without general anesthesia."

A Unique Case: Molluscum Fibrosum of the Rectum in a Patient the Subject of the Typical Skin Lesion.—A. BENNETT COOKE (Nashville): "The feature of the case which justifies the adjective 'unique' is not the skin diseases nor the occurrence of the multiple filroid tumors in the rectum, but rather the association of the two conditions in the same individual, and the further fact that the mucous and cutaneous tumors are identical in structure. He described the patient as emaciated, sallow, nervous, and despondent; at least a dozen calls to the stool in 24 hours; sphincters relaxed and perianal integument excoriated from the irritating discharges; anal canal patulous, in spite of numerous successive abrasions. The protoscope revealed the rectum almost completely filled with polypoid tumors, many of them ulcerated and bathed in a mucopurulent blood-stained secretion of exceedingly offensive odor. The growths began in the lowest rectal chamber, varying in size from a bird shot to an almond; the largest were uniformly pedunculated; those intermediate in size had sessile attachments, and the smallest appeared as mere elevations under the mucous membrane, well bedded. It was found that the lesions extended well into the sigmoid colon, smaller in size, and were attended by less inflammation of the mucosa. Beginning below, the tumors were removed by torsion with the forceps, and by biting them off with a curet against the sharp end of the protoscope. The hemorrhoid was rather free, so that it was possible to remove only a small number at a sitting. The operation was repeated from time to time during a period of three weeks, when the bowel, as high as could be seen, was clear of all but the smallest tumors. Sixty of the growths were removed. No anesthetic was employed. Dr. Cooke appended a report from the pathologist, which demonstrated the identity of the skin and rectal lesions. The production was considered a valuable contribution to proctologic literature."

Officers Elected.—President, William M. Beach, of Pittsburgh; vice-president, Leon Straus, of St. Louis; secretary-treasurer, A. Bennett Cooke, of Nashville; executive council, Samuel T. Earle, of Baltimore (retiring president), chairman; George B. Evans, of Dayton, O., and John L. Jelks, of Memphis, Tenn. The society adjourned to meet in Atlantic City, N. J., in June, 1904, on the first and second days of the meeting of the American Medical Association.

ORIGINAL ARTICLES

THE SYMPTOMATOLOGY AND DIAGNOSIS OF DISEASES OF THE PANCREAS.*

BY

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of Boston.

The consideration of the symptomatology and diagnosis of diseases of the pancreas may appropriately be introduced by referring to the memorable communication on this subject by Friedreich¹ nearly 30 years ago. According to this authority "no single symptom which may occur in diseases of the pancreas is pathognomonic, and the concurrence of several does not always result in a positive diagnosis. Fatty stools, mellituria, epigastric pains with the characteristics of the celiac neuralgia and a palpable tumor lead among the symptoms most useful in diagnosis," and (p. 223) the presence of undigested, striated muscle fibers in the feces "is worthy of every consideration, and may, perhaps, prove of diagnostic value."

For awhile no material additions were made to our knowledge of the clinical pathology of the pancreas, but in 1887 the investigations of Müller,² and especially those of v. Mering and Minkowski³ in 1889, excited a renewal of interest in the matter. Since then physiologists and pathologists, physicians and surgeons in various parts of the world have made numerous contributions to the knowledge of the functions and lesions of the pancreas, and this gland has become recognized as of the greatest importance in maintaining and promoting a healthy state of the body. Within the past five years have appeared the notable treatises of Körte, Oser, and more recently that of Mayo Robson and Moynihan. These are the authors now to be consulted for classified knowledge of the questions under consideration. From them is to be learned in what respects the clinical characteristics of pancreatic diseases are now more sharply defined than in the days of Friedreich and his predecessors.

It is generally agreed that the symptoms especially suggestive of pancreatic disease are dependent largely upon the resulting disturbances of its functions and upon the situation of the organ. The former include the various modifications in the composition of the urine and feces; the latter comprise the localized resistance, tenderness and pain, and the evidence of obstruction of the gastrointestinal and biliary tracts. Unfortunately for diagnostic purposes the functions of the pancreas are not the exclusive property of this gland, but are possessed to a greater or less extent by other structures and other agencies.

For more than a century it has been known that diabetes may be associated with disease of the pancreas. More than 80 years ago visible fecal fat was found to hold a like relation. Forty years later the presence of undigested muscle fibers in the feces first attracted attention. These observations have since been repeated with sufficient frequency to lead the physician to suspect, often to assert the presence of, disease of the pancreas when one or more of these conditions have been determined. The comparison, however, of the results of anatomic investigation with clinical observation makes it evident that diseases of the pancreas much more frequently occur without the recognition of glycosuria and fat and muscle in the feces than when these abnormalities are apparent.

The physician, therefore, wishes to know if one or more of these conditions are present in some diseases of the pancreas, why are they not present in all? If found in a certain instance of a single variety, why are they not

present in all or in most of the cases of this particular affection. Morbid changes of the pancreas are found frequently after death without symptoms having been observed during life to indicate their presence. On the other hand, the diagnosis of probable pancreatic disease, perhaps of the gravest sort, has been made from the recognition of one or more of the symptoms or signs which, at times, have been found associated with alterations of the pancreas, and the patient has recovered or the gland when exposed has presented no abnormal appearance.

From the data collected by Oser it is evident that the symptoms attributable to disturbed pancreatic function are almost invariably connected with chronic lesions productive of extensive destruction of pancreatic tissue or with interference to the passage of its secretion into the intestine. The pancreatic lesions usually associated with diabetes are those in which the common element of interstitial inflammation exists with a corresponding destruction of the parenchyma of the gland. This may occur in the form of the genuine, granular atrophy of Hausemann, in calculous pancreatitis, or in the sequence of chronic suppuration, cysts, and tumors.

Visible fecal fat and azotorrhea on the contrary are oftener associated with chronic conditions interfering with the flow of pancreatic juice into the intestine as obstruction of the ducts from calculi, stricture or tumors, than with those causing destruction of the secreting cells of the gland. Rarest of all is the presence of alterations which are associated with diabetes, and fat and numerous muscle fibers in the feces. The case reported by Fles⁴ is almost unique in these respects. His diabetic patient ate much bacon and fat meat, and evacuated so much unabsorbed fat that it could be scooped by the ounce from the feces. The latter contained also large numbers of undigested, striated muscle fibers. The autopsy showed that the pancreas was represented only by fragments of the fibrous framework and scarcely recognizable traces of the gland substance. The duct could not be found. Nevertheless, it is evident from human pathology that extensive destruction of the pancreas may take place without observable modification of function. Franke⁵ extirpated a cancerous pancreas, and although the patient lived five months after the operation, there was glycosuria merely for a few days, and the stools appeared normal. The patient of Trafoyer⁶ was well 17 years after a pancreatic slough was discharged from the bowel.

The inference from such observations is that in extensive destruction of the pancreas without obvious disturbance of function enough of the gland is left intact, or an accessory pancreas or other organs or agencies are present to assume the pancreatic functions. Even when the pancreas presents an apparent integrity and fatal diabetes exist the researches of Ssoboleu⁷ and Opie⁸ make it evident that destruction of the islands of Langerhans may have taken place. Their investigations, and those of other observers directed to this possibility, add force to the suggestion that in the destruction of these islands may lie the important factor in explanation of diabetes in certain of the cases in which the gross appearances of the pancreas are normal. Hence with the recognition of various causes of glycosuria and diabetes, these affections, in the light of our present knowledge, are attributable to disease of the pancreas only in those instances in which there is extensive degeneration or destruction either limited to these islands or affecting also the parenchyma of the gland.

If the diabetes is associated with long-continued bronzing of the skin and enlargement of the liver, in the absence of jaundice and the characteristic distribution of the pigment in Addison's disease, the suggestion is direct that chronic, fibrous pancreatitis is present. Since the original publication by Hanot and Chauffard⁹ on this subject, the bronzed diabetes of French writers, Apschutz¹⁰ has tabulated 24 cases of this combination.

* Read at the Congress of American Physicians and Surgeons in Washington, D. C., May 12, 1903.

† The writer wishes to acknowledge his indebtedness to Dr. J. H. Pratt, of Boston, for assistance in reviewing the literature of the subject.

The view of us that the affection of the pancreas is the remote result of the deposition of the pigment in the hemochromatosis of v. Recklinghausen has repeatedly been favored by recent writers.¹¹

Steatorrhea is next in importance to glycosuria and diabetes as evidence of disturbance of pancreatic functional, though the views concerning its significance are somewhat divergent.

The presence of oil readily attracted attention, but it soon became apparent that the fat might assume a solid as well as a liquid form. It was considered that the presence of visible fat represented an increase of this constituent, the absorption of which was interfered with in consequence of the disease of the pancreas. Müller,¹² however, called attention to the frequent concurrence of disturbance of biliary secretion in the cases reported. He emphasized the importance of a lack of bile in the intestine as interfering with the absorption of fat, and considered it doubtful if a lack of pancreatic juice could cause steatorrhea. He endeavored to show that a deficiency of split fat the proportion of total fecal fat

fatty transformation in 3, in which there was also either obstruction or obliteration of the duct. Of the 17 cases of steatorrhea without jaundice, in 7 the lesions were tumors, chiefly cancer; in 6 calculi were present; 2 were fatty and 2 were single examples of cyst and atrophy.

It was considered interesting to note also the relation of diabetes or glycosuria to the steatorrhea. Diabetes was present in 11 cases and absent in 18. The lesions present in the former series were tumors, chiefly cancer in 4, calculi in 4, a cyst in 2, and fatty degeneration in 1 instance. Among the 18 cases of steatorrhea without diabetes were 11 of tumors, chiefly cancer; 2 of calculi, 2 of fatty transformation, and 1 each of atrophy and induration. Visible fecal fat, jaundice and diabetes were present in 3 cases only, 2 of tumor and 1 of cyst. This table, therefore, does not support the view that jaundice is an important factor in the origin of the fatty stools connected with disease of the pancreas. It suggests that in about three-fifths of the cases of steatorrhea attributable to pancreatic disease there is neither dia-

RELATION OF FATTY STOOLS IN PANCREATIC DISEASE TO DIABETES OR GLYCOSURIA AND TO JAUNDICE.

Lesion.	Stools.	Diabetes or glycosuria.	Jaundice.	Authority.
Fibroadenoma.	Fatty.	Present.	Present.	Blondl: Oser, op. cit.
Cancer.	Fatty.	Absent.	Present.	Bowditch: Boston M. and S. J., 1872, lxxvii, 65.
Cancer.	Like butter.	Absent.	Absent.	Bright: Med. Chir. Trans., 1833, xviii, 1.
Cancer.	Like butter.	Present.	Present.	Bright: Med. Chir. Trans., 1833, xviii, 1.
"Cyst."	Free fat.	Present.	Temporary.	Bull: N. Y. Med. Jour., 1887, 376.
Calculi.	Fatty.	Absent.	Absent.	Capparelli: Oser, op. cit.
Calculi.	Fatty.	Absent.	Absent.	Chopart: Oser, op. cit.
Calculus passed.	Fatty diarrhea.	Present.	Absent.	Cipriani: Therap. Monatsh., 1898, xii, 617.
Cancer.	Like butter.	Absent.	Absent.	Clark: Lancet, 1851, ii, 152.
Atrophy, cong. syphills.	Like asbestos	Absent.	Absent.	Demme: Oser, op. cit.
Calculus.	Oily at times like butter.	Present.	Absent.	Elliottson: Med. Chir. Trans., 1833, xviii, 77.
"Cyst," atrophy, fibrous tissue in head of pancreas.	Masses of fat crystals, once consistency of sweet oil.	Present.	Absent.	Goodman: Tr. Path. Soc., Phila., 1878, viii, 41.
Indurated pancreas, obliterated duct	Fatty.	Absent.	Present.	Kuntzmann: Friedreleb, op. cit.
Cancer.	Fatty.	Absent.	Absent.	Labadie-Lagrave: Oser, op. cit.
Calculus, atrophy. Growth of fibrous and fat tissue.	Fatty before onset of diabetes.	Present.	Absent.	Lancereaux: Bull. Acad. de Méd., 1868, xix, 588.
Cancer.	Fatty.	Absent.	Absent.	Luthlen: Oser, op. cit.
Cancer.	Gray with white portions. Fat with microscope.	Absent.	Absent.	Mager: Wiener Med. Pr., 1899, xi, 15.
Cancer.	Fatty.	Absent.	Present.	Maragliano: Oser, op. cit.
Cancer.	Very fatty, tenacious, slimy.	Present.	Absent.	Marston: Am. Jour. Med. Sci., 1854, xxviii, 212.
Scirrhus of head, obliteration of duct.	Fatty diarrhea.	Present.	Absent.	Martsen: Oser, op. cit.
Cancer.	Fatty.	Absent.	Present.	Molander and Blix: Oser, op. cit.
Enlarged pancreas, marked fatty degeneration.	Fatty.	Absent.	Absent.	Notta: Union Méd., 1881, xxxi, 289.
Calculus, fibrous pancreas. Duct did not communicate with common duct or duodenum.	Gray, greasy, at times solid fat on cooling.	Present.	Absent.	Phillips: Lancet, 1900, ii, 104.
Cancer.	Fatty.	Absent.	Present.	Pott: Oser, op. cit.
Fatty degeneration.	Oily.	Present.	Absent.	Silver: Tr. Path. Soc., London, 1873, xxiv, 121.
Cancer.	Fatty.	Absent.	Present.	Roques: Bull. Soc. Anat., 1857, ii, 245.
Cancer, closed duct.	Silver gray, 25% fat.	Absent.	Present.	Ziehl: Deutsche med. Wochenschr., 1893, ix, 538.
Rarefied pancreas, obstructed pancreatic duct.	Silvery white, consistency of salve.	Absent.	Present.	Müller: Loc. cit.
Pancreas appeared like fat. Calculus in duct.	Free oil or fat.	Absent.	Present.	Walker: Med. Chir. Trans., 1889, lxxii, 257.

being normal, was the chief feature when there was lack of the pancreatic juice, and that interference with the flow of bile was the main cause of pathologic steatorrhea. Müller reported but three cases of pancreatic disease in support of his views. Jaundice was present in one only. In another the actual condition of the pancreas and its duct was not to be determined, as the patient was seen after having been operated upon for "cyst" of the pancreas.

In order to obtain further clinical evidence on this point, a table has been prepared to show the relation between visible fecal fat, jaundice and pancreatic disease. Only those cases are included which give anatomic evidence at an autopsy, a laparotomy or by the passage of a pancreatic calculus that there was actual disease of the gland.

Twenty-nine cases of steatorrhea are the basis of this table. Jaundice was present in 12 and absent in 17. Among those with jaundice, tumors, chiefly cancer, were present in 8. The lesions existing in the remaining 4 cases were a cyst in 1, and induration rarefaction and

betes nor jaundice, that in two-fifths there is either diabetes or jaundice, in about equal proportion, and in but few instances is there a combination of diabetes and jaundice.

Müller's researches were of value in another direction by calling attention to the clinical importance of a chemical analysis of fecal fat in cases of suspected disease of the pancreas. A table has been prepared showing the analyses given by him and others of fat extracted from the feces in health, catarrhal jaundice and in diseases of the pancreas with and without jaundice. The last mentioned include only those actually demonstrated either by the knife or by the passage of a typical calculus.

It is evident from this table that the feces of the healthy individual contain about 20% of unabsorbed fat and that in catarrhal jaundice this ratio may be doubled. In affections of the pancreas the percentage of unabsorbed fat is generally not much increased, except when jaundice is an accompaniment, thus sustaining the position of Müller.

In health this extracted fat contains from 20% to 30% of neutral fat, and from 70% to 80% of split fats, namely, fat acids and soaps. In 10 cases of disease of the pancreas the neutral fat ranged from 17.50% to 91.6%. In but 2 of these was the percentage of neutral fat below normal, while in 9 of them it was largely or greatly increased. That of split fat, on the contrary, was decidedly diminished in 9 out of 11 patients. In the remaining 2 it was as high as in health. The table thus bears out the view of Müller, though not without exceptions, that in pancreatic disease there is less splitting of the fat and consequently an increase of the neutral fat, thus giving a satisfactory explanation of the oily stools of the older observers.

On the other hand, there is a sufficient lack of anatomic control to permit his conclusions to be accepted without question. Enough pancreatic juice may have been supplied to effect the results of chemical analysis in many of the cases of obstruction of the duct of Wirsung by a flow through the duct of Santorini. If both ducts were closed and the pancreas extensively diseased an accessory pancreas may have existed. Müller himself recognized the influence of intestinal bacteria and gastric contents¹³ in splitting fat, although he regarded their importance as slight. It is obvious also, as stated by him, that the feces may contain an excess of fat not only in cases of jaundice, but also when there is a super-

abundance of fat in the food and when there is disease of the absorbents within or without the intestinal wall. cases have been found which fulfil the demanded requirements. In 6 sugar was present in the urine; in 5 there was visible fecal fat, and jaundice was present in 2 instances. In Lichtheim's case the diabetic patient's diet was composed largely of meat, but diarrhea existed, a combination sufficiently explanatory of azotorrhea without the assumption of the presence of disease of the pancreas. The relative frequency of steatorrhea as compared with azotorrhea indicates that proteids are better digested than fats if the supply of pancreatic juice is notably diminished. Any significant increase of undigested muscle fibers in the stools would be expected only when there was extreme diminution of pancreatic juice in the bowel, gastric digestion was relatively normal, the diet contained no excess of meat, and there was no diarrhea.

Bulky stools are mentioned by Oser¹⁵ as suggestive of disease of the pancreas. These are notably excessive in quantity as compared with that of the food taken, and are composed of unabsorbed muscle fibers, fat and carbohydrates. He has met this condition in a number of cases in which the suspicion of pancreatic disease was confirmed.

The various possible disturbances of function in pancreatic disease have usually been sought by inspection and microscopic examination, and by the use of the simplest chemical and physical methods. It must be

RELATION BETWEEN DIABETES OR GLYCOSURIA, STEATORRHEA, AZOTORRHEA AND JAUNDICE IN DISEASES OF THE PANCREAS.

Condition.	Diabetes or glycosuria.	Steatorrhea.	Azotorrhea.	Jaundice.	Authority.
Cancer secondary to cancer of stomach.	Maltosuria.	Absent.	Present.	Absent.	v. Ackeren: Berliner klin. Wochens., 1889, xxvi, 493.
Only traces of parenchyma. Duct not recognized.	Present.	Present.	Present.	Absent.	Fies: v. Friedreich, v. Ziemssen's Handb.
Abscess.	Present three weeks before death.	Present. Resembling cod-liver oil.	Present.	Absent.	Hartley: Tr. Path Soc. Lor., 1862, xlii, 118.
Calculus.	Present.	Fat crystals.	Present. Copious meat diet, diarrhea.	Absent.	Lichtheim: Berliner klin. Wochens., 1894, xxi, 185.
Cancer. "Cyst."	Absent. Traces of sugar.	Present. Absent.	Present. Present.	Present. Absent.	Oser: Op. cit., 87. Riegner: Berliner klin. Wochens., 1890, xxvii, 959.
Indurated, atrophied pancreas. Almost complete obliteration of lower part of common bile duct.	Present, but almost wholly disappeared after occurrence of jaundice, despite carbohydrates in diet.	Present.	Present.	Present.	Teleky: Wiener klin. Wochens., 1902, xv, 741.
Cyst.	Absent.	Absent.	Present.	Absent.	Müller: Loc. cit.

abundance of fat in the food and when there is disease of the absorbents within or without the intestinal wall.

Steatorrhea, therefore, is to be regarded as evidence of disease of the pancreas only when other causes of its presence can be excluded, the most important of which is interference with the flow of bile into the intestine. Its recognition depends not merely on the presence of fat resembling oil, butter, lard or tallow, but in doubtful cases requires the skill and facilities of the chemist trained in physiologic methods.

The probability that steatorrhea is due to extensive disease of the pancreas and may exist for years without disturbance to the general health is suggested in the communication of Walker.¹⁴ His patient, a physician, free from jaundice, passed for 20 years large colorless stools of a peculiar putrid odor, occasionally accompanied by free oil, or fat, liquid or solid. During this period he was in perfect health and in the active pursuit of his profession. He died at the age of 90. There was no marked absence of fat. The pancreas was large, apparently composed of nearly purely fat. The duct was rendered almost absolutely impermeable within an inch of the duodenum by a very irregular calculus.

Despite the attention which has been given since the time of Friedreich to azotorrhea, as manifested by the presence of numerous undigested muscle fibers in the feces, but little clinical evidence has been offered that this sign is likely to prove of especial value in the diagnosis of diseases of the pancreas.

In the preparation of the accompanying table but 8

recognized, however, that any considerable disturbance in the digestion and assimilation of fat, muscle, and carbohydrates from affections of the pancreas has almost invariably been connected with extensive and protracted lesions. It is obvious, therefore, that feeding with an increased quantity of one or the other of these constituents of diet in suspected cases of pancreatic disease might be followed by appreciable changes in the secretions and excretions earlier than otherwise would have been the case. It is clear, also, that disturbances in the digestion of fats, starches and proteids, relieved by the addition of pancreas or its preparations to the diet, provided disease of the digestive glands could be eliminated, might furnish additional evidence in favor of the pancreatic source of the disturbance.

It has been repeatedly noted that the fecal fat has been observed when the patient was eating abundantly of fat. It is desirable, therefore, in possible cases of pancreatic disease to increase the quantity of fat in the diet nearly to the limit which is to be reached without producing steatorrhea in healthy persons or in patients not suffering from disease interfering with the absorption of fat. It is particularly desirable to determine the toleration of fat in those cases of diabetes in which the pancreas presents no abnormal conditions. These limits are not sufficiently known at present, especially as the thorough appreciation of this method of investigation demands the use of especial training and a properly equipped laboratory.

For the immediate future, however, observations are

more important which can be made simply with the eye, at the most aided by the microscope. Hartsen¹⁶ gave eight to ten teaspoonfuls of cod-liver oil to two diabetic patients, in each of whom extreme atrophy of the pancreas was found, but there was no unusual quantity of fat observed in the feces. Müller¹⁷ despite an almost exclusive milk diet in his case of cyst of the pancreas, found only a trifling increase in the fat extracted from the feces, and but little variation in the split and neutral fats from that observed when a mixed diet was taken. Herter gave to Northrup's patient with probable cancer of the pancreas an exclusive milk diet. Although the feces probably were fatty before this test was applied, no chemical analysis of their condition was reported. While the milk diet was being taken (see table) there was a large excess of fat in the feces, although there was no considerable modification in the percentage of neutral fats. The especial change seems to have been an increase in the percentage of fat acids and a diminution in that of the soaps. The reported cases are few in which pancreatic disease has been found after death, and properly controlled dietetic tests with fat have been made during life. Important additions to our knowledge are likely to be made by further observations in this direction.

In like manner should be tested the capacity of the

urine of the patients was collected every two hours after the glucose was taken. In 15 of 77 patients who died glycosuria occurred, and the postmortem examination showed alterations of the pancreas. In certain instances the changes were slight, and ascertained only by microscopic examination. The test was positive in three out of four cases of cancer of the pancreas. Unfortunately, the ease with which a similar result is obtained with this test in a great variety of conditions in which there is no reason to suspect disease of the pancreas makes it of little value in diagnosis under present conditions.¹⁹ The comparison of the quantities of glucose necessary and the percentages of sugar obtained may lead to further information.

The functions of the pancreas may be tested also by the use of agents which demand largely the action of the pancreatic juice to promote their absorption and elimination. Salol was first suggested for this purpose by Ewald and Sievers.²⁰ It had been stated by Nencki that salol was split by pancreatic juice into salicylic acid and phenol, and that the former could readily be detected in the urine. It was recommended that the salol be given in capsule or in pills coated with keratin. A delay in the cleavage would suggest retention in the stomach or deficiency of pancreatic juice.

COMPARATIVE RESULTS OF ANALYSES OF FECAL FAT:

Condition.	Percentages of					Authority.
	Extracted fat.	Fat acids.	Soaps.	Split fat.	Neutral fat.	
Health, milk diet	21.0	51.3	20.9	72.2	27.88	Muller: Zeitschr. f. klin. Med., 1887, xii, 45.
Health, milk diet .....	.....	39.8	40.5	80.3	20.5	
Health, bread and milk .....	.....	25.3	49.7	75	24.8	
Catarrhal jaundice	43.9	21.6	27.5	48.11	50.83	Katz: Wiener med. Wochen., 1899, xlix, 153.
Catarrhal jaundice	9.56	.....	.....	88.59	11.41	
Catarrhal jaundice	21.31	34.54	43.26	77.8	22.10	Muller: Loc. cit.
Rarefied pancreas, obstructed pancreatic duct, jaundice.....	43.9	21.6	27.5	49.1	50.83	
Necrosis of pancreas.....	33.3	.....	.....	29.5	76.1	v. Noorden: Berl. klin. Wochen., 1890, xxvii, 1022.
Calculus in pancreas, extensive atrophy, diabetes.....	29.04	17.08	5.33	22.41	77.57	Muller: Loc. cit.
Calculi, pancreatic, found in stools.....	.....	19.2	38.2	57.4	42.6	Kinnicut and Herter: Am. J. M. Sci., 1902, cxxiv, 948.
"Cyst" of pancreas.....	28.7	39.9	16.8	47.7	52.	Muller: Loc. cit.
Cancer of pancreas.....	33.3	.....	.....	8.4	91.6	v. Noorden: Loc. cit.
Fibrous and fatty pancreas, glycosuria, jaundice	38.66	.....	.....	51.42	48.58	Teleky: Wiener klin. Wochen., 1902, xv, 741.
Cancer of pancreas, closure of common and pancreatic ducts.....	.....	73.3	7.1	80.4	19.6	Deucher: Cor. bl. f. Schw. Aerzte, 1898, xxviii, 321.
Cancer of pancreas.....	.....	52.1	9.5	61.6	38.4	
Large, hard pancreas, small hemorrhages, necroses, jaundice.....	34.22	.....	.....	13.93	86.07	Northrup and Herter: Am. J. M. Sci., 1899, xvii, 131.
Thick, flat mass in pancreas, eventual jaundice	46.76	64.2	17.58	82.50	17.50	

patient for digesting muscle in the intestine as compared with that of the normal individual or with one suffering from affections in which there is no reason for supposing that the pancreas or intestine is diseased. For this purpose it is important first to determine the condition of the gastric functions and then to introduce into the intestine the muscle fiber, as free as possible from the influence of gastric digestion. It may be that the glutoid capsules of Sahli, to be mentioned later, will suffice for the latter purpose, or that other more satisfactory means may be devised.

Müller found well preserved muscle fibers in his case of cyst of the pancreas when the patient was not eating more meat than a healthy adult could easily digest. A similar appearance was observed during several days while the patient was taking but little meat. The evidence furnished by this patient has only a relative value, since the nature of the lesion was determined by a surgical operation, and the condition of the pancreatic duct was known.

The possibility of testing the efficiency of the pancreas by attempting to produce an alimentary glycosuria also demands consideration. The researches of Wille¹⁸ in this direction are especially significant. This observer gave at breakfast to each of 800 patients $\frac{1}{100}$ gr. of glucose in a half liter of tea or coffee. This quantity was selected with the view that the limit of physiologic glycosuria lay between doses of 150 and 250 gr. The

Sahli²¹ has suggested the use of "glutoid" capsules containing iodoform to determine the presence of pancreatic secretion in the intestine. It is claimed that these capsules are sufficiently hardened in formaldehyd to withstand powerful gastric digestion for at least 12 hours, although rapidly digested in pancreatic juice. If there is normal motility of the stomach, the iodine reaction will appear in the saliva in from four to six hours after the capsule containing the iodoform is swallowed, provided there is a satisfactory pancreatic digestion and there is no interference with intestinal absorption. Sahli²² reports a number of cases in which the reaction was delayed for 24 hours or more, and obstruction of the pancreatic duct from cancer of the gland was found.

The late reaction is evidence of defective pancreatic digestion only when there are normal gastric motility and intestinal absorption. If the latter is defective and there is diarrhea the undigested capsule may be found in the feces. Fromme²³ applied this test in a case proving to be one of inoperable sarcoma of the omentum. Visible fecal fat was present, but neither jaundice nor glycosuria. The reaction did not appear till the end of 27 hours. In a patient who was found to have a "cyst" of the pancreas the glutoid capsule test gave only a slightly delayed reaction, from seven and a half to nine hours. Although these cases were reported to illustrate the inaccuracy of the test, the evidence given

is insufficient to exclude closure of the pancreatic duct in the first, and it is possible that the "cyst" of the pancreas was an omental bursitis, or, if of the pancreas, that there was no considerable interference with the passage of the pancreatic juice into the intestine.

The suggestion is obvious that if symptoms attributable to disturbed functions of the pancreas be present and other conditions, especially jaundice, be absent, the use of pancreatic preparations or of minced pancreas might favorably affect these disturbances and thus indirectly confirm the diagnosis of pancreatic disease. Fles²⁴ gave daily a calf's pancreas to his patient with atrophied pancreas and unrecognizable duct. The fat and muscle fibers disappeared from the feces, to return again when the pancreas was omitted from the diet. Repeated instances of the disappearance of visible fat from the feces and of improvement in diabetics have followed the use of pancreas and its preparations, but they are not included in this consideration as lacking the control of anatomic investigation.

The examination of the urine for pentose has attracted attention since the statement by Hammarsten²⁵ that the pancreas contained a nucleoprotein, the cleavage of which produced pentose. Salkowski, who had discovered the condition pentosuria, recognized the identity of the pentosazon in the pancreas and that in the urine, and suggested that pentosuria might be regarded as an affection of the pancreas. Blumenthal²⁶ showed that the condition might be persistent during a period of five months. Pentose was usually sought with phenylhydrazin, acetic acid and heat. Mayo Robson²⁷ states that Cammidge obtained yellow crystals in sheaves and rosetts from the urine of a patient with chronic pancreatitis by boiling it for a short time with an oxidizing agent and adding phenylhydrazin. Urine from a case of catarrhal jaundice gave a negative result when similarly treated. It was suggested by him that this test might prove useful in diagnosis. If these crystals were an osazon it is possible to find them even in normal urine, and further evidence is needed before any diagnostic importance in connection with pancreatic disease is to be attached to their presence. Blumenthal,²⁸ moreover, was able to isolate nucleoproteids from various organs and find pentose in them, which obviously excludes the pancreas as the necessary place of their origin.

It is known that the putrefaction of the proteid contents of the intestine is caused by bacteria and that their action is enhanced by the presence of pancreatic juice. In consequence, the aromatic compounds—indol, skatol and phenol—are formed, and the quantities of indican and of ethereal sulfates in the urine give evidence of the extent of the proteid putrefaction and indirectly of the condition of the pancreas. Gerhardt²⁹ observed an absence of indican in the urine in a case of obstruction of the small intestine, in which condition, according to Jaffé, it should have been increased. After the patient's death acute hemorrhagic pancreatitis and an obstructed pancreatic duct were found. Gerhardt suggested that the absence of indican when the small intestine was obstructed might be regarded as evidence of disease of the pancreas. Two confirmatory and one contradictory observations have been made. Oser, however, maintains that variations in the excretions of indican may have no direct relation to disease of the pancreas, hence be of no diagnostic value.

The quantity of ethereal sulfates eliminated seem to have a more constant relation to the extent of intestinal putrefaction and to the secretion of pancreatic juice. The clinical observations on these points, especially those sufficiently controlled, are few. Herter found increased indican and an increased ratio of ethereal to preformed sulfates in Northrup's case, in which disease of the pancreas, though not the condition of the duct, was ascertained. Edsall³⁰ concludes in his communication on this subject "if, with suspicion of pancreatic disease, factors which usually cause an increase of the ethereal sulfates

be present and yet the values be found low, the test would at present appear to be of distinct practical importance in diagnosis. Constipation, gastric hypoacidity or an acidity, icterus, grave anemia, and cachexia are very likely to cause an increase in the relative or absolute values of the ethereal sulfates."

Finally, Opie³¹ has suggested the possibility of discovering in the urine the fat-splitting ferment set free in acute pancreatitis. He endeavored to determine its presence in one case by following the method proposed by Cassell and Loevenhardt which is based upon the decomposition of ethyl butyrate by the ferment and the production of butyric acid. The urine neutralized with potassium hydroxid was divided into two portions, one of which was boiled for the purpose of destroying the ferment. Ethyl butyrate was added to each specimen. That unboiled after 24 hours gave an acid reaction, while the boiled specimen showed little if any change.

The symptoms which have proved most useful in diagnosis are those which call attention directly to the region of the pancreas. They are the epigastric pain, tenderness, tension and tumor, with or without obstructive jaundice, and evidence of mechanical interference with the motility of the stomach and duodenum.

Pain, when present, usually is manifested early in the course of the disease and may be the initial symptom. It often suggests gastric cramp or intestinal or biliary colic. It is occasional, paroxysmal or persistent, dull or sharp, squeezing, tearing or piercing, mild or severe, even agonizing and not infrequently is associated with signs of collapse. It may be clearly defined near the median line, midway between the ensiform cartilage and the navel or may shoot laterally especially toward the left side. It occasionally is continued upward into the thorax or downward into the lower abdomen.

Tenderness is a frequent accompaniment, especially of persistent pain. It often is described as sensitiveness and although usually limited to the epigastrium, may be found in the region of the spleen or in the left groin. Ultimately tender spots may appear in remoter parts of the abdomen, especially when disseminated foci of fat necrosis accompany the pancreatic affection. Epigastric tension often is observed, and may be apparent at the outset or develop later in the course of the disease. When an early symptom it is followed soon by a circumscribed, tympanitic, epigastric swelling, evidently due to gaseous distention of the stomach.

The resistance found late in the course of pancreatic disease is due to the formation of a tumor. When the latter is the result of disease of the pancreas its characteristics depend largely upon the nature of the affection. Small, circumscribed, dense tumors result from chronic inflammation or neoplasms, usually of the head of the gland, while large, tense tumors of pancreatic origin in the left half of the epigastrium or symmetrically involving more or less of the upper abdomen are indicative generally of cysts of the pancreas or of collections of fluid in the omental bursa, more common than the former and generally confounded with them.

Jaundice, commonly slight and of short duration, is occasionally encountered in acute affections of the pancreas. Then it is oftener seen in the course of a few days after the onset of the attack than as an earlier symptom. Prolonged jaundice is a frequent accompaniment of chronic affections of the head of the pancreas, especially of fibrous inflammation and neoplasms. The association of the jaundice with distention of the gallbladder is sufficiently frequent as noted by Courvoisier and others to make this combination suggestive rather of disease of the pancreas than of affections of the biliary tract.

Motor disturbances of the stomach and intestine are among the usual symptoms associated with pancreatic disease. Vomiting, sometimes frequent or incessant and often distressing, is customary among the early symptoms of acute pancreatitis, and constipation, at times

obstinate, is the rule. So constant are these motor disturbances that the frequent diagnosis in cases of acute pancreatitis is acute intestinal obstruction.

The prolonged motor insufficiency of the stomach mechanically induced by chronic affections of the pancreas, especially from enlargement of the head of the gland, not infrequently give rise to dilation of the stomach. In consequence frequent or persistent vomiting may take place late in the course of pancreatic disease.

Although the diagnosis of diseases of the pancreas in the light of our present knowledge practically depends more on the symptoms calling attention to the locality of the organ than upon the evidence of disturbances of its function it is reached eventually by the exclusion of other sources than the pancreas of the local symptoms.

The differential diagnosis lies first between acute and chronic affections and second between the several varieties of chronic pancreatic disease. The former include pancreatic hemorrhage and the hemorrhagic gangrenous and suppurative varieties of acute pancreatitis, all of which are characterized by similar symptoms and some of which presumably represent stages of the same affection. The latter include chronic pancreatitis with or without calculi, cysts and tumors.

Of acute pancreatitis it may be said now as in 1889²²: "The symptoms are essentially those of a peritonitis beginning in the epigastrium and occurring suddenly, during ordinary health, without obvious cause. The diagnosis, therefore, is based on pain, tenderness and tympany limited to the region of the pancreas, and on the gradual development of a deep-seated peritonitis in the same place."

DIFFERENTIAL DIAGNOSIS.

The differential diagnosis lies practically between an irritant poison, perforation of the digestive or biliary tracts, and acute intestinal obstruction. An irritant poison is excluded by the history of the case and by the examination of the vomit. Perforating ulcer of the stomach or duodenum is to be excluded by the absence of pain after eating, hemorrhages from the digestive canal and cachexia. Acute perforation of the transverse colon is rare, and the resulting peritonitis progresses more rapidly and is likely to be general. Perforation from gallstones is usually preceded by attacks of biliary colic and jaundice, while the seat of the pain is rather in the region of the gallbladder than in that of the pancreas. Acute intestinal obstruction is most likely to give rise to doubt. It is to be eliminated by determining the patency and capacity of the large intestine, by the rarity in the epigastrium of an obstructed small intestine, by the immediate presence of localized tenderness and by the usual absence of conspicuous, general tympany or limited distention of intestinal coils.

In the cases of acute pancreatitis thus far reported no new evidence, unless that of Opie be confirmed, has been furnished which gives to the diagnosis more than a variable degree of probability. Certainty has been reached only by a laparotomy or a postmortem examination. The former has made clear the condition of the pancreas by the usual disclosure of multiple areas of disseminated fat necrosis, a condition occurring on an extensive scale only in the sequence of acute pancreatitis, or by the demonstration of the enlarged, hemorrhagic or necrotic pancreas as the focus of the surrounding peritonitic manifestations.

Fortunately the exploratory laparotomy in an increasing number of cases has proved the most satisfactory method of treatment, and, like most abdominal operations for the relief of acute symptoms, is the more helpful the earlier in the course of the disease it is performed.

The diagnosis of chronic pancreatic affections is based usually on the occurrence of localized pain and upon the presence of a tumor. The pain may exist without the tumor, but the latter is rarely present without the former at some time during its formation. The pain of chronic pancreatic affections is often a deep-seated discomfort; when severe it is likely to be paroxysmal, and then is suggestive of biliary colic, but is referred rather to the region of the pancreas than to that of the biliary tract. The tumor is of slow or rapid growth, large or small, perhaps distinctly palpable only in narcosis, fixed or slightly movable, with or without symptoms of pressure upon the surrounding parts. Its position behind the stomach and above or behind the colon is made apparent by inflation and percussion of these portions of the alimentary canal. Evidences of disturbance of pancreatic function are to be sought along the lines previously mentioned, but experience has shown that definite and convenient additions to our knowledge must be made before functional disturbances of the pancreas can be ascertained sufficiently early and with sufficient certainty to render assured the pancreatic source of the disease. The discovery of sugar in the urine should lead to the examination of the feces for fat. The presence of the latter should suggest the search for undigested muscle fibers and for glycosuria, and alimentary and therapeutic tests should be applied to all suspected cases.

The differential diagnosis lies between chronic pancreatitis, with or without pancreatic calculi, cysts, and tumors.

The association of jaundice with tumor has led to the diagnosis of chronic pancreatitis and to its effective treatment by Mayo Robson and others. The relatively rapid formation of the tumor in the sequence of symptoms suggestive of gallstones may serve in certain instances to differentiate this condition from malignant neoplasms.

The discovery of characteristic calculi in the feces has made clear in a few instances the source of discomforting or severe symptoms without tumor in the region of the pancreas, and exploratory laparotomies have confirmed or suggested the diagnosis of neoplasms of this organ.

The various possibilities of a more accurate study of the symptomatology and diagnosis of diseases of the pancreas suggest an early advance in our knowledge of the subject. With the increase of clinical laboratories in our general hospitals and with the more frequent addition of biologic chemists to the force of pathologists the errors of the past are likely to be avoided and new lines of research are sure to be planned.

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THE MEDICOLEGAL TEST OF BLOOD-STAINS.

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One of the chief problems in forensic medicine presented to the medical expert is the identification of human blood-stains. Many methods for proving the presence of blood have been presented. The only tests which are now recognized as reliable are these: 1. The finding of the red blood-corpuscles. 2. The proof of the presence of hemoglobin. 3. The demonstration of hemin crystals. 4. The formation of the characteristic hemato-porphyrin spectrum. In the first two the blood must be fairly fresh; in the last two it may be fresh or old.

The identification of blood as such has been exhaustively treated and final conclusions reached by which it is now possible to say absolutely whether or no a given stain was made by blood; the further question, that relating to the source of the blood, has been before the profession for years, but only since 1896 has material advance been made toward its solution, while the greatest success has been attained during the past 18 months.

All efforts at differentiating blood-stains have been directed along one of two lines, *first*, tests based upon microscopic findings, and *second*, tests based upon processes which may be demonstrated by test-tube reactions.

It has been the object of the work herewith presented to answer as adequately as possible the following questions:

1. A given stain having been proved to be blood by one of the absolute methods above cited is it possible to prove whether or no the stain was made by human blood?
2. If so, is the proposed test always specific?
3. Is its accuracy modified by (a) the age of the stain or (b) the admixture of other blood or foreign matter?
4. Is the proposed test sufficiently accurate and invariable for medicolegal purposes?

Before entering into a discussion of my experiments a consideration of the work already done in the same field is appropriate.

THE MICROSCOPIC TESTS.

Birchmore¹ claims that he can distinguish human from animal blood microscopically, and moreover that the blood of individuals can be distinguished by the same means. His method is to measure the red blood-corpuscles in a given specimen of blood and compare these dimensions with those of corpuscles of known origin. The diameters are taken by means of a micrometer eyepiece and are tabulated and finally plotted as curves. The measurements in each specimen vary widely, of course, but the author says the curves so plotted are so very similar that having examined a given specimen of blood and constructed its curve he can say positively to which "curve-group" the blood belongs. This method has not been employed by any other writer in the literature. It is limited to the examination of fresh blood.

Moser² believes he can differentiate the blood of man from that of lower animals by a microscopic examination of the hemoglobin crystals. For a successful test the blood must be fluid and fresh, or at least not very old, that the characteristic crystals may be obtained. However, on one occasion³ he did obtain the characteristic reddish-brown crystals when applying the test to some stains he found on the ground. The age of the stains in this instance was unknown. This method, at best, is not generally applicable for medicolegal purposes, because questionable stains are so apt to be very old.

A very promising method is that suggested by Ziemke.⁴ He tests the solubility of the hemoglobin of

different bloods in the various alkalies. He reports that human hemoglobin was invariably dissolved sooner than that of lower animals. The following tabulation shows the average of his results:

Animal.	Dissolved in minutes.	Ratio.
Man	5.6	1.0
Cat	28.8	5.0
Dog	36.5	6.5
Rabbit	38.1	6.8
Mouse	61.1	10.9
Horse		
Sheep		
Ox		
Pig		
Calf	More than 120.0	?

The chief objections to the microscopic tests are these: (1) The large amount of blood required; (2) the great variability of the red blood-corpuscles, even in fresh blood; (3) the absence both of red blood-corpuscles and of hemoglobin crystals in old stains.

THE SERUM TESTS.

The serum test for blood originated with Bordet,⁵ who in 1898 published his first observations. In this paper he announced that as early as 1896 both he and Gruber had demonstrated the agglutinating and hemolytic power of the sera of different animals, and that "the converting and agglutinating property does not belong entirely to the animal injected, but is increased many fold by the injection of the serum of another animal." In his later work, Bordet began by testing the agglutinating power of various animal sera against cholera vibrios, colon bacilli, typhoid bacilli, tetanus bacilli, and the action of these same sera upon the red blood-corpuscles of other animals. He found, for example, that fresh chicken serum agglutinated and then destroyed the red globules of rabbit blood. If the serum was heated to 55° C. during the test the agglutination occurred, but there was no destruction of the globules. He says that it is possible, by frequent injections of a given serum into a susceptible animal, greatly to increase the agglutinating and destroying power of the animal's serum for the particular blood injected. To demonstrate this, he injected guineapigs intraperitoneally five to six times with 10 cc. each of defibrinated rabbit blood. A rapid and positive reaction was obtained with a dilution of 1 to 18 in two or three minutes, the tested blood becoming red, clear and limpid. His test serum lost its destroying power but not its agglutinating property when heated one-half hour to 55° C. The destroying power was reestablished if to the serum which had been heated to 55° C. a certain amount of serum of a normal uninjected guineapig was added.

He then modifies his statement regarding the inaction of the heated serum, declaring that it is not quite exact to say that "defibrinated rabbit blood remains truly intact. A destruction of red blood-corpuscles does occur, slow and imperfect, it is true, but sufficient to impart a red tinge more or less visible. This is due to the fact that the defibrinated blood contains not only corpuscles, but also serum charged with a certain amount of alexin. And so we come to see that the alexin of a new rabbit acts on the corpuscles of the same animal when these are impressed with the agglutinating substance of active serum. But the proportion of alexin is not sufficient to destroy the enormous quantity of globules present. And this is why, in the mixture, the destruction of the corpuscles is slow." He obtained no reaction when the serum of a normal noninjected animal was used. The serum immunized with rabbit blood did not react to the serum of the pigeon, but there was a reaction to the serums of rats and mice, which latter were also affected by the serum of a normal guineapig, though to much less degree. The same reaction occurred in a living immunized animal, when rabbit serum was

injected intraperitoneally, and to a less extent when it was injected subcutaneously. The serum of a normal guineapig so injected was not altered. He found that the serum thus elaborated by the guineapig after injection with rabbit serum was toxic for the rabbit, killing it when injected in doses of 2 cc.

He concludes that these reactions are due to two distinct substances, the one existing only in the serum of the immunized animal, the other an alexin existing in the normal animal. The latter has very little agglutinating power, but becomes very powerful when mixed with the first substance.

It remained for Tchistovitch⁶ to perfect the work of Bordet. He used the same methods employed by Bordet, and treats in his paper largely of the theory of the precipitation obtained by the injections. In most of his experiments he injected rabbits and guineapigs with the serum of eels, the rabbits being much easier to immunize, and obtained a reaction when some of the homologous serum was mixed with the immune serum. The reaction consists of two parts, first, an agglutination and dissolution of the red blood-corpuscles, and second, a coagulation and precipitation of a substance insoluble in water, neutral salts and alkaline carbonates, but soluble in alkalies and acids. These two processes are distinct because the agglutination can be produced in sera which do not cause coagulation. The coagulation is the specific reaction desired and will occur only when the homologous serum is used. Heating the test material prevents the precipitation.

The next work of any importance was done by Schütze⁷ in 1900. He followed the plan adopted by Bordet and demonstrated that when an animal is injected with the serum of a different species, a toxin is generated which has the power of destroying or dissolving the red blood-corpuscles of the species whose blood was injected.

In the first experiments of Uhlenhuth⁸ he administered per oram and injected intraperitoneally into rabbits the albumen of hens' eggs. When the blood of the treated animal was drawn and mixed with some of the same egg-albumen solution, a reaction occurred. He obtained a similar though a fainter reaction when the test serum was mixed with the albumen of pigeon eggs. But when pigeon-egg albumen was injected in the first place the relation of the two reactions was reversed. All other albumens gave negative results. The reaction was unchanged when the tested serum was heated to 60° C. He then injected test animals with chicken blood, instead of with the albumen. In this case also the test was positive with the chicken's blood and negative with all others. He claims that he is able with one drop of his test-serum to obtain a positive reaction in a solution of egg-albumen diluted 100,000 times.

Friedenthal⁹ makes an exhaustive review of the literature regarding the blood-relation of allied species, but makes no medicolegal application of the test.

Somewhat later Uhlenhuth¹⁰ experimented with injections of rabbits with cow's blood, obtaining an absolutely specific reaction. He does not, however, mention any reaction with the blood of monkeys. Dried blood, he found, was as active as if fresh.

Nuttall and Dinkelspiel¹¹ give the introductory abstract in the paper here cited of the extended report published by the former in the *Journal of Hygiene*, which report is abstracted below.¹² This is the first and most extensive work on the subject recorded in English.

The experiments were made with rabbits, injecting successively the blood of the dog, horse, sheep, ox, and of man. Using the sera of these injected animals as bases, the sera of 35 different animals were tested, and specific reactions obtained with the blood of the sheep, ox, and horse. The test with human blood also responded strongly with the human blood and gave a faint cloudiness with horse, ox, and sheep blood. These

results were unaltered by the use of fresh or old, putrid or septic blood, and were not changed by the mixing of several bloods, when testing for a given one. No reaction was obtained unless the mixture contained the blood sought. Nuttall concludes that "in this test lies the most delicate means of detecting and differentiating bloods, and we may hope," he says, "that it will be put to forensic use." Later in the same year¹³ Nuttall made more extensive experiments, especially with monkey's blood, but adds nothing more conclusive.

Wasserman and Schütze¹⁴ published their results one week later than did Uhlenhuth, although they claim to have been working on the problem some time before. At any rate, with precisely the same methods as those employed by Uhlenhuth, they reached the same conclusions. However, they made a strong point of the fact that they obtained a slow, indistinct, but positive, reaction with the blood of apes. If the blood of monkeys can be excluded, they believe the test may then become reliable for medicolegal purposes.

Stern¹⁵ reviewed the experiments of Uhlenhuth and made similar tests, injecting rabbits subcutaneously with human blood. He was able to obtain a positive reaction, even when the test-serum was much diluted. Albuminous human urine gave a similar, though a weaker reaction. His results were negative with the blood of the ox, horse, wether, and hog. He believes the test is not absolutely specific, since he was able to obtain a reaction with certain of the apes. This fact, he says, is an obstacle to the forensic use of the test.

Mertens¹⁶ began as did Uhlenhuth, by injecting rabbits intraperitoneally with egg albumen, and later introduced human serum. His reactions were positive with human blood and with albuminous urine, although weaker in the latter and quite negative with normal urine. During his experiments one of the test-rabbits gave birth to a litter of three young ones on the seventh day of the injections. One of these was bled, and its serum was also found to react positively with human blood and albuminous urine.

The results obtained by Dieudonne¹⁷ were identical with those of Mertens. He used human blood, albuminous urine and pleural exudate, obtaining positive results in each case. The human blood injections produced the strongest antiserum, and the reactions were always more frank when the substance injected was employed in the test; *i. e.*, if blood was originally injected, the reaction was better if blood was used in making the test. He believes with Mertens that the blood of the young of the injected animal also possesses the same antibody.

Deutsch,¹⁸ following the plan of Bordet, employed the hemolytic test, obtaining a certain amount of hemolytic power after the injection of 30 cc. of human blood. The tests of human blood were darker than the control tests, which fact he attributes to his mistake of allowing some of the plasma to be injected with the serum. He decides that the serum which will dissolve the red cells most readily indicates the species of animal to which the injected cells belong.

Ziemke,¹⁹ after the manner of Wasserman and of Uhlenhuth, tested 18 different bloods. He says the reaction is positive for human blood and negative in the case of all the lower animals, except the monkey. With this blood a positive reaction occurred, but it was slower and less intense. He was able to identify fresh human blood in soapy water, in urine, or when soaked into linen and dried. The reaction from the serum of animals injected with serous exudates was positive, but weaker than when blood was used.

In the summer of 1901, Uhlenhuth²⁰ made further experiments, using old, dried blood-stains of known and of unknown origin, and says he made positive diagnoses in each case. He also made tests for the identification of blood in solutions of carbolic acid, corrosive sublimate, borax and soapy water, and in earth. He succeeded in

diagnosing each variety of blood. He states, however, that the blood of allied species gave reactions when mixed together, although these reactions were weaker than in the case of the species whose blood was injected. He believes this method might be employed as a means of demonstrating the relation of species; for example, the test shows the sheep to be more nearly related to the goat than to the ox, because the reaction obtained with the blood of the former, when "antigoat" serum is used, is stronger than that with the latter. He says the age of the stain is immaterial, but that the reaction, to be positive, must be immediate. This last clause is questioned, as will be brought out in the record of these experiments.

Corin²¹ reviews the literature and repeats the earlier experiments of Uhlenhuth with practically the same results; but he believes the test is not sufficiently invariable for absolute reliance.

In the same volume containing the report of Corin, Frenkel,²² after reviewing the literature on the subject, concludes that in the method of Uhlenhuth or of Wasserman and Schütze we possess a new serum reaction which is exact, specific, very sensitive, and one which permits of an absolute diagnosis of human blood, with the one exception of monkey blood.

In November, 1901, Nuttall²³ read a paper before the Royal Society, in which he described in detail his methods, and reported his tests made with some 230 bloods, obtaining with human serum a negative result in all cases except in those of human and monkey blood. He cites the fact that the test is adequate for mixtures of different bloods containing human blood as well as in the case of human blood in earth. He says the reactions for human and for monkey blood differ only in degree. His tests on several species of monkey blood showed that the Old World monkeys are more nearly related to man than are the New World monkeys. This conclusion is based upon the amount of precipitate obtained in each case. He also made similar comparative tests with dog and ox antiserum, and mentions the existence of a possible blood relation between all allied species. Later²⁴ he describes some 50 additional experiments, and states that if monkey blood can be excluded the test may be called specific, and "is capable of medicolegal application for the detection of blood-stains." Moreover, he believes it possible by this means to study the relation of different allied species by the degree of the serum reaction in each case. He concludes his paper by a postscript, scoring Uhlenhuth for taking to himself the credit of having discovered the serum test, whereas Nuttall believes the credit of discovery is due to Tchistovitch, and only that of the elaboration of the method to Uhlenhuth.

Grünbaum²⁵ notes the work of Nuttall, just cited, and reports his own similar experiments. He believes the fact that human blood causes a quicker and more marked reaction than monkey blood is sufficient to constitute a differential test, and suggests that the reaction should be studied microscopically, after dilution, while it is occurring.

Linossier²⁶ says the biologic test is not specific, as formerly thought, but only relatively so. The reaction is more marked with the homologous serum. When using rabbit serum immunized with human blood, he obtained strong reactions when human blood was tested, and fainter reactions with the blood of the cow, horse, dog, guineapig, pig, fowl, the reaction diminishing in intensity in the order named. He also obtained similar comparative results when other sera were injected. He believes that a dilution of 1 to 1,000 might allow of a precipitation only in the case of the homologous serum. This fact he believes renders the test only relatively specific.

Nuttall²⁷ again reports the progress of his experiments, showing the reaction of the biologic test in homologous and other sera. He believes the exact degree of

relation of all species can be tabulated when the test is sufficiently worked out and perfected. He still believes the test is specific, because the degree of reaction is so much greater in the case of the homologous serum that mistakes are unlikely. He describes in this article an apparatus he has constructed for measuring the amount of precipitate after it is drawn up into capillary tubes.

The first report of any work on the serum test in the United States was made in April, 1902, by Whitney,²⁸ of Boston, who describes minutely the method of the intraperitoneal injection of rabbits with human serum. He obtained uniform results whether blood or the various exudates or transudates were employed in the injections. In one case he attempted to hasten the formation of the antiserum by giving a single injection of 100 cc., but the blood of the rabbit so treated was negative. He makes the somewhat remarkable suggestion that in case of a suspected murder the expert making the test of the blood-stains should also make a parallel test of the blood of the victim, obtained at autopsy, "that any doubt as to this individual's blood giving the serum reaction can be set at rest." As a matter of fact human blood always gives the serum reaction with properly elaborated antiserum. Hence the above statement is, to say the least, remarkable.

Herewith is given a detailed account of my experiments, conducted between April 1 and May 25, and between November 1 and December 30, 1902, in the Bacteriological and Research Laboratories of the Northwestern University Medical School, under the direction of Professor F. Robert Zeit.

PRODUCTION OF THE IMMUNE SYSTEM.

RABBIT No. 1.—April 9: Weight, 2,855 gms.; temperature, 100° (normal). Injection, 10 cc. hydrocele fluid, subcutaneously.

April 11: Weight, 2,855 gms.; temperature, 100°. Injection, 10 cc. hydrocele fluid, subcutaneously.

April 14: Weight, 3,027 gms.; temperature, 99.4°. Injection, 10 cc. hydrocele fluid, subcutaneously.

April 16: Weight, 2,987 gms.; temperature, 100.8°. Injection, 5 cc. hydrocele fluid, subcutaneously.

April 18: Weight, 2,900 gms.; temperature, 100.8°. No injection.

April 21: Weight, 2,753 gms.; temperature, 100°. Injection, 5 cc. hydrocele fluid, although the loss of weight had been considerable.

April 23: Weight, 2,795 gms.; temperature, 100°. Injection, 10 cc. hydrocele fluid. Condition good.

April 25: Weight, 2,669 gms.; temperature, 100°. Injection, 5 cc. hydrocele fluid.

April 30: Weight, 2,730 gms.; temperature, 100.8°. Injection, 10 cc. hydrocele fluid.

May 5: Condition apparently good, but shows some stiffness and sensitiveness when handled. No injection given.

May 7: Found a small necrotic area on abdomen near point of injections. Has lost 250 gms. in weight in five days.

May 9: Rabbit died.

Total injection, 65 cc.

RABBIT No. 2.—April 11: Temperature, 100°; weight, 1,750 gms. Injection, 10 cc. defibrinated placental blood.

April 14: Temperature, 99.8°; weight, 1,572 gms.; loss, 178 gms. Injection, 10 cc. blood.

April 16: Temperature, 99.6°; weight, 1,495 gms.; loss, 87 gms. Injection, 5 cc. blood.

April 18: Temperature, 102°; weight, 1,455 gms.; loss, 40 gms. No injection.

April 21: Temperature, 103°; weight not taken. There is a necrotic area two inches in diameter on the abdomen. No injection.

April 23: Condition very bad. No injection.

April 25: Condition unchanged. No injection.

April 30: Condition unchanged.

May 5: Rabbit died.

Total injection, 25 cc.

RABBIT No. 3.—April 23: Temperature, 100°; weight, 1,672 gms. Injection, 5 cc. hydrocele fluid.

April 25: Temperature, 101°; weight, 1,690 gms.; gain 18 gms. Injection, 5 cc. hydrocele fluid.

April 30: Temperature 100.4°; weight, 1,600 gms.; loss, 90 gms. Injection, 5 cc. hydrocele fluid.

May 2: Temperature, 102.2°; weight, 1,602 gms.; gain, [2 gms. No injection.

May 5: Temperature, 100.4°; weight, 1,622 gms.; gain, 20 gms. Injection, 5 cc. hydrocele fluid.

May 7: Temperature, 103°; weight, 1,570 gms.; loss, 52 gms. No injection.

May 9: Temperature, 102.8°; weight, 1,585 gms.; gain, 15 gms. No injection.

May 14: Temperature, 100.8°; weight, 1,592 gms.; gain, 7 gms. Injection, 5 cc. blood.

May 16: Temperature, 103°; weight, 1,510 gms.; loss, 82 gms. No injection.

May 21: Rabbit chloroformed and blood collected from heart in sterile bottle; allowed to clot in icebox; carbolic acid added; separated serum drawn up into sterile pipet and sealed. Total injection, 25 cc. blood and hydrocele fluid.

RABBIT No. 4.—April 30: Temperature, 100°; weight, 1,195 gms. Injection, 5 cc. blood.

May 2: Temperature, 100.2°; weight, 1,195 gms. Injection, 5 cc. blood.

May 5: Temperature, 100°; weight, 1,170 gms.; loss, 25 gms. Injection, 10 cc. blood.

May 7: Temperature, 101°; weight, 1,160 gms.; loss 10 gms. Injection, 5 cc. blood and 5 cc. hydrocele fluid.

May 9: Temperature, 103°; weight, 1,115 gms.; loss, 45 gms. No injection.

May 14: Temperature, 102°; weight, 1,105 gms.; loss, 10 gms. No injection.

May 16: Temperature, 99.8°; weight, 1,030 gms. No injection.

May 17: Rabbit died suddenly; no cause discoverable.

Total injection, 30 cc.

RABBIT No. 5.—April 30: Temperature, 100°; weight, 1,112 gms. Injection, 5 cc. blood.

May 2: Temperature, 100°; weight, 1,070 gms.; loss, 32 gms. Injection, 5 cc. blood.

May 5: Temperature, 100°; weight, 1,065 gms.; loss, 5 gms. Injection, 5 cc. blood.

May 7: Temperature, 101°; weight, 1,000 gms.; loss, 65 gms. Injection, 5 cc. blood.

May 9: Temperature, 100.2°; weight, 985 gms.; loss, 15 gms. Injection, 5 cc. hydrocele fluid.

May 10: Rabbit died: no cause known.

Total injection, 25 cc.

RABBIT No. 6.—April 30: Temperature, 100°; weight 2,050 gms. Injection, 5 cc. blood.

May 2: Temperature, 101.6°; weight, 2,035 gms.; loss, 15 gms. No injection.

May 5: Temperature, 100°; weight, 2,015 gms.; loss, 20 gms. Injection, 10 cc. blood.

May 7: Temperature, 100.5°; weight, 1,950 gms.; loss, 65 gms. Injection, 10 cc. hydrocele fluid.

May 9: Temperature, 103°; weight, 1,870 gms.; loss, 80 gms. No injection.

May 14: Temperature, 103°; weight, 1,900 gms.; gain, 30 gms. No injection; condition apparently bad.

May 16: Temperature, 101°; weight, 1,900 gms. No injection; condition better.

May 21: Temperature, 100°; weight, 1,880 gms.; loss, 20 gms. Condition good. Rabbit was chloroformed and the blood drawn as before, and the serum sealed up in sterile pipets.

Total injection, 25 cc.

The serum was prepared, as above described, six months ago, viz., in November and December, 1902. Other rabbits have since been immunized in the same way.

APPLICATION OF THE TEST.

Five cubic centimeters of the immune serum, prepared as already described, were diluted in a sterile graduate 100 times with sterilized water. A stain of menstrual blood 36 days old was washed out in distilled water, and the resulting reddish liquid repeatedly filtered. To 2 cc. of this solution was added an equal amount of the dilute immune serum in each of four sterile stoppered test-tubes. The tubes were then placed in the incubator at 37° C. for two hours. A faint cloudiness appeared. After 24 hours in the desk at room temperature, the turbidity was marked, especially in the upper part of the tubes. Later a precipitate slowly formed and settled to the bottom of the tubes. No further change occurred. The control tests of normal rabbit serum remained perfectly clear.

A five months' old stain of monkey's blood on filter-paper was tested, as was the human blood in the previous case. After two hours in the incubator at 37° C. there was no change. On standing for several hours in the desk at room temperature the same kind of cloudiness was observed as had been noted in the human blood, although in this instance it was much less marked. No precipitate formed, even after four days. The control test of normal rabbit serum remained perfectly clear.

To 1 cc. of undiluted immune serum were added 2 cc. of a strong solution of menstrual blood. A cloudiness appeared at once at room temperature, and in 20 minutes a heavy flocculent precipitate was formed, which slowly settled to the bottom of the tube.

The following 19 bloods were tested as were the preceding, but with no reaction whatever: Dog, ferret, rabbit, guineapig, cow, red squirrel, gray squirrel, deer, chicken, redbird, chameleon, owl, pig, sheep, mouse, iguana, pigeon, turtle, and parrot. All these tests, as well as the control tests, were unchanged, either in the incubator or at room temperature.

Solutions of human and of monkey blood were diluted so that the red color just faded. These were tested with immune serum previously diluted 500 times. No immediate reaction occurred in any of the tubes. After three hours in the incubator at 37° C. the human blood solution was distinctly turbid and that of the monkey blood perfectly clear. The control tests of normal rabbit serum were also clear.

A solution containing cow, pig, sheep, dog, and human blood was put into one test-tube, and a similar mixture into another, and to the latter was added an equal quantity of the immune serum. The tubes were incubated for three hours. The solution to which had been added the test-serum became turbid, the other remaining clear. No change occurred in the control tests.

Three tubes of a dilute solution of human blood and three tubes of a similarly diluted solution of monkey blood were treated with an equal amount of the immune serum diluted 20,000 times. After the usual incubation the tubes of monkey blood and of the control tests were perfectly clear, while those of the human blood were slightly but distinctly cloudy.

Two tests each of human and of monkey blood were made simultaneously. After three hours in the incubator at 37° C. the tubes of human blood were turbid, and those of the monkey blood clear. The tubes were all incubated for ten hours longer, at the end of which time the tubes of human blood were much more turbid, those of the monkey blood remaining unchanged. The control tests of normal rabbit serum remained unchanged.

The same test was made again, using three tubes each of human and of monkey blood, with the same result.

In the next test 12 tubes were used; five contained human blood treated with test-serum diluted 500 times; three contained normal rabbit serum similarly treated; the other four contained monkey blood treated with the immune serum. After eight hours in the incubator at 37° C. all the tubes containing the human blood were turbid, the control tests were perfectly clear and three of those containing the monkey blood were clear; one of these was cloudy, probably due to the growth of bacteria introduced during the manipulations and developed in the course of this protracted incubation.

Five tubes containing a very dilute solution of human blood, six containing a similarly diluted solution of monkey blood, and an equal number containing normal rabbit serum were treated with the 1-500 solution of immune serum, as before, and incubated four hours. At the end of this time no reaction whatever had occurred in any of the tubes. The test was immediately repeated, the greatest care being observed in all the details. The result was ideal, all the tubes of human blood becoming cloudy and all the rest remaining perfectly clear.

The reason for the failure of the last preceding test is not known.

A human blood solution was diluted 600 times and a single drop of pure immune serum added to 2 cc. of the diluted solution. An immediate cloudiness appeared. The same test applied to monkey blood and to normal rabbit serum gave no result.

The last test was repeated, using 10 tubes each of human and monkey blood and of normal rabbit serum. The same result was obtained.

One tube of human blood, diluted 4,000 times, gave an immediate reaction on adding one drop of the undiluted immune serum.

Human and monkey blood-stains in earth were tested simultaneously, with positive results in the case of the human blood only.

In another test of the same kind, the whole number of tubes, including the control, become turbid, showing the presence of some foreign body, probably one of the mineral salts which cause a cloudiness in albuminous solutions. This test alone is sufficient to demonstrate the value of the control tests in comparative work.

A two-ounce bottle of old, putrid blood of unknown origin was submitted to me for the purpose of determining whether or no it was of human origin. Six tests were made as follow: 1. One tube each of human blood, of normal rabbit serum, and of the unknown specimen were diluted 500 times and three drops of the test serum added. 2. One tube each of the above bloods were diluted ten times and tested as usual, at room temperature. 3. One of each variety of blood was diluted 500 times, and an equal amount of 1-500 test-serum added, all being then incubated for three hours at 37°. The tests of the human blood were positive, while those of the unknown blood and the control serum remained unchanged.

METHODS AND RESULTS.

I have followed the Uhlenhuth method, believing that an absolute differentiation of blood-stains is possible by this means, if properly employed, and that a microscopic differentiation is, for the reasons cited, impossible, or, at least, impracticable for medicolegal purposes. Large, strong animals, preferably rabbits, are used, since they have a relatively great resisting power. The animals are injected subcutaneously with 5 cc. to 10 cc. of sterile human blood or serous exudate, the injections being repeated every two to five days, depending upon the condition of the test-animal. The occurrence of a rise of temperature above 101° F., or a decided loss in weight are considered counterindications to further injections until after this reaction has subsided. It is better to give injections of only 5 cc. each, and always with great care as to a sepsis, since abscesses often develop at or near the site of the punctures. I lost four of the first six test-animals from septicemia.

The total amount of the injection necessary to produce a potent antiserum varies slightly with different test-animals. Usually 20 to 30 cubic centimeters is a sufficient quantity for an average rabbit, and with due care a specific antiserum can always be produced in three or four weeks.

Human blood, hydrocele fluid or pleural or peritoneal exudate may be injected, and with almost equally good results in the tests; perhaps the hydrocele fluid is a little more powerful than the other exudates mentioned, and is certainly the best to handle, although it spoils readily. All my injections are made subcutaneously with a 5 cc. antitoxin syringe. There is usually a constant loss of weight on the part of the test-animal during the injections.

After a sufficient quantity of blood or of serum has been injected to ensure obtaining an antiserum, the rabbit is chloroformed, the chest cavity opened and the blood drawn from the heart into a sterile receptacle by means of a sterile trocar and cannula. The drawn blood is placed in the ice box for one hour, until well coagulated. Carbolic acid is now added to the serum which has separated, sufficient to make the mixture approximately .5% acid. The serum is then drawn up into sterile pipets and sealed. It will remain potent indefinitely when so prepared, if kept at a low temperature.

The test is made as follows:

A given amount of the test-serum is diluted to the desired extent with sterile water or normal salt solution. To a few cubic centimeters of this diluted solution in a sterile test-tube is added an equal quantity of a similarly diluted solution of the blood to be tested and the tube left at room temperature or

placed for two to three hours in the incubator at 37° C. The reaction, if it occurs, will be more rapid and more marked if the tube is exposed to the higher temperature. If the dilution be sufficient the reaction will not occur at room temperature. If the test-serum is used undiluted and pure human blood is added to it the reaction is immediate. If the dilute solutions are used the time required in the incubator varies from one to several hours. If only the sample of blood to be tested is diluted and the test-serum used pure, the reaction is also immediate. The reaction is marked by a turbidity of the solution, becoming constantly more intense, and in the case of the strong solutions of human blood, going on to the formation of a flocculent precipitate which slowly settles to the bottom of the test-tube.

If an old stain is to be examined by the serum test the material containing it is washed out in sterile water or in sterile normal salt solution, the mixture repeatedly filtered and finally added to some of the test-serum, as in the examination of fresh blood already described.

In making comparative tests it is necessary to use approximately the same dilution of the bloods tested; this may be accomplished by comparison with a hemoglobin scale. It is also necessary constantly to employ control tests of normal rabbit serum, to exclude errors possibly arising from the occurrence of bacterial growth or the presence of the albumin precipitants in the solutions.

When the test-serum is used undiluted and pure blood is tested, human blood can always be differentiated from that of every lower animal, except the monkey. However, when both the human and the monkey blood are made very dilute, and the test-serum also diluted 500 times, the test of the human blood only is positive. Moreover, if only the bloods tested are diluted and the immune serum used pure, the same result is obtained.

There were 35 comparative tests of human and monkey blood made in the manner described, and in 29 the above result was obtained. The six failures all occurred in the one test above described, the reason for which is still unexplained.

Uhlenhuth says²⁰ that "the reaction, to be positive, must occur immediately." This is true when the test-serum is used undiluted or only slightly so, and allows of a specific test only for most of the lower animals. Without a dilution of the tested blood of at least 1-500 a differentiation between human and monkey blood is impossible. With this dilution the reaction occurs uniformly, and this very essential differentiation is possible. A reaction, positive but not marked, is obtainable in the case of human blood with a dilution of the test-serum of 1-20,000.

From the foregoing experiments it appears better to dilute the blood to be tested 500 or more times and to use the test-serum undiluted because, first, the reaction is immediate; second, it occurs in the cold; third, it excludes monkey blood; and fourth, it excludes turbidity possibly resulting from bacterial growth during the process of incubation.

SOURCES OF ERROR.

The most frequent sources of error and the means for their elimination are: 1. Contamination of the specimen tested with monkey blood; excluded by a proper dilution of the specimen, or of both specimen and test-serum; and by control tests. 2. Contamination with albumin precipitants; excluded by control tests. 3. Too long an incubation; excluded by control tests; and by parallel tests in the cold, diluting only the blood tested.

CONCLUSIONS.

Judging from these experiments, I believe the following conclusions are justified:

1. The reaction is caused by the development within the blood-serum of the injected animal of an antibody or a property or substance which causes a certain reaction with the serum homologous to the one injected.
2. The reaction does not occur when normal rabbit serum is used.
3. The reaction occurs much more rapidly, especially

when dilute solutions are used, if the test is exposed to a temperature of 37° C., although it will occur at ordinary room temperature.

4. An immediate result in the cold is obtainable by diluting only the blood tested, the test-serum being used pure.

5. The reaction is obtainable when using a dilution of the test-serum of 1-20,000, or of the blood tested of 1-4,000. Hence, only a minute stain and a single drop of the test-serum are required for making the test.

6. The delicacy of the test is not altered by the admixture of other bloods or of other foreign material, except the albumin precipitants.

7. The presence or absence of mineral salts, such as copper sulfate, or of other precipitants of albumin, can be determined by the control tests.

8. The delicacy of the test is not materially altered by the age of the stain.

9. A differentiation from monkey blood is possible, and contamination with monkey blood can be excluded, first, by a great dilution of the blood tested and a dilution of the test-serum of 1-500, with incubation; second, by a great dilution of the blood tested, the test-serum being used pure, and the test made at room temperature.

10. The test is specific, invariable, and therefore applicable to forensic use.

I desire to express my sincere thanks to those who have assisted me in this work. To Dr. Colby, of the Rush Medical College Faculty, for much material for the experiments, as well as for a kindly interest and encouragement at all times; to Professor Schroeder and to Drs. Ferrell, Koehler, and Parker for material furnished; to Dr. Biehn, for his kind assistance in the laboratory work; and especially to Professor Zeit, for his uniformly courteous treatment, his personal interest in the work, and his encouragement and enthusiastic direction of all my efforts.

Since writing this paper I have made six parallel tests with the blood of white and of colored persons to determine whether there is any difference in the reaction of the blood of the two races. In all of the tests the immune serum was used pure; in one-half the tubes the tested blood was diluted 10 times; in the remainder, 500 times. The reaction occurred much more slowly than is usual but at the end of five hours in the incubator at 37° C. all the tubes were equally turbid and the characteristic flocculent precipitate soon formed. The control tests of normal rabbit serum remained unchanged as usual.

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Ptomains in Milk.—At San Juan, Porto Rico, eighteen people living at a boarding-house were poisoned by milk containing ptomains. Eleven doctors responded to the alarm, and the use of stomach pumps saved the lives of all the sufferers. At the Maternity Hospital the nurses, helpers and some of the patients were similarly poisoned, but were relieved.

ISOLYSINS IN THE SERUM OF DISEASE.

A Preliminary Report.

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Recently¹ I had occasion to note the presence in the serum of a leukemic patient of an isolysin—i. e., a substance which caused hemolysis of human blood-corpuscles. This hemolysin may have been a product of the disease, or it may have been derived from the leukocytes,² which were present in enormous numbers. The red corpuscles of this leukemic blood appeared to be immune to the hemolysin contained in the serum. Whether the requisite complement was present in the leukemic serum was not investigated. That the leukemic red corpuscles were shielded by an antihemolysin is not likely since this antihemolysin would have protected normal human corpuscles also—which was not the case.

The most probable explanation of the immunity of the leukemic corpuscles to this hemolysin is that they possessed no receptors for the same, and therefore could not fix the hemolysin.³

I was led by the foregoing observation to investigate the sera in other diseases to determine if isolysins are present, and, if so, whether such isolysins are specific for these diseases or not.

It is conceivable that an investigation along this line might lead to observations that could be of use in diagnosis. For example, suppose any disease—say cancer—should give rise to the presence of a hemolysin in the serum which, similar to that in the leukemic serum, would not attack the corpuscles of the cancer patient, but would attack normal human corpuscles. Knowing this, if we found that the serum of a patient in whom cancer was suspected would lysis normal human corpuscles, but would not lysis the corpuscles of a known case of cancer, the inference would be that the suspected patient really suffered from cancer. It was with this idea in mind that I took up this study. So far comparatively few experiments have been made, so that this paper is merely in the nature of a preliminary report.

The technic followed is simple: The blood (obtained by pricking the ear) was drawn up into a small glass tube, one end of which had a capillary opening. After standing several hours in the ice-chest the serum which separated out was pipetted off onto a slide. Then from ten to eighty parts of this serum was measured off by means of a Thoma-Zeiss pipet used in the counting of leukocytes. The measured serum was placed on a slide and then one part of normal human blood taken from the ear, and undefibrinated, was added to the serum and the two quickly mixed with a pointed glass rod. The mixture was then allowed to flow into tubes having capillary openings at both ends. These tubes were made of hard glass, had a diameter of 6 mm., a lumen whose diameter was 2 mm. and a length of about 5 cm. After all this mixture had entered the tube, the latter was in most experiments sealed at both ends with small bits of rubber protective. The tube was then allowed to lie in a horizontal position at a room temperature varying from 16° to 25° C. The blood-corpuscles were in every instance quickly agglutinated by the serum and settled rapidly to the bottom of the serum in the form of a long ribbon. The ends of the tubes were sealed to avoid drying out of the serum.

I. Case of leukemia, blood obtained shortly after autopsy. To one part of a 10% suspension of my own blood in 0.9% saline was added one part of the leukemic serum. A good agglutina-

¹ American Journal of Physiology, Vol. VIII, p. 401.

² Considerable evidence has recently been adduced by various hematologists to show that the hemolysis of normal serum originates, at least in part, from the leukocytes.

³ Compare Ehrlich's and Morgenroth's experiments on formation of autolysins and isolysins. Berl. klin. Woch., 1900, p. 453.

tion and precipitation of the corpuscles occurred. After 20 minutes one-half part of the leukemic serum was added to this mixture. Laking started soon after and in an hour was almost complete.

II. Case of marked anemia, having several of the characteristics of a primary anemia. About 20 parts of serum from this case + 1 part normal blood. (No accurate measurements of serum and blood were made in this case.) No hemolysis after six hours.

III. Case of anemia, blood count gave 2,600,000 reds, 3,200 whites to 1 cmm.; no splenic enlargement. Mixed 40 parts serum + 1 part normal blood. Agglutinated rapidly. No hemolysis at room temperature (16° to 18° C.) at the end of 24 hours. Kept 24 hours longer at a temperature of 20° to 25°, still no hemolysis.

IV. Case of pneumonia, temperature had been normal for three days, but the affected lung was still markedly consolidated. Blood contained large proportion of fibrin. Mixed 17 parts of the serum + 1 part normal blood; mixed 10 parts of the serum + 1 part normal blood. Agglutination was marked and immediate. After 5 hours no laking in either tube. After 16 hours slight trace of laking in both tubes.

V. Case of pneumonia, temperature 104° F. Mixed 40 parts serum + 1 part normal blood. Average room temperature 22° C. No hemolysis after 48 hours.

VI. Case of cancer of the stomach, patient very anemic and cachectic. Mixed 70 parts serum + 1 part normal blood. Agglutinated well. Showed considerable laking in two hours at room temperature of 22° C. Laking not complete at end of 48 hours.

VII. Case of cancer of the breast (of one year's standing). No ulceration; patient not cachectic. Mixed 60 parts serum + 1 part normal blood (tube closed at both ends); mixed 30 parts serum + 1 part normal blood (tube closed at both ends); mixed 30 parts serum + 1 part normal blood (tube left open at both ends). Agglutination took place in all the tubes. No hemolysis after four days in any of the three tubes—room temperature, 20° to 22° C.

VIII. Case of cancer of the stomach; patient very anemic. Mixed 30 parts serum + 1 part of blood obtained postmortem from a case of cancer of the liver. No hemolysis after 12 hours.

IX. Case of typhoid in the fourth week; temperature, 104° F. Mixed 30 parts serum + 1 part normal blood. Gave powerful and immediate agglutination. No hemolysis after three days, even though drying out had taken place (tube left open at ends).

X. Case of typhoid; beginning of third week; temperature, 102° F. Mixed 25 parts serum + 1 of normal blood. Good agglutination. Absolutely no hemolysis at room temperature at end of three days, even though some drying out had taken place.

XI. Patient suffering from uremic coma; had been bled and transfused a short time previous to the test. Mixed 30 parts serum + 1 part normal blood. Good agglutination. No hemolysis after three days, even though some drying out had taken place.

a. Mixed 1 part serum from Case IX (typhoid) with 1/2 part of blood (obtained from clot) from Case X (typhoid). Powerful agglutination. Tube kept open and kept at room temperature. Considerable laking after 12 hours, showing itself principally where slight drying out had occurred, *i. e.*, at the ends of the tube. After two or three days, very much laking.

b. Mixed 1 part serum from Case X (typhoid) + 1 part blood (obtained from clot) from Case IX (typhoid). Good agglutination. Tube left open. After 12 hours, considerable laking, especially marked where slight drying out had occurred (at end of tubes).

c. Mixed 1 part serum from Case IX (typhoid) + 1 part blood (obtained from clot) from Case XI (uremia). Tube left open. Strong agglutination. After 12 hours, considerable laking, beginning at ends of tube where slight drying had occurred. Very marked hemolysis after two or three days.

d. Mixed 1 part serum from Case XI (uremia) + 1 part blood (obtained from clot) from Case IX (typhoid). Good agglutination. Tube left open. Good laking after 12 hours; considerable after two or three days. Laking began at ends of tube.

The sera from the two cases of typhoid and the case of uremia caused absolutely no laking of normal human blood-corpuscles after two or three days, even though drying out had occurred at the ends of the tube. But the sera in all these cases produced rapid laking of each other's blood-corpuscles, the laking beginning at the ends of the tubes where slight drying out had occurred.

This laking in all probability is due to the lowered resistance of the blood-corpuscles in these diseases to hyperisotonic solutions.

Dr. Guthrie¹ has shown that normal blood-corpuscles after drying are readily laked by the addition of serum

or normal saline solution. In none of the tubes in my experiments in which normal blood was used was any laking observed for several days, probably because no mixing of the serum and dried corpuscles had occurred. In the case of the diseases under consideration, it is possible that the envelopes of the corpuscles deteriorate and become more permeable, so that the latter are more readily laked during the drying out process than is normally the case.

It is my intention to examine the blood in various diseased conditions along the lines already mentioned, although it is quite likely that the final results will have no practical value other than that which attaches to any work of a statistic nature.

MODIFICATION OF MILK FOR INFANT FEEDING.¹

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By the modification of milk for infant feeding we mean in a broad way adapting cow's milk to the digestive powers of the infant. This means that cow's milk must be so changed as to contain the proper ingredients in the proper proportions and quantity to nourish a child properly. This is a matter that always requires considerable care for a well infant, and often presents very serious difficulties when we come to treat a sick child. The difference in the composition of human and cow's milk is very decided, and as the cow is the only animal upon which we can depend, its milk is now looked upon as the only kind to be used for this purpose. The breed of cow is also of some importance, and while the scope of this paper does not permit of an extended consideration of this part of the subject, we will take it for granted that the high grade Jersey or Guernsey must not be selected, but the commoner breeds—the cows that show a distinct ability to raise their young, freedom from much inbreeding, and that yield milk of an average of 4% fat. The Holstein is unquestionably one of the best cows for infant feeding.

The following table (No. 1) shows the composition of both human and cow's milk. The reaction of woman's milk is amphoteric, while that of cow's milk is slightly acid. The percentage of water is practically the same. Cow's milk contains a higher percentage of mineral matter, and a slightly greater amount of solid material;

TABLE I.

	Woman's milk directly from the breast.	Cow's milk, as ordinarily received, about 24 hours old.
Reaction	Amphoteric. (More alkaline than acid.)	Slightly acid.
Water.....	87% to 88%.	86% to 87%.
Mineral matter.....	0.20%.	0.70%.
Total solids.....	13% to 12%.	14% to 13%.
Fats.....	4%. (Relatively poor in fatty acid.)	4%.
Milk-sugar.....	7%.	4.50%.
Proteids	1.50%.	4%.
Caseinogen (König).....	0.59%.	2.88%.
Lactalbumin (König).....	1.23%.	0.53%.
Coagulable proteids.....	Small proportionally.	Large proportionally.

the percentage of fats is the same in both. Human milk is sweeter than cow's milk, and the proteid of human milk is 1.5% compared with the proteid of 4% of cow's milk. The proteid of cow's milk is coagulated into larger, firmer masses than the proteid of human milk, and these masses are more difficult to break up in the stomach and to digest.

The first problem presented to us is, therefore, to

¹ Read April 22, 1903, before the Philadelphia County Medical Society.

¹ Am. Journal of Phys., Vol. viii, p. 441.

modify the percentages of cow's milk to resemble those of mother's milk, and upon the success of this modification depends very often the saving of human life, and if not the life, the future strength and vigor of the individual. Proper feeding usually means the absence of malnutrition, rickets, scurvy, possibly tuberculosis, and in the end, the perfect type of infant and child, compared with the frail and delicate.

In the modification of cow's milk, it must be remembered that the proteids are much more difficult to digest than the proteids of mother's milk, and the object of modification is to select the correct percentage of fat, sugar, and proteids for the digestion of healthy and sick infants. When indigestion is present, the proportion of fat or proteids, or of both, may be at fault. Cow's milk should be free from all foreign matter, and should never contain more than 10,000 bacteria to the cc., and no microorganisms such as streptococci or staphylococci. All persons brought in contact with the milk should be absolutely free from all contamination with any disease, such as scarlet fever, typhoid fever, diphtheria, etc. The cow should be healthy and free from tuberculosis. It should be fed and groomed most carefully, have an abundance of fresh, pure drinking water, and the stables should be constructed so that each animal receives plenty of fresh air, free from dust. As the milk of a herd is less likely to vary, it is to be preferred to that of a single cow. In the consideration of the modification of milk, everything depends on carrying out the minutest details of all the instructions given, as the neglect of any one of these means often a complete failure.

The cow proteid, by reason of its amount, 4%, its indigestibility by infants, and its difference in chemical composition from human proteid, makes its consideration of the first importance. The proteids replace the waste of nitrogenous material ever going on in the body, and have much to do with the production of animal heat. The proteids easiest of digestion are those of mother's milk, and the substitution of cow proteids is the greatest difficulty encountered in infant feeding. During the first few months of life, the amount of proteid should not be greater than 1%. Children who do not receive sufficient proteid are apt to become anemic, to have blueness and coldness of the hands and feet, and their flesh is, as a rule, soft and flabby.

The two most important ingredients of proteids are caseinogen and lactalbumin; the least important is lactoglobulin. Chemists do not agree as to the exact proportion of the different proteids present. The small amount of proteid given in early infancy has probably much to do with the small, hard, dry stools so commonly seen in the first few months. During this early period, colic and curds in the stools usually mean too high proteid percentages or the inability of the child to digest the proteid given.

By what is usually called the "split proteid," it is possible to give a child, and especially a young infant, a proteid in which the caseinogen is only one-fourth, and the lactalbumin three-fourths of the total proteid. This is, however, only possible when 1% or less of proteid is required. The following prescription illustrates this. In this prescription the amount of fat and sugar can be increased or decreased at will:

TABLE II.

Fat.....	3.50%	Number of feedings.....	8
Sugar.....	6.50%	Amount at each feeding...	3 oz.
Proteids (total).....	1.00%	Infant's age.....	9 wks.
(a) Lactalbumin (whey proteid).....	0.75%	Infant's weight.....	9½ lbs.
(b) Caseinogen.....	0.25%	Alkalinity.....	5%
		Heat at.....	155° F.

By the use of whey, the infant's food can be so prepared that the proportion of lactalbumin to caseinogen can be made during the earlier months of life to approximate closely to the proportion found in normal mother's milk. This ability to split up the proteid is one of the most important in infant feeding, often being of great

assistance in carrying the infant through the first few months of life, because as the infant increases in age its power to digest cow's proteid also increases. The great advantage of the whey proteid in early infancy and in cases of proteid indigestion in infants of 9 to 12 months can really only be appreciated by those who have used it and seen the results.

The following conclusion seems to me only a fair and just one: By the use of whey cream mixtures we can render cow's milk much easier of digestion to the infant. Whey mixtures should not be exposed to a temperature above 69.3° C., else the whey proteid is coagulated. The following table gives the possible percentages of fat and proteid with creams of 20%, 16%, and 12%, combined with whey, fat 0.32:

TABLE III.

Possible percentages of fat and proteid with creams of 20%, 16%, and 12%. Fat and whey containing fat 0.32.

Cream, 20%.	Whey, q. s.	Fat, 1%.	Proteid, 0.94.
0.70 oz.	" " 20 "	" 2%.	" 1.06.
1.71 oz.	" " 20 "	" 3%.	" 1.18.
2.72 oz.	" " 20 "	" 4%.	" 1.30.
3.74 oz.	" " 20 "	" 4%.	" 1.30.
Cream, 16%.	Whey, q. s.	Fat, 1%.	Proteid, 0.98.
0.87 oz.	" " 20 "	" 2%.	" 1.15.
2.14 oz.	" " 20 "	" 3%.	" 1.32.
3.42 oz.	" " 20 "	" 4%.	" 1.50.
4.69 oz.	" " 20 "	" 4%.	" 1.50.
Cream, 12%.	Whey, q. s.	Fat, 1%.	Proteid, 1.03.
1.16 oz.	" " 20 "	" 2%.	" 1.28.
2.88 oz.	" " 20 "	" 3%.	" 1.53.
4.59 oz.	" " 20 "	" 4%.	" 1.79.
6.30 oz.	" " 20 "	" 4%.	" 1.79.

The fat in the food prevents nitrogenous waste, and is a great source of animal heat. The fats probably play an active part in the growth of bone and nerve-tissue. Fat is required in infants in greater proportion than at any later period of life. Lack of fat in the food usually means a rachitic child. The fat of woman's milk consists of palmitin, stearin, and olein; the amount of fatty acids is small, less than in cow's milk. In the modification of cow's milk, too high percentages of fat often produce vomiting of thick, sour milk, or diarrhea, the stools being thin, green; and sour-smelling.

Sugar.—The digestion by the infant and young child of milk-sugar is usually attended with little or no difficulty. The carbohydrates should not be given to the infant of a few months in the form of starch, owing to the poor starch digestive power previous to the seventh or eighth month of life. An excess of sugar often leads to a rapid gain in weight, the flesh acquired being, however, in such cases usually soft and flabby, and the child frequently becomes anemic. The sugar has much to do with the production of animal heat. The sugar in both human and cow's milk is the same, lactose.

Cereals in Infant Feeding.—Mother's milk does not contain starch, and it seems, therefore, plain that in the earlier months of life, especially in view of the poorly developed amylolytic function of the infant, that our modified milk should not during these earlier months contain starch. The addition of a small proportion of oat-jelly, wheat or barley-water after the eighth month, in my experience, has certainly seemed of benefit. In laboratory feeding the ability to prescribe the exact amount of cereal required and desired by the infant has much to commend it.

The question has been much discussed lately as to the benefit to be derived from the addition of gruels to the milk of infants who are unable to digest more than a very low percentage of proteid. The general belief at present is, that the addition of a small amount, about 1%, of cereal often makes it possible to increase the amount of proteid given.

It is important when diluents other than water are used to observe the quantity of starch the diluents give to the milk modification, a starch diluent of 1% giving, according to White (quoted by Rotch), a fine flocculent

coagulum, while a diluent with .3% starch gave a much coarser coagulum.

Heating of Milk.—The large number of bacteria always found in milk naturally suggested the use of heat as a means of destroying or at least checking their growth. Sterilization was formerly the rule, the temperature of the milk being raised to 212° F. This temperature, if continued for 45 minutes, destroys practically all fully-developed bacteria, but not the spores, and these may rapidly cause changes in the milk. Milk so treated is changed in taste, is apt to constipate, the fat is affected, and the casein is not so quickly coagulated by rennet, and most important of all, infants fed upon sterilized milk have been occasionally known to develop scurvy.

Pasteurization, or the heating of milk to 140° F. to 155° F. for 20 to 30 minutes, has practically replaced sterilization. This temperature destroys the typhoid, diphtheria and tubercle bacilli, and all of the bacteria in milk, except, perhaps, 2%. The changes in milk produced by sterilization are not noted in pasteurization. The spores, of course, are not destroyed. Milk should always be rapidly cooled after pasteurization.

The question is occasionally asked, "Why heat milk at all?" In my opinion, the future of infant feeding will show very little milk heated, simply because the necessity for heat in any form will be unnecessary. When children can secure pure milk, containing no more than 2,500 bacteria to the cc., free from all foreign matter, and free from all pathogenic bacteria, when this milk is properly transported and *always* kept cold, we will see aseptic milk and unheated milk just as we now see aseptic surgery, rather than antiseptic surgery.

Peptonized Milk.—Pancreas .32 gram (5 grains) and of sodium bicarbonate 1 gram (15 grains) are dissolved in 118 cc. (4 ounces) of cold water and added to 355 cc. (12 ounces) of fresh whole milk. This is placed in a

itself is not fresh, clean as regards dirt and bacteria, and of known chemical composition. At the milk laboratory, the separator by its centrifugal force removes from the milk and cream a large part of any foreign material as dirt, which is always present, although perhaps in small amount.

Centrifugal or gravity cream, whole milk, fat free milk, sugar solution, cane or milk-sugar, whey, lime-water, sodium bicarbonate, soda and sterile water, the exact composition of each being known, together with gruel of oats, wheat and barley of known composition, constitute the pharmacopeia of the milk clerk. Each set of bottles is placed in a separate basket, labeled with the patient's name and address and delivered so soon as possible. The bottles and basket when returned are immediately sterilized, and the bottles washed in boiling, sterile soda solution.

The question of heating is of some importance. Milk from a laboratory farm, if served in cool weather to patients at short distances from the farm, requires no heating; if the weather is hot, pasteurization is safer. Milk transported long distances, or if two or three days' supply is needed, should be sterilized. Unheated, modified laboratory milk has been kept fresh and pure for days, as on ocean voyages. An important factor in this connection is in keeping the bottles *always* on ice.

In the earlier use of milk laboratories the great mistake was made of supposing that all that was necessary was to give a child of a certain age a milk that contained certain known percentages corresponding to those of mother's milk, but further study showed conclusively that the milk of each mother varied in its composition from time to time and that different mothers at the same period of nursing often showed a marked difference in the analyses of their milk, and yet this was compatible with a child having a good digestion and showing a steady gain in weight. (Table IV, Rotch.) This

TABLE IV.—Human Breast Milk Analyses. Mothers healthy and infants all digesting well and gaining in weight.

	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	XIV.
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Fat.....	5.16	4.88	4.84	4.87	4.11	3.82	3.80	3.76	3.90	3.16	2.96	2.36	2.09	2.02
Milk-sugar.....	5.68	6.20	6.10	6.30	5.90	5.70	6.15	6.95	7.30	7.20	5.78	7.10	6.70	6.55
Proteids.....	4.14	3.71	4.17	3.27	3.71	1.08	3.53	2.04	3.07	1.65	1.91	2.20	1.38	2.12
Mineral matter.....	0.17	0.19	0.19	0.16	0.21	0.20	0.20	0.14	0.12	0.21	0.12	0.16	0.15	0.15
Total solids.....	15.15	14.98	15.30	14.10	13.93	10.80	13.68	12.89	13.79	12.22	10.77	11.82	10.32	10.84
Water.....	84.85	85.02	84.70	85.90	86.07	89.20	86.32	87.11	86.21	87.78	89.23	88.18	89.68	89.16
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

water-bath at a temperature of 110° F. for 10 minutes, then removed and kept on ice, or raised quickly to the boiling point, the rapid cooling or raising to the boiling point being required in order to check further peptonization. If it is desired to peptonize the milk completely, the temperature of 110° F. must be continued for about two hours instead of 10 minutes, as mentioned above.

Peptonization is a valuable aid to infants and children whose proteid digestion is weak; it is of benefit in both acute and chronic cases, and of especial benefit in infants. Care must be taken not to continue its use too long, as it is never wise to remove from any organ for too long a time the performance of its proper function, it being rarely necessary to peptonize for a longer period than four to six weeks. Modified milk mixtures may be peptonized in bulk, or by adding the proper portion of a peptonizing tube to each bottle, and heating just before feeding. My preference is for this latter method.

Laboratory Feeding.—A milk laboratory is a milk store where prescriptions calling for certain percentages of fat, sugar, proteid, alkalinity, heating, number of feedings and amount of each feeding are handed to a clerk, and the filled prescription sent to the patient's house. Milk modification will almost invariably fail if the milk

knowledge clearly showed the necessity of considering the child as an individual, and of adapting our milk to two great considerations—its digestion and its gain in weight.

The object of the milk laboratory is, then, to enable physicians to vary within certain wide ranges the milk modification necessary for the feeding of well and sick infants. The laboratory never prescribes milk for children; it simply provides for the physician an up-to-date plant, where everything is done to ensure accuracy, cleanliness and the prompt fulfilment of the physician's milk modifications. Its work is done by trained, skilled clerks, and I most heartily recommend it.

Home Modification of Milk.—The first requisite for home modification is to obtain cream and milk of known percentages. If possible, these should be secured from a milk laboratory, or a milk obtained similar to that recommended by the milk commission of the Philadelphia Pediatric Society. All bottles and nipples should be immediately cleansed after using with very hot water and a brush, and the nipples kept in cool, sterile water, to which has been added a small portion of sodium bicarbonate. The bottles are kept filled with this same soda solution. The bottles should be boiled for 10 minutes just before the day's milk supply is prepared.

Before beginning the preparation of the day's milk, the one to do the modifying, be it mother or nurse, should thoroughly cleanse her hands and forearms. She will need for her modifications the following :

- Cream of known chemical composition for certain modifications.
- Milk of known chemical composition.
- Milk-sugar in a clean jar, with tight cover.
- Limewater.
- Milk-sugar measure, holding 14 grams (3/8 drams).
- Eight ounce graduate.
- Milk dipper or siphon.
- Large spoon, sterilized.
- Sterile water.

The first and most important point to consider in home modification is the composition of the milk and cream used. The best milk, as has been mentioned earlier in this paper, is one obtained from the commoner and hardier breed of cows, containing 4% fat, sugar 4%, and proteid 3.5%. This milk should always be from a herd, and not from a single cow, and can always be obtained from a laboratory, or in Philadelphia from those dairies recommended by the Milk Commission. Gravity cream obtained from this milk is quite stable in its composition, as is shown by the following table (Holt):

TABLE V.

Amount and percentage of gravity cream in 4% fat milk after standing 8 hours.

Removing 16 oz., or the upper half, we secure approximately 7% fat.				
" 11 " " " third, " " 10% "				
" 8 " " " fourth, " " 12% "				
" 6 " " " fifth, " " 16% "				

Separator cream from the laboratory can be obtained of 10%, 12%, 16%, or 20% fat. Gravity cream contains more bacteria than separator cream; in fact, the major portion of the bacteria in milk are found in the upper cream layers. On the other hand, it is claimed that the centrifuge injures the emulsion in centrifugal cream. From a very large experience in the use of both creams, I can say very positively that I have found both to be equally useful.

What is required in a home modification is simplicity; all directions should be written out in ounces of cream, milk, water and limewater, and measures of sugar of milk.

The physician, in his laboratory and home modification, must learn to think in percentages. In prescribing a milk for a well child, he must first decide upon the percentages to be given and by reference to his pocket memoranda translate this into ounces and milk-sugar measures. For an ill child, he must note the percentages being taken, decide, if indigestion, which ingredient of the milk, fat or proteid, or both, is at fault, make his changes accordingly, and if home modification, translate the changed percentages into a new formula of ounces capable of being understood by the mother or nurse.

Home modification, in its easiest form and yet capable of giving the usually prescribed percentages is as follows: After allowing the milk to stand eight hours, remove the top eight ounces from a quart jar of 4% fat milk by means of a dipper and count this as 12% fat cream. Count the lowest eight ounces of the quart fat free milk. From these the following formula may be obtained, covering fairly well the different percentages required for the different periods of life. With a quart of milk home modification can, as a rule, be carried on until the child is about three months old; an extra pint is then ordered. Surely this should stop the cry of expense.

TABLE VI.

FIRST WEEK.			
Fat.....	2.00	12% cream.	Fat-free milk.
Sugar.....	5.00	Cream	3 1/2 oz.
Proteids.....	.075	Milk	1 1/2 oz.
		Milk sugar.....	2 meas.

SECOND WEEK.			
Fat.....	2.50	Cream	4 1/2 oz.
Sugar.....	6.00	Milk	1 1/2 oz.
Proteids.....	1.00	Milk-sugar.....	2 1/2 meas.
THIRD WEEK.			
Fat.....	3.00	Cream	5 oz.
Sugar.....	6.00	Milk	1 oz.
Proteids	1.00	Milk-sugar.....	2 1/4 meas.
FOUR TO SIX WEEKS.			
Fat.....	3.50	Cream	5 3/4 oz.
Sugar.....	6.50	Milk	0 oz.
Proteids	1.00	Milk-sugar.....	2 1/2 meas.
SIX TO EIGHT WEEKS.			
Fat.....	3.50	Cream	5 3/4 oz.
Sugar.....	6.50	Milk	0 oz.
Proteids	1.50	Milk-sugar.....	2 1/4 meas.
TWO TO FOUR MONTHS.			
Fat.....	4.00	Cream	6 3/4 oz.
Sugar.....	7.00	Milk	2 1/4 oz.
Proteids	1.50	Milk-sugar.....	2 1/2 meas.
FOUR TO EIGHT MONTHS.			
Fat.....	4.00	Cream	6 3/4 oz.
Sugar.....	7.00	Milk	4 3/4 oz.
Proteids	2.00	Milk-sugar.....	2 1/4 meas.
EIGHT TO NINE MONTHS.			
Fat.....	4.00	Cream	6 3/4 oz.
Sugar.....	7.00	Milk	7 1/2 oz.
Proteids	2.50	Milk-sugar.....	2 meas.
NINE TO TEN MONTHS.			
Fat.....	4.00	Cream	6 3/4 oz.
Sugar.....	7.00	Milk	10 1/2 oz.
Proteids	3.00	Milk-sugar.....	1 1/2 meas.
TEN TO TWELVE MONTHS.			
Fat.....	4.00	Cream	6 3/4 oz.
Sugar.....	5.00	Milk	11 3/4 oz.
Proteids	3.50	Milk-sugar.....	1 1/2 meas.
AFTER TWELVE MONTHS.			
Unmodified cow's milk.			

The great difficulty, however, is that this method of home modification does not enable us to change our percentages except within certain limits. For instance, using in home modification a 10% cream the lowest possible proteid with 2% fat is 0.75; with a 12% fat cream the lowest possible proteid with 2% fat is 0.63. It is necessary, then, to have creams of 16% and 20% fat.

In order to place home modification on as near a level as possible with laboratory feeding it is necessary to have at command creams of 10%, 12%, 16%, and 20% fat. The following table, arranged by Dr. Maynard Ladd, makes the calculation of any desired percent only a matter of a few seconds.

TABLE VII.

No.	20-oz. mixtures. Percentage of				Ounces of cream.				Ounces fat-free milk used with creams of				Ounces limewater.	Milk-sugar, meas.
	Fat.	Sugar.	Prot'd.	Alk.	10%	12%	16%	20%	10%	12%	16%	20%		
1	1.50	4.50	0.25	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
2	1.50	4.50	0.50	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
3	2.00	5.00	0.25	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
4	2.00	5.00	0.50	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
5	2.00	5.00	0.75	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
6	2.00	5.00	1.00	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
7	2.50	5.50	0.50	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
8	2.50	5.50	0.75	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
9	2.50	6.00	1.00	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
10	3.00	6.00	0.50	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
11	3.00	6.00	0.75	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
12	3.00	6.00	1.00	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
13	3.00	6.00	1.25	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
14	3.00	6.50	1.50	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
15	3.00	6.50	2.00	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
16	3.50	6.00	0.50	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
17	3.50	6.00	0.75	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
18	3.50	6.50	1.00	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
19	3.50	6.50	1.25	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
20	3.50	6.50	1.50	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
21	4.00	6.00	0.60	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
22	4.00	6.00	0.75	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
23	4.00	7.00	1.00	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
24	4.00	7.00	1.25	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
25	4.00	7.00	1.50	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
26	4.00	7.00	2.00	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
27	4.00	7.00	2.50	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
28	4.00	7.00	3.00	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
29	4.00	6.00	3.00	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2
30	4.00	5.50	3.00	5	.....	.....	.....	1 1/2	.....	.....	.....	.....	1	2

THE INEFFICIENCY TO RESTORE PELVIC SUPPORT OF IMMEDIATE SUTURE OF LACERATIONS SUSTAINED DURING LABOR.¹

BY

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During recent years we are coming to realize more and more the importance of careful and painstaking attention to women during pregnancy, labor, and the puerperium.

I will not attempt to add anything new except my own legitimate experience, from which I draw my conclusions, and these are to the effect that women are neglected in the majority of instances during this, the most important period of their lives. I might be more emphatic and say maltreated, because there are instances in which wanton meddlesomeness and thoughtlessness at this time have been responsible for a woman's misery the rest of her life. Labor may be a physiologic process and as such should be left to nature; at least until such a time that surgical interference is demanded, and when assistance is called for it should be rendered in the most careful manner at the proper time. But the woman should not be abandoned as soon as the immediate effects of labor are passed, but kept under observation and any after consequences noted and corrected.

It is practically impossible as conditions now exist for a woman to be delivered of a child at full term without more or less injury to the pelvic floor, vagina, or perineum. When we remember that the outlet of the birth canal, with a diameter of from 1 to 1½ inches, is suddenly dilated until a ring of 10 to 12 inches in circumference is produced, it is not hard to understand why injury is inflicted. These injuries do not take place as a rule where they are plainly visible, but subcutaneously. The line of laceration follows the direction of least resistance or at the point of greatest pressure. The tear may go through the skin in the median line, but as the force strikes the muscular and fascial structures underneath, whose weakest point is in an entirely different direction along the sides of the vagina and rectum, an irregular or zigzag tear is produced instead of a straight up and down wound through the same plane of structures.

The tears in the vaginal mucous membrane and perineum may not be, and in fact usually are not at the same point. Lacerations of the pelvic floor (levator ani muscle and fascia) may occur immediately under the tear in the vaginal mucous membrane, or it may be submucous at another point, or the musculature of the pelvic floor may be extensively lacerated and the skin and mucosa remain intact. Under such circumstances, suturing the superficial rents in the skin and mucous membrane, passing through a promiscuous mass of structure beneath, will not restore the pelvic floor nor prevent vaginal prolapse. Who would attempt to cure hernia by simply suturing together the skin over the abdominal ring, and pelvic herniation is practically what happens when the musculature and fascial structures of the pelvic diaphragm are impaired?

The consequences of lacerations occurring during labor depends entirely upon the structures injured. If confined to the skin and external muscles, the perineum, no harm will follow so far as support is concerned, but if the deeper tissues, the levator ani muscles, are involved there will occur loss of the perineal flexure of the rectum and vagina, with recession of the vagina and anus from the pubic arch and rectocele, cystocele, prolapsus uteri and uterine retrodeviation, subinvolution of the uterus and vagina, and splanchnoptosis, followed by dynamic disturbances of the influence of intraabdominal pressure,

supervention of reflex phenomena and a state of ill-health will be instituted.

Notwithstanding the fact that for several years I have given special attention to the immediate repair of all lacerations of the vulva, vagina, and perineum, and frequently the cervix, I observed that this repair work did not leave the woman in anything like the condition she was before labor. I therefore began to study the condition of the pelvic floor of my obstetric patients before and after delivery at different periods and found almost invariably a condition of relaxation. I do not mean to infer that immediate repair work is useless. Quite the contrary. Lacerations of the perineum are fruitful sources of infection, inasmuch as they are constantly exposed to microbic invasion. Lacerations of the cervix, however, occupy a sterile region of the vagina and are therefore much less frequently the source of infection. In some cases it may be possible to unite essential structures, but as a rule suturing is limited to the skin and superficial tissues. A careful search is very rarely made for deep and damaging lacerations. The tissues at this time are often so swollen, edematous, and distorted that it is very difficult or impossible to place the sutures properly. Certainly repair work attempted on a bed without proper assistance, retractors, and a good light is little more than a farce so far as restoring the function of the pelvic floor is concerned. At best such operating simply restores the symmetry of the pudendal aperture unless the sphincter ani is torn, when immediate suture is imperative to prevent fecal incontinence.

In the first place I wish to eliminate the perineum from discussions on the pelvic floor. Anatomists have repeatedly called attention to the dissociation of these two structures. One great trouble with the medical profession today is their eagerness to discover new things, thereby failing to utilize fully information at hand. The pelvic floor proper and the perineal structures have entirely different functions. The pelvic floor is for the support of the superimposed viscera and is for this purpose alone. The perineum is simply a common meeting point for muscular and aponeurotic structures entirely below and external to the pelvic floor and has to do with the mechanism of the closure of the clefts of the visceral outlets, the sphincters.

It is safe to say that the human species is composite, the result of evolutionary processes. The requirements of higher life have necessarily modified anatomic structures to meet the demand thrown upon them. The pelvic floor of the human female is a marked example of this. The upright position has made necessary the entire reconstruction of the plane of muscles closing the pelvic outlet. This plane of muscles and fascia contains clefts, the exit of the alimentary and genitourinary canals. In those animals which habitually assume the horizontal position all the muscular mechanism that is necessary is to prevent the escape of the contents of these canals, except at voluntary intervals. To accomplish this certain muscular bands are thrown around the respective termini, called sphincters; the support of the abdominal viscera being maintained by the ventral abdominal wall. In the human subject it becomes necessary to modify especially the muscular mechanism of the pelvic outlet, so that in addition to the sphincters muscles of support must be supplied. So that we then have in the highly differentiated pelvic floor of the human female two distinct muscular layers, functionally and morphologically different.

Those muscles having to do with sphincteric action are developed from the primitive sphincter cloaca; while those forming the pelvic diaphragm were originally the muscles of the caudal end of the vertebral column, and are developed from the primitive flexors and adductors of the caudal vertebra. In tailed animals it was the business of these muscles to move that appendage. When the upright position was assumed and

¹Read before the Western Surgical and Gynecological Association, at St. Joseph, Mo., December 30, 1902.

tails were no longer necessary, these muscular structures were utilized to furnish support for the superimposed pelvic and abdominal viscera. Hence the levator ani and the pelvic floor.

In considering the myology of the pelvic floor, only those muscles that are actively engaged will be considered. The superficial muscles, the sphincter ani, the constrictor vagina and transversus perinei have nothing to do with pelvic support, and will therefore not be investigated in this discussion.

The pelvic diaphragm is formed by a thin muscular sheet, called as a whole the levator ani. It is composed of four paired muscles—the ischiococcygeus, the iliococcygeus, the pubococcygeus, and the puborectalis. This series of muscles take their origin, roughly speaking, from around the brim of the true pelvis, and are inserted into the sacrum, coccyx, and median tendinous raphe. The pubococcygeus and the puborectalis form the most important constituent element of pelvic support. The pubococcygeus arises from the back of the body of the pubic bone along an oblique line which extends from the lowest limit of the symphysis outward toward the obturator canal, and to a limited extent from the obturator fascia. From this origin the fibers pass back by the urethra, vagina, and rectum, and are inserted by a tendinous expansion to the ventral surface of the lower part of the sacrum and coccyx. The puborectalis, or sphincter recti of Holl, "arises from the back of the lowest part of the symphysis, under cover of the pubococcygeus, from the upper layer of the triangular ligament, and from the pubis immediately below the symphysis. From this origin the fibers pass around the lower rectum, meeting with the fibers from the opposite side, to form a loop or girdle which slings the rectum and vagina up under the pubic bone."

I wish to call particular attention to the fact that fibers of this muscle pass not only around the rectum, but between the vagina and rectum. This is the muscle that receives the major part of the injury sustained during delivery. The process of evolution has radically changed this muscle, even more than its associates. While its influence upon the caudal vertebra has diminished, its influence upon the rectum and vagina has increased. So much so has this been the case that Holl considers that the puborectalis is the best developed of the muscles of the pelvic floor, whereas in the lower animals it is hardly discernible. This muscle keeps the rectum and vagina pulled forward under the pubic bone, so that the anus occupies a position on a line from one tuber ischii to the other, and midway between the tip of the coccyx and the symphysis pubis. This is the position when the puborectalis is intact, but when it is lacerated or has lost its tone, it allows the perineal body to recede and the perineal flexure of the rectum and vagina is lost. The puborectalis forms a complete sling around the rectum and vagina, and by direct continuation of its fibers produces an angulation of these canals about an inch from the skin surface.

If the practice is made of investigating the tonicity of the puborectalis in all vaginal examinations, both before and after parturition, the difference can be readily determined. In women who have not borne children, this muscular band can be felt tense and firm, as it passes along by the side of the vagina just within the introitus. In the majority of cases after delivery there is a condition of relaxation, of flaccidity and loss of tonicity, often with little or no resistance to backward or lateral pressure with the finger until the ligaments and pelvic bones are reached. Breaks in the musculature of the pelvic floor can frequently be felt distinctly. I have observed the physical condition of the muscle and fascia before and after delivery in the same woman, and noted the difference. These observations were systematically made not only immediately, but months after labor and they rarely recover their tone, even in those cases in which I have done the most painstaking immediate repair, with

the woman on the table, in a good light, with anesthesia and ample assistance. This led me to believe that immediate work was not sufficient to restore the pelvic floor to its normal condition. These observations were made not only with the woman lying quietly in bed or on a table, but standing. In fact most of these inquiries were made while the woman was standing unsupported. The erect position brings out the contractile power of the levator ani and the integrity of its fascia, and with the finger within the vagina this muscular band can be studied and any interruptions in its continuity noted. This can be graphically demonstrated by placing a wax phallus in the vagina and asking the woman to contract the pelvic floor and noting the indenture.

My conclusions are: That almost every woman suffers injuries during confinement from which she does not recover, unless she is subjected to a secondary operation for the repair of lacerations of the pelvic floor.

That immediate suture of apparent lacerations does not restore pelvic support in the vast majority of instances.

That from one to two months after labor the woman should be subjected to a thorough examination with reference to the integrity of the pelvic floor. Should indications of unrepaired lacerations exist, as evidenced by vaginal relaxation and prolapse, uterine displacement, etc., an operation for immediate repair should be made before the woman's health has been impaired.

AN INTERESTING CASE OF ENDOCARDITIS WITH FATAL TERMINATION.

BY

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of San Francisco, Cal.

Dr. R. H. C., aged 32, a promising physician of San Francisco, about 17 years ago while fencing with a friend was accidentally thrust through, the foil entering about the third intercostal space two inches to the left of the sternum, and taking its exit at the back about one inch from the spine, about six inches of the foil showing posteriorly. It was considered that the heart was thrust through, and six or eight physicians of San Francisco took an unusual interest in the case. The exact details are not now to be obtained. There was no alarming hemorrhage following the thrust. The temperature ran very high, 105°-107° F., for several weeks during a subsequent attack of septic poisoning. The patient finally recovered. Immediately after the thrust occurred, a very loud roaring systolic cardiac bruit appeared that absolutely disguised all normal sounds. This bruit persisted for the remaining 17 years of his life. During this time he had excellent health and appeared robust and ruddy, weighing of late years about 190 pounds.

During the summer months he usually went hunting in the northern part of California, and after hunting all day would carry a deer on his shoulder into camp. He was also an enthusiast at rowing, and frequently, once or twice a week, would go to Bellvedere in the early morning and row a heavy boat for two or three hours. He often allowed his medical conferees to listen to his heart, and seemed to enjoy the utter surprise depicted upon their faces on hearing the loud roaring systolic bruit in such a robust subject.

About a year ago he became aware that he had a fever and was also losing flesh, in spite of which he continued to feel well and had a good appetite. He placed himself under the care of an able physician for treatment. His fever varied between 102°-104° F., and at the beginning of last summer he had lost about 40 pounds. He concluded to go on a vacation, and went into the north of the State on a camping expedition, which was cut short by a persistent continuation of previous symptoms. He returned home and went to bed. During all this time he was under the care of a prominent physician, besides being carefully examined at various times by six or eight others.

The blood examination showed a normal count and hemoglobin percentage. The urine was normal. The physical examination showed normal organs, with the exception of the heart, but as this bruit was unchanged it was not considered that it was at fault. Several of his near relatives had died of tuberculosis, and after excluding, as was thought, all other diseases, it was pretty much the consensus of opinion that some tuberculous lesion must be the diagnosis. He had no cough, and there were no tubercle bacilli in his sputum or urine. He had a slight enlargement of his liver and spleen late in the disease. One of the best specialists in heart and lungs in San Francisco examined him and thought he detected some consolidation in the apex of one lung. As the loss of flesh persisted and the

fever was practically unabated, it was again decided to try change of climate. Even at this time he felt well and had an excellent appetite.

He was taken to Arizona, and in a few weeks it was reported that, as a result of spending much of his time in the saddle, he was gaining considerable flesh and had otherwise improved. Within a week or 10 days, however, he returned to his home in San Francisco, and died in less than a week.

The autopsy was made by a confrere, and all the important organs were sent to me for microscopic examination. I made sections of the lungs, liver, kidneys, and heart. There were no evidences of tuberculosis in any of them. The kidneys showed degenerative lesions, but only such as would result from the heart lesion presently to be described. The liver showed similar changes. There were no indications to show where the thrust occurred in the heart 17 years ago. The heart as a whole was slightly hypertrophied. The cusps of the pulmonary valves were the seat of very extensive vegetations, being very much contracted and thickened. They must have offered considerable obstruction to the passage of blood into the pulmonary artery, besides allowing regurgitation. There were also smaller vegetations on the mitral, aortic, and tricuspid valves. At the site of the foramen ovale was a very extensive vegetation, presenting an umbilicated appearance, the center of which was necrotic and patulous. A probe could easily pass through, so some exchange of blood undoubtedly took place between the auricles.

I cut out the umbilicated area and made transverse sections through it. The section showed a ragged necrotic center, around which were areas of inflammatory infiltration of small, round cells. Around this were seen the fibers of the heart muscle, the cross striations of which were very much obliterated, as well as the muscle nuclei. There were no cultures taken from the valves, because I did not get the heart until contamination with extraneous germs was probable. The sections of the cusps of the pulmonary semilunar valves showed superficial necrosis, the deeper tissue showing very intense round cell infiltration; in places actual abscess formation was present.

The question that naturally presents itself is, What had the foil thrust to do in producing the loud systolic bruit that persisted for 17 years and the malignant endocarditis that caused death?

As I have said before, the sound of the bruit was apparently no more angry during the febrile period than formerly. Throughout the whole attack up to the last two or three weeks of his life he felt well and had a good appetite. In the "American Textbook of Pathology" it states that in congenital cases of stenosis of the pulmonary orifice defects of the septum are common.

Infant Yearly Deathrate in Chicago Falling.—From the Bulletin of the Chicago Health Department we quote the following: "During the six years of the present administration of the Health Department there have been only 51,046 such deaths. According to the United States census the under 5 years population increased about 30% between 1890 and 1900; so that instead of 51,046 under 5 years deaths in the second period there would—had the earlier deathrate continued—have been 85,083 deaths, or 34,757 more than actually occurred. If this reduced infant and child mortality is to be maintained the quality of the milk-supply must also be maintained. Those who tamper with it by business rules or regulations assume a fearful responsibility, and the public should know where to locate it."

Surgery Versus the Pulpit.—It appears that the surgeon of the future is likely to replace the minister and all the elements of moral suasion for the reform of the wayward. A New York exchange contains the following news from London: One of the patients was a boy of good family who had developed brutal instincts which seemed to be beyond control. He gave his time to the invention of malicious mischief, delighted in killing or wounding, was the terror of the neighborhood in which he lived, and promised to grow up a desperado and criminal. A clever surgeon took him in hand, examined his head with care, located what he considered the seat of the trouble, removed a portion of the skull, and thus relieved the deforming pressure. The change was immediate. The lad forgot his previous tastes and habits and was restored to his parents a normal and lovable boy, the complete antithesis of his former self. The other was a soldier who was injured in a skirmish, and after his discharge for disability became a thief and burglar. His previous character had been unexceptionable, his military record was the best, and the change was naturally attributed to the injury to his head, caused by a blow from the butt of a musket. When he was taken in hand by the surgeons he had about come to the end of a career of crime, being paralyzed on one side and unable to get about except on crutches. A depression in the skull sufficient to bring an abnormal local pressure upon the brain was found and an operation was decided upon, which restored his physical powers as well as his mental and moral faculties. His discharge was secured and he has since lived an industrious and honest life, with no evidence of a disposition to go wrong.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

May 30, 1903. [Vol. XL, No. 22.]

1. Medical Discoveries by the Nonmedical. GEORGE M. GOULD.
2. The Single Cuff Method of Circular Enterorrhaphy: A New Method. O. BEVERLY CAMPBELL.
3. Intestinal Resection, with a Report of Sixteen Cases: Nine with the Murphy Button and Seven with the Suture. JAMES H. DUNN.
4. Report of a Case of Empyema Chronicus. WILLIAM FRICK.
5. The Treatment of Empyema by Continuous Aspiration. WELLER VAN HOOK.
6. Unilateral Disease of the Kidney Simulating Stone. JOSEPH RANSOHOFF.
7. Acute Suppurative Cervical Adenitis of Infancy. THOMAS S. SOUTHWORTH.
8. The Estimation of Urea by Mercuric Nitrate. J. H. LONG.

1.—Medical Discoveries by the Nonmedical.—G. M. Gould calls attention to the therapeutic practices of the lower animals and epitomizes the discoveries of medical facts and anticipations of modern methods by the ancients and by the nonmedical among both the savage and civilized of recent times. We have not yet learned all that the ancients and barbarians and common people about us have to teach. They incite us to keener observation. It is only by the systematizing of modern science, however, that the scattered discoveries of the world become of use to all. [H.M.]

2, 3.—See *American Medicine*, Vol. V, No. 20, p. 774.

4.—See *American Medicine*, Vol. V, No. 22, p. 864.

5.—Treatment of Empyema by Continuous Aspiration.

—W. Van Hook notes the disastrous results sometimes following drainage. The proper material to fill the cavity left is lung, and correct procedure lies in inducing the lung at once to meet the parietal pleura so that the surfaces may quickly heal by granulation. All the methods described are defective as compared with Perthes' plan, which consists in maintaining a pressure less than that of the atmosphere in the pleural cavity so that the lung may be made to more rapidly approach the chest wall. Perthes has devised a special apparatus costing about \$15.00. Van Hook describes an extemporized arrangement provided for less than \$5.00, requiring a Bunsen pump, a garden hose, a three-necked Wolf bottle, a manometer, and tubing to connect the exhaust of the pump with the collecting vessel and the chest cavity. The dressing applied to the chest wall is of heavy rubber dam, bicycle cement being used to seal the tube to the opening in it, and to seal the dam to the chest wall to prevent wrinkling. The edges are fastened with adhesive plaster. The apparatus should be applied soon after draining the chest cavity. [H.M.]

6.—Unilateral Disease of the Kidney Simulating Stone.—J. Ransohoff reports a case of atypical chronic inflammation simulating stone. Detection by sounding is altogether fortuitous. Aside from positive presentment by radiography the signs most relied on are pain, paroxysmal or continuous, and certain changes in the urine. The pain may be simulated by tuberculosis, tumor, hydronephrosis, or by microscopic changes affecting either the secreting, circulatory, or supporting framework. Every one associates hematuria with stone, but in 20 of the author's cases it has been marked by sparse-ness. That in certain cases of chronic nephritis albumin and casts are often absent for months, and both pain and hematuria present, and that it often manifests itself as a unilateral disease, makes it evident that differential diagnosis may be insurmountably difficult. Capsule splitting and section of the kidney will doubtless relieve many cases which simulate stone and which because of the impossibility of making a positive diagnosis are not now subjected to exploratory incision. [H.M.]

7.—See *American Medicine*, Vol. V, No. 20, p. 777.

8.—Estimation of Urea by Mercuric Nitrate.—J. H. Long gives a table calculated by himself in which the amounts of urea corresponding to different volumes of the mercury solution used are stated. The volume of mercury solution to be employed in the calculation is that which remains after subtracting the amounts used by the chlorids, uric acid, ammonia, and creatin. A study of the literature reveals that in the methods in use corrections are still necessary, and that they are not suitable when a rapid and accurate process is required. [H.M.]

Boston Medical and Surgical Journal.

May 23, 1903. [Vol. CXLVIII, No. 22.]

1. The Relation of Chronic Enlargement of the Spleen to Anemia in Infancy. JOHN LOVETT MORSE.
2. The Report of Three Cases in Which Embryos of the Strongyloides Intestinalis Were Found in the Stool: Autopsy of One Case. PHILIP KING BROWN.
3. A Case of Gunshot Wound of the Stomach; Operation; Recovery. HUGH WILLIAMS.

1.—See *American Medicine* report of Congress of American Physicians and Surgeons, Washington, D. C., May 13, 1903.

2.—**Strongyloides Intestinalis.**—P. K. Brown reports three cases, one coming to autopsy. Interest in these cases has been aroused by the reports of Strong and Thayer. One of the patients was an American, the other two were natives of Porto Rico, where this parasite is exceedingly common. The author says that it is not at all certain that these parasites, which bury their heads deep in the mucous membrane of the intestine, are as harmless as we have been led to believe. It is probable that they are true parasites of the host, and not a class that subsist upon the contents of the bowel. Two of the cases were complicated with uncinariasis, and the anemia was exceedingly severe. One of the patients was a laborer, aged 18; another a laborer aged 30; and the other, a man of 65, was an American, pastry cook. Detailed history reports are given of all of the cases. In the case coming to autopsy, neither eggs nor worms were found in the muscularis mucosa, but both were found in considerable numbers in the crypts of Lieberkuhn. The adult parasites that were found were all of exactly the same type, and represented what was taken to be the parthenogenetic mother worm. No adult male worms were found. [A.B.C.]

3.—**Gunshot Wound of the Stomach.**—Hugh Williams reports the case. The patient, a youth of 16, was accidentally shot with a 32-caliber revolver. The ball entered the abdomen 1 inch to the right of the umbilicus and $\frac{1}{2}$ inch below. The patient was taken by ambulance four miles to a hospital. There was no vomiting; shock was not severe. He had to be catheterized for retention of urine, which was normal. Operation was done four hours after the injury was received. The abdomen was practically normal in appearance, without distention, but the lineæ transversæ and semilunares were exaggerated. The ball had passed from right to left, inflicting a wound on the anterior surface of the stomach, which organ it supposedly entered after passing at an angle through its anterior wall. Free gas was in the peritoneal cavity. No fluid, intestinal or gastric content, or blood, was found in the peritoneal cavity. The accident having occurred immediately after a full meal, it appeared that digestion had been arrested, and the stomach was still markedly distended with food. It was feared that this would lead to vomiting, which would seriously interfere with the progress of the case. The wound of the stomach was enlarged to a three-inch incision, the stomach contents evacuated, the wound closed by Lembert sutures, the peritoneal cavity flushed out, and the abdominal wound closed with drainage after the lesser peritoneal cavity had been explored and found normal. The patient made an uneventful recovery. The author is of opinion that the emptying of the stomach at the time of the operation, although it contributed an element of danger, was most probably the important factor in the subsequent favorable progress of the case. [A.D.C.]

Medical Record.

May 30, 1903. [Vol. 63, No. 22.]

1. Primary and Recurrent Mammary Carcinoma Treated by the X-ray. WILLIAM JONES MORTON.
2. The Treatment of Purulent Conjunctivitis. EDGAR S. THOMPSON.
3. Notes on Cases Treated by Venesection. GEORGE PIERCE ANDREWS.
4. On the Active Principle of *Rhus Diversiloba* (Poison Oak). CARL SCHWALBE.
5. Reflex Symptom from Biliary Calculus. G. W. SQUIRES.

1.—**Mammary Cancer Treated by Röntgen Rays.**—William J. Morton says he will soon report a complete list of all his cases treated by the Röntgen rays, favorable and unfavorable. In the present paper he reports some 20 cases in which the growths have disappeared or in which there has at least been much improvement. The more superficial the growth the greater are the chances of cure, and the more recent the

newgrowth the more favorable is the prognosis under Röntgen ray treatment. But the more preponderant the fibrous or scirrhous character the slower the action of the rays. An open ulcer with much secondary septic infection is almost sure to progress unfavorably. In some instances of scirrhous cancer it appears that this method of treatment causes an increased growth of the fibrous tissue, with decrease or degeneration of cancerous infiltration. The author holds that it is justifiable to subject suspected early mammary cancer to Röntgen ray treatment, hoping for a cure, rather than resort to surgical intervention in the first instance. Much investigation and experimentation yet remains to be done before we shall be able to ascribe to the Röntgen rays their proper place in the treatment of cancer. [A.B.C.]

2.—**Purulent Conjunctivitis.**—E. S. Thompson points out the importance of a microscopic examination of the pus as a first step in the treatment, as stronger germicides are indicated in gonorrhœal than other infections, and these should be used at once before the gonococci have penetrated the conjunctiva, since later the eye will probably be lost. The disease varies somewhat, but in the majority of cases is more severe than the worst cases caused by other infections. A 2% solution of silver nitrate should be used on an applicator if the case is seen early, or a 3% or 4% solution two days after infection. When this irritates, causing increased discharge of serum and a tendency to bleed, a 6% solution of protargol may be used. The latter is also indicated when the discharge is caused by the pneumococcus, Koch-Weeks' bacillus, or other pus organisms. This applied once daily will limit an attack of pink eye to a few days. Argyrol, 25%, or silver vitellin, fulfils the same indications as protargol, and is absolutely nonirritating. It is less effective than the nitrate when an astringent as well as germicide is required. Cleansing should be done often enough to keep the eye clean, even if that is every 10 minutes. Ice cloths tend to inhibit growth of organisms. Scarification does good when chemosis is severe. Cauterization of the cornea helps to combat ulceration. When the latter appears hot applications should be used. [H.M.]

3.—**Value of Venesection.**—G. P. Andrews details ten cases in which venesection was done with prompt relief in all but one. They were in the order given: Eclampsia in a young primipara; catarrhal pneumonia in an old man of 70, with degenerated bloodvessels and heart; eclampsia in a woman of 32; asthma in a frail man of 60; epileptiform seizures in a plethoric man of 62, repeatedly relieved by this means; dyspneic attacks occurring every three or four weeks in an old man of 70, who had sought and found relief in this way periodically since 25 years of age; pulmonary hemorrhage in a robust seaman of 32; severe migraine at menstrual period at each menstrual epoch; eclampsia in a primipara of 23 (fatal); eclampsia in a woman of 23 at second labor. In all the above cases except one relief followed the flow of blood promptly; in several of them when other means had failed. In each case bleeding was curative, in the sense that it tided over an emergency. Its action is first upon the volume of the circulation; second, upon the nerve centers, and is in the nature of shock; third, in certain instances, when the patient is conscious, the effect of expectancy upon the imagination is marked and benign, as in Cases IV, VI, and VIII. No notable ill effect or depression dependent on the loss of blood was noticed at any time. [A.B.C.]

4.—**Active Principle of *Rhus Diversiloba*.**—C. Schwalbe reviews reported cases of rhus poisoning whose histories show that it must be a solid particle, and not gaseous matter which causes the lesion. There are lactiferous vessels which contain the poisonous matter, and upon these vessels grow hairs loaded with the poisonous oil. These are carried by the wind and penetrate into the openings of the sudoriferous and sebaceous glands. They are found on the plant even in winter. Persons perspiring easily are more liable to the affection. Carbonate of potash, concentrated lye in 0.1% to 0.5% solution several times daily is sufficient to protect exposed persons from bad effects. [H.M.]

5.—**Reflex Symptom from Biliary Calculus.**—G. W. Squires reports a case in which occurred stiffness, tenderness, and then pain in the heels directly over the tendo-Achillis,

affecting the gait, and in the morning making it difficult to move around. A herpetic rash appeared over the affected area, causing paroxysms of pain of distressing intensity. This lasted for 18 months until a calculus the size of a pigeon's egg with four sharp prongs was passed, when the pain and eruption subsided almost immediately, and an indigestion of 15 years' duration disappeared. [H.M.]

New York Medical Journal.

May 23, 1903. [Vol. LXXVII, No. 21.]

1. In the Hemisphere of X-ray Activity. J. RUDIS JICINSKY.
2. The Ureteral Pelvis. BYRON ROBINSON.
3. Eclampsia: Its Prevention and Treatment. EDWARD A. AYERS.
4. Atony of the Duodenum Diagnosed and Corroborated by Operation. MARK I. KNAPP.
5. A Few Differential Diagnoses in Connection with the Exanthemas. WILLIAM L. SOMERSET.

2.—The Ureteral Pelvis.—Byron Robinson describes in detail the minute anatomy, forms and relations of the ureteral pelvis. Bilateral pelvic symmetry arises rarely. The first, prime, and most frequent form is that which consists of a triangular voluminous pouch lying partly internally and partly externally to the hilum renale, and divides mainly into a larger distal major calix and a smaller proximal major calix. A second form of the ureteral pelvis is where the ureter divides dichotomously and practically no ureteral pelvis exists or only a small one. A third form of ureteral pelvis might be considered as a half pelvis. It may happen that only the distal major calix of a dichotomously divided ureter enters into the formation of a half ureteral pelvis. In such a case the proximal major calix passes directly into the ureter, and the pole of the kidney contributing to form the half pelvis is the larger. [C.A.O.]

3.—Eclampsia.—E. A. Ayers maintains that the great majority of the cases of eclampsia can be prevented. The bowels must be kept properly emptied. This not only sustains the eliminative function, but permits the uterus gradually to occupy abdominal space with less interference to the daily work of the kidneys, ureters, and heart. Cascara, either alone as the fluid extract, or in tablet with aloin and podophyllin, is very satisfactory; and this should be varied with the use of calomel once a week, more surely to keep the liver in proper condition. The rule for every pregnant woman should be, to be regular in meal hours, moderate in the use of meats, exclusion of the more indigestible vegetables, and of all wines, and avoidance of excessive quantity at any time. Whenever the amount of urine secreted or excreted, or of urea excreted, falls below normal, or albumin or casts are present, the patient should be treated by diet, laxative and diuretic, to restore to normal the urinary function. In the treatment of cases of eclampsia each case must be a law unto itself. Whenever feasible, Ayers aims to secure such degree of elimination of toxins promptly as will put a temporary check upon the convulsions, and then to test whether he can remove the evidence of insufficient elimination by usual methods, and so, if successful, permit the pregnancy to go to term. If the effect which the convulsions have had is not marked, the mind being clear, the pulse under 100, and the convulsions not occurring oftener than every hour or two, he favors giving a saline cathartic by the mouth and a high saline solution in the bowel. Hot packs, water-bags, wet blankets and sheets must be used with reserve. If the case presents the highly nervous type, restlessness, tossing, and mental activity, he favors the administration of 20 to 30 grains of chloral per rectum, seeking not narcosis, but removal of nerve tension; nitroglycerin, $\frac{1}{10}$ of a grain, should be given at the start, and repeated as needed. Oxygen and injection of saline infusion into the subcutaneous tissue are indicated. It is useless to try to select a particular anticonvulsive and use it, for there is no disease that calls more for special selection than eclampsia. If labor is going to continue whether we can check the convulsions or not it is best to hasten delivery. [C.A.O.]

4.—Atony of the Duodenum.—The case reported by M. I. Knapp is that of a woman of 43, whose illness began three years previously with attacks of severe abdominal pain, cramp-like, often severe and cutting in character and more severe on the left side. At first there was an interval of several weeks between the attacks, but later they became of almost daily

occurrence. She often vomited during the attacks, which were more apt to occur after eating. She was troubled with constipation, had lost weight, and there was increased abdominal distention. Below and to the left of the umbilicus an indistinct mass could be felt. A malignant growth was suspected. Upon opening the abdomen a constricting infiltration of the jejunum was found just distal to a much distended coil. Fifteen inches of the intestine was removed and recovery followed. There was entire absence of cancerous lesions in the growth. [C.A.O.]

5.—Differential Diagnosis of Exanthemas.—W. L. Somerset reports some cases in each of which there existed, at some time in its history, a justifiable difference of opinion concerning the diagnosis. The first was that of malignant variola, which might easily have been mistaken for malignant scarlet fever. The second case reported is that of erythema scarlatini-forme, in which scarlet fever had been suspected. The appearance of the face of a third patient with measles was unpleasantly similar to variola. In another case the diagnosis of rubeola was made first, later the child was thought to have scarlatina, but it soon developed into a confluent case of rubella. In the fifth case an atypical variola might easily have been mistaken for varicella. The sixth case was thought to be either one of quinin poisoning or ptomain poisoning. [C.A.O.]

Medical News.

May 30, 1903. [Vol. 82, No. 22.]

1. Professional Discretion: The Medical Secret. PRINCE A. MORROW.
2. A Report Upon the Physics and Therapeutic Value of Cathode and Ultraviolet Rays; with Reference to the Electromagnetic Theory of Light: An Attempt to More Clearly Define the General Character of These Recently Introduced Agents in the Treatment of Cancer. ROSWELL PARK.
3. The Cure of Anal Fissure Without Operation: Report of Eight Cases. S. LEWIS.
4. The Therapeutic Use of Suprarenal Gland in Certain Diseases of the Skin. MARTIN F. ENGMAN and WM. P. LOEH.
5. On Simplicity in the Operation for Laceration of the Cervix Uteri. LOUIS KOLLIPINSKI.
6. Tuberculosis of the Larynx and Aspiration Tuberculosis of the Lungs Following Dermatitis Blastomycetes. ORTO T. FREER.

2.—Physics and Therapeutic Value of Cathode and Ultraviolet Rays.—Roswell Park, in the space of a magazine article, gives the most exhaustive and philosophic discussion on the origin, nature, and therapeutic value of cathode and ultraviolet rays which has come within our observation. The paper should be read in full by all those interested in the subject. As to the therapeutic value he says that is as yet undetermined; it is yet too early to report cases. This much, however, has been determined with reference to the rays in question: 1. They afford methods of treatment for extremely newgrowths of limited area and superficial character which, while not exactly certain, are extremely promising. 2. They not only cause no pain, but tend to relieve pain, both superficial and deep, in a most pleasing and satisfactory way. 3. They are adapted to cases which can hardly be submitted to any other method of treatment, and they afford more hope in delayed or inoperable cases than does any other method of treatment. 4. It will be found that the odor of putrefaction may often be suppressed by their use and the putrefying process itself checked. 5. Burns and intense dermatitis, so frequently noted when the treatment first came into vogue, may now be almost certainly avoided. 6. More than this, they afford a supplementary method of treatment after operation, by which the benefits of the same may be enhanced and enlarged. 7. It is not necessary to intermit such work as the patient may be engaged in, in order to carry out the x-ray or phototherapeutic method of treatment. [A.B.C.]

3.—Cure Anal Fissure Without Operation.—S. Lewis reports eight cases, four of which were chronic, and all suffering from agonizing pain after stool. Treatment consisted in applying to the fissure and surrounding area a saturated solution of potassium permanganate, and using a suppository containing sulphathyolate of bismuth. Cocainization for 10 to 15 minutes with a 6% solution applied on a pledget of cotton is often necessary before examination and application of the permanganate can be made. Smarting pain lasting two or three minutes usually follows the application. Severe pain and tenesmus he has not observed following the use of suppositories in these cases. The suppository used is sold under the

name of anusol. Aside from its astringent and soothing effect it secures a pultaceous stool daily. It should be applied night and morning. The second treatment is as the first, except the cocain is omitted. After the third treatment the suppositories are reduced to one daily. The author is highly gratified at the results secured, and holds that this treatment should replace many operations. [A.B.C.]

4.—Suprarenal Gland in Skin Diseases.—M. F. Engman and W. P. Loth have found published reports of the use of the gland only in two articles, it having been used in acne rosacea and pruritus vulvæ. The diseases in which it is effective are those produced probably by some toxic disturbance, exhibited by a derangement of the vessels or the nerves controlling them. They have used it with success in general pruritus, chronic urticaria, lichen urticatus, and morphea. They use the dried extract in powdered form. Between 4 and 12 years 1 grain is the initial dose gradually increased to 3 grains three times daily. In adults 2 grains increased to 6 grains may be used. It should not be taken on an empty stomach. After long-continued doses in certain individuals tremor of the extremities occur showing a cumulative effect on the nervous system, disappearing when the drug is stopped. [H.M.]

5.—Laceration of the cervix uteri, according to L. Koliński, is the most common cause of postpartum hemorrhage, abortion, miscarriage, and cancer. Admitting the necessity of its repair, the writer emphasizes the simplicity of the operation even for old cervical tears. The normal sensibility of the cervix uteri is probably not greater than that of the gums, and anesthesia, either general or local, is unnecessary. The operation consists in denudation, apposition and retention of approximated surfaces. The torn lips are denuded on both sides with scissors, cutting away but little tissue. The prepared surfaces should be raw and bleeding. From two to three silkwormgut sutures are inserted on each side, and the wound having been irrigated and dusted with iodoform are securely tied and cut short. An antiseptic tampon is placed against the neck of the uterus. This is removed in a day or two and voluminous boric acid douches are practised until the removal of the sutures in three weeks. In a week at the latest the patient is allowed to rise daily. The writer has followed this method in more than a dozen cases with satisfactory results, and he wishes to give the proper subjects of this operation a rational idea of its importance, its freedom from danger and from pain, and its simplicity, such that it can be done at home without anesthesia and with little expense or loss of time. [w.k.]

6.—Tuberculosis Following Dermatitis Blastomyces.—O. T. Freer finds that this has occurred so infrequently that the sequence may be merely a coincidence. He reports a case in which the side of the larynx affected corresponded to the side of the face attacked by blastomycetic ulceration, the tubercle bacilli having probably effected entrance here by means of the lymphatics. The blastomycetic organism was not found in the tissues of the larynx or other affected parts of the body. [H.M.]

Philadelphia Medical Journal.

May 30, 1903. [Vol. XI, No. 22.]

1. The Treatment of Fracture of the Neck of the Femur at Bellevue, St. Vincent's, and New York Hospitals. JOSEPH B. BISSELL.
2. A Case of Ulcerative Endocarditis Involving the Pulmonary Valve and Causing Perforation of the Ventricular Septum, Gangrene of the Nose and Ears, Multiple Infarcts in the Kidneys, etc. HENRY M. FISHER.
3. A Report of a Case of Malignant Gonorrhœal Endocarditis, with Specimens. C. J. HABHEGGER.
4. Preliminary Report of an Operation for Abdominal Pregnancy of Twenty-one Months' Duration. CHARLES P. NOBLE.
5. Uterine Fibroma Near the Menopause. GEORGE ERETY SHOEMAKER.

1.—Treatment of Fracture of the Neck of the Femur.—J. B. Bissell details the results of the treatment of a series of 316 cases of fracture of the neck of the femur in the Bellevue, St. Vincent's, and New York Hospitals. In none of these cases was an operation performed, either to unite the fractured surfaces, to remove a detached head, or to carry on or assist in any manner the treatment. It seems that in all three of the hospitals the patients were kept in bed either longer than was necessary or not long enough. If the broken neck would not unite at the end of six weeks under treatment while confined

to bed it is hard to be convinced of the possibility of its uniting at the end of eight or nine weeks, especially as "splints" do not, in most cases, prevent motion between the fragments and do not secure perfect coaptation, neglecting in this way the two essentials—immobilization and firm coaptation—without which a "splint" is not only useless, but of positive harm. The experience of the writer has led him to a much more optimistic view than is usually held, and he would suggest that the best treatment for this injury would be an open operation, with the pegging or wiring of the fragments, or the application of whatever other method or means may be necessary to retain them in a correct position until bony repair takes place. [F.C.H.]

2.—Ulcerative Endocarditis.—Henry M. Fisher reports the case of an Italian barber of 20 who suffered from an ulcerative endocarditis involving the pulmonary valve and causing perforation of the ventricular septum, gangrene of the nose and ears, and multiple infarcts in the kidneys, etc. The patient had a severe and distressing cough, probably due to pressure of the vegetations on some of the cardiac filaments of the pneumogastric nerve, as no evidence of disease of the lungs could be detected. At no time did the patient have any fever. Considering the gravity of the obstruction, the maintenance of a fairly slow, regular pulse of moderately good volume during the whole course of his illness appears to be very curious. [F.C.H.]

3.—Malignant Gonorrhœal Endocarditis.—C. J. Habegger reports the case of a painter of 27 suffering from an endocarditis, supposed to be gonorrhœal in origin, although this had not been proved by cultures, but assumed for the following reasons: The disease occurred during the fourth or fifth week of a typical gonorrhœa and at a time when the gonococci had migrated to the posterior urethra, as shown by the complicating epididymitis. Cultures from the various organs on ordinary media remained sterile. The diagnosis of septic endocarditis was practically made at the first examination of the patient. In the differential diagnosis malaria with an old endocarditis was excluded by the blood examination and the exhibition of quinin. One interesting feature which was of considerable moment in the diagnosis, showing as it did an acute process involving the heart, was the rapid changes that took place in the size of the heart, the character of the murmur, sounds, pulsation, and pulse. These changes could almost be made out from day to day and depended upon the damage done the heart valve by the vegetations and ulceration. [F.C.H.]

4.—Preliminary Report of an Operation for Abdominal Pregnancy of Twenty-one Months' Duration.—C. P. Noble reports the operation on a case of abdominal pregnancy in a nullipara of 30. The most interesting point in connection with the operation was the method adopted to avoid hemorrhage; this was accomplished by ligating the ovarian and uterine vessels; then the fetus and sac were elevated out of the pelvis, and the lower end of the mass turned upward, in order to gain access to the mesenteric vessels from below and behind. The patient made a good convalescence. The fetus was in an excellent state of preservation. [F.C.H.]

5.—Uterine Fibroma Near the Menopause.—G. E. Shoemaker believes that among the medical heresies which are fast fading away is the idea once popular that fibromas of the uterus are likely to diminish in size or to cease to bleed and to grow about the time of the menopause. He details three cases illustrative of the onset of severe symptoms after the age of 44. [F.C.H.]

CLINICAL MEDICINE

DAVID RIESMAN A. O. J. KELLY

EDITORIAL COMMENT

The Unsolved Problem of Cancer.—Modern medical research, though continually winning brilliant victories in the domain of etiology and prevention of disease, must still acknowledge defeat in the campaign against cancer. New theories regarding its origin are advanced only to be proved untenable or to remain, at best, as theories only. The most hopeful thing about the whole matter is the persistence with which investigations, and theorizing also, are being prosecuted.

Persistence eventually wins. Among the more recent contributions to the subject is that of Jonas on cancer and immunity in which he inclines strongly to the view that cancer has a chemic basis. The *Practitioner* for May, which comes in the form of a special number devoted to "Malignant Diseases of the Mouth," is replete with suggestive statements regarding the origin and treatment of cancer. The editorial pages are devoted entirely to an excellent review of the subject. It is there stated that the apparently established facts regarding cancer may be brought into line by supposing that the necessary basis of tumor formation is the separation, in some manner, of certain cells of the body from their normal connection with neighboring cells. This separation may be the result of maldevelopment, momentary trauma, or inflammatory changes. Cells thus cut off from their organic connection may develop in an entirely irregular manner, seemingly because of their lack of a controlling force. The possibility that the influence of the nervous system is this absent factor is suggested by clinical evidence. The strong probability of cancer houses and cancer villages is set forth by one of the contributors to the above mentioned journal. Another calls attention to the increase of cancer in Ireland which in 1891 had a cancer deathrate of 4.6 per 10,000 of population. In 1897 the rate was 5.8 and this steadily increased to 6.5 in 1901. An increase is also noted in other countries.

Passing from this rather gloomy consideration of the etiology and increase of cancer what is there new in treatment? Barring the x-ray, which has a distinct but not as yet definitely determined therapeutic value in certain cases, the surgeon holds out but one hope of lowered mortality—earlier diagnosis and operation. This is the battle-cry when discussing cancer of the breast, the tongue, the stomach, the rectum, the uterus, in fact cancer of any part of the body that can be reached by modern surgery. Adherence to this principal means more exploratory operations in doubtful cases, but in the light of our present knowledge of cancer they are justified, we had almost said demanded. This sentiment was voiced recently at a notable meeting of the Philadelphia Academy of Surgery when early exploratory operation in supposed but doubtful cases of gastric carcinoma was strongly urged by authoritative men. One writer in the *Practitioner* speaks of operation during the precancerous stage of leukoplakia of the tongue. Another mentions the responsibility of dentists as regards the early recognition of malignant disease of the mouth. A recent article elsewhere calls attention to the probability of cystic involution being a precancerous condition of the mammary gland. This, then, is the present trend of surgery, to operate upon incipient cancer, to even anticipate it by removing conditions that have been known in other persons to undergo cancerous transformation. And in his effort to grapple early with this dread disease the surgeon should be aided loyally by the physician. The difference between early and late diagnosis means to the patient the difference between life and death.

REVIEW OF LITERATURE

Diagnosis of Catarrhal Pyelitis.—The diagnosis of this affection has been and still continues to be very difficult, owing to certain anatomic, physiologic, and clinical peculiarities. However, a diagnosis is possible, according to A. P. Fawitzky and W. F. Orloffsky,¹ the contrary opinion of numerous authorities notwithstanding. The cardinal symptoms or signs are: Pain in the region of the affected kidney, spontaneous and elicited by means of bimanual palpation and by percussion; the occurrence of temporary exacerbations which often run a typical course; presence of abundant mucus in the urine, its low specific gravity, and polyuria. Occasionally blood or pus may be present in the urine, but this is not a sufficiently frequent finding to be of negative diagnostic importance. The

exacerbations just mentioned are characterized by fever, depression, nausea or vomiting, intestinal derangements, and other symptoms which may closely simulate typhoid fever. The differential diagnosis of catarrhal pyelitis requires the exclusion of numerous conditions, such as lumbago, localized peritonitis, gastralgia, intestinal catarrh, nephritis, paranephritis, malignant tumors of the kidney, and certain gynecologic inflammations. The authors illustrated all these points on a series of 14 cases selected from an immense clinical material. [L.J.]

Asphyxia Due to Lumbricoid Worms Obstructing the Larynx.—Wagner¹ reports the case of a boy of 8, who during convalescence from scarlet fever was suddenly taken with violent abdominal colic and slight abdominal distention, but no other threatening symptoms were present. Opium quieted the pain and laxatives brought to light a number of ascarides. He passed 26 more during the next two weeks; another was taken from right nostril after producing an inflammation of nose and conjunctiva. A week later two were found in his vomitus and the same day he was found in a state of partial asphyxiation, from which he did not recover. The autopsy showed the cause of death to be impaction of lumbricoids in the upper part of esophagus, shutting off the larynx. The lower part of esophagus and stomach literally swarmed with worms. [E.L.]

Illuminating Gas Poisoning.—A very practical and valuable contribution to this subject is furnished by P. M. Pilcher,² who reports 25 cases with a thorough analysis of types and a discussion of treatment. The deaths in New York City from this cause show a rather remarkable increase, being 90 in 1898, 102 in 1899, 136 in 1900, 156 in 1901. The condition is considered from its clinical aspect entirely. Cases belong to one of three types: (1) Mild cases; (2) profound cases; (3) cases in which edema of the lungs has already developed. The following points are to be noted in the profound cases: Changes in the blood, exhaustion of nerve centers, loss of muscular tone, general vascular paresis, marked tendency to develop edema of the lungs, development of pneumonia, inability of the patient to take food. Treatment must be directed against these factors. Among the points emphasized is that oxygen, to be of value, must be administered pure, through a cone or similar appliance and not simply by means of a nozzle thrust into a nostril or the mouth of the patient. A copious infusion of salt solution should be given. This should be reinforced in severe cases by a direct blood transfusion. In one case detailed, the salt solution gave only temporary benefit, while the effect of a direct blood transfusion was very marked and lasting. This procedure is not dangerous if carefully practised by one experienced in the technic of intravenous infusion. [A.G.E.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

REVIEW OF LITERATURE

Operative Treatment of Cirrhosis of the Liver.—Talma's operation, the suturing of the omentum to the anterior abdominal wall, has been tried by Lanz,³ who has been able to collect about 60 cases with 24 cures. He reports two cases of his own. The first concerned a woman of 54, who had marked ascites, which required frequent tapping, reaccumulating more and more quickly in every instance. At the operation 15 liters of fluid were evacuated. The liver was found hard, irregular, its surface granular. A tumor of the ovary, which was found on microscopic examination to be a strumous growth, was removed. The parietal peritoneum was rubbed dry; omentum and peritoneum were sewn to rectus muscle. Three months later there was no ascites, the patient feeling perfectly well. The second patient, a man of 35, had had ascites for four years, which gradually became very marked. Under local anesthesia a small incision was made, the peritoneum punctured, and 20 liters of fluid removed. The peritoneum was opened and the omentum sutured to the peritoneum with two sets of sutures. The result of this case is not known as yet, as

¹ Deutsche medicinische Wochenschrift, December 4, 1902.

² Brooklyn Medical Journal, May, 1903.

³ Correspondenzblatt für Schweizer Aerzte, 1902, September 15.

¹ Russki Vrach, February 22 and March 1, 1903.

but two weeks have passed since the operation, Lanz thinks so well of the operation that he expresses his preference to performing epiploxy at an early stage of the disease, instead of waiting, as has been the custom, until it is the last refuge. [E.L.]

Narcotile, a New Anesthetic.—I. Plasencia¹ reports on this anesthetic, which is an ethyl compound; was first prepared by Zenqué in Paris. It was introduced into London in 1901, and was employed in various hospitals and at the dental school. It is administered by means of a mask, such as that of Hirschler, which is bell-shaped, made of celluloid, and fits over nose and mouth. The anesthetic is administered through valves in the smaller end. Patients are anesthetized in from three to four minutes. It is employed only for brief narcosis. If it is used first and then followed by ether or chloroform, narcosis is more rapid, and less chloroform is necessary. The author has used it in five cases, and has had no accidents, but has obtained rapid anesthesia; the period of excitation is reduced and a smaller quantity of chloroform than usual is required. [G.C.D.]

Idiopathic Dilation of the Esophagus.—R. Sievers² reports the case of a man who had a peculiar difficulty in swallowing, dating back to earliest childhood. The food would evidently accumulate in the esophagus, causing an oppressively painful sensation in the chest. This could only be relieved by pressing the food into the stomach, to accomplish which extraordinary efforts were necessary. Various methods of examination showed that the dilation was situated at the lower end of the esophagus, and had a capacity of 1 liter (2 pints). It was not a diverticulum, but was a spindle-formed enlargement. The sac had no digestive powers. The stomach was normal. There was no indication of tumor or aneurysm causing the obstruction. Spasm of the cardia was excluded by the non-intermittent character of the condition, and the total absence of any evidences of nervous disorder to account for the spasm. The only possible explanation seems to be that of congenital malformation. [B.K.]

Acquired Diaphragmatic Hernia.—F. Luksch³ reports a case of acquired diaphragmatic hernia in a 75-year-old woman, who for some time had suffered from an umbilical hernia. The latter became incarcerated and was relieved by operation. Several days later the patient died suddenly. Autopsy showed the presence of a hernia in the right half of the diaphragm. The latter had bulged upward and formed a sac about twice the size of a fist. It was lined with peritoneum and contained the ascending colon. Luksch considers this a rare condition and one that occurs in very old people. The author recognizes two varieties of diaphragmatic hernia. In one there is a congenital defect of the musculature of the diaphragm, and in the other the structure of the diaphragm is not injured, the hernia being caused by intraabdominal pressure. [W.E.R.]

Cancer of the Lips.—In a large experience Sir Thornley Stoker⁴ has not found evidence to show that epithelioma of the lips is due to an inherited disposition, but he states positively that the use of the pipe is the exciting cause of lip cancer in almost every case. Irritation by faulty teeth is a factor to be considered, but it is doubtful if syphilis is of importance. In over 350 cases only 3 were females and they were assiduous smokers. In the diagnosis of cancer of the lip only two conditions can be confounded with it—sarcoma and a syphilitic sore. Surgical treatment is much the same as during the past few decades. One great lesson has been learned, the propriety of the disuse of caustics and pastes of all kinds. Early operation is simple and successful and rarely followed by recurrence. If accompanying disease of the jaw and its soft coverings be extensive operation is best left undone. Lymphatic involvement alone should not prevent operation. As to the method of operating Stoker strongly advises that all intricate cutting and elaborate movement of flaps should as far as possible be avoided and the operation, however extensive, made as simple as may be. The more elaborately cosmetic the operation the more likelihood there is of recurrence. [A.G.E.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

EDITORIAL COMMENT

Nitroglycerin in Dysmenorrhea.—The presence of painful menstruation indicates the necessity for careful physical examination to ascertain its cause. These causes are varied. Any malposition of the uterus or its appendages, a stenosis of its canal, or any inflammatory condition along the genital tract, may be the causative factor of dysmenorrhea. The position of the pain and its relation to the flow of blood afford material aid in diagnosis; but very frequently the gynecologist finds that severe dysmenorrhea occurs without any demonstrable pathologic lesion in any part of the genital apparatus, and often this so-called neuralgia or spasmodic dysmenorrhea is most difficult to treat. As a rule it is unwise and irrational to mask the symptoms by giving opiates, although it may be necessary during a severe paroxysm; but the satisfactory results which we have obtained by the use of nitroglycerin lead us to emphasize its value for the relief of this condition. By detailing a typical case its range of usefulness may be indicated. The patient is usually a nulliparous woman, of sedentary occupation, often anemic, who just a few hours prior to the establishment of the flow has marked vasomotor constriction as shown by facial pallor, blueness of the lip, coldness of extremities and a sense of pelvic engorgement. By the administration of $\frac{1}{100}$ grain of nitroglycerin every three or four hours until the flow is satisfactorily established, the physician may often relieve his patient in a thoroughly rational manner without resorting to opiates or other anodynes. Be it understood that it is only when clear indications exist for vasomotor dilation that this remedy will alleviate. Other cases in which cervical angulation or stenosis is present are best treated by rapid dilation under anesthesia; or if due to malposition or diseased appendages, appropriate surgical procedure must be employed.

REVIEW OF LITERATURE

Laryngeal Tuberculosis During Pregnancy.—Loehner¹ has observed 5 cases of pregnancy complicated by laryngeal tuberculosis. He believes the condition to be more common than is usually supposed, believing in fact that pregnancy in a tuberculous woman predisposes her to laryngeal tuberculosis, and even in healthy pregnant women the larynx is more likely to be the starting point of the disease than any other organ. The slightest hoarseness during pregnancy should be followed by a most careful examination of the larynx, and if a diagnosis cannot be made, this should be repeated. On account of the very fatal prognosis to mother and child which is accorded the disease by all observers the author recommends the prevention of marriage of tuberculous people, the prevention of conception after marriage, the proper diagnosis of laryngeal disturbances during pregnancy, the removal to the most favorable surroundings if tuberculous laryngitis is diagnosed. Of his patients the first was delivered prematurely; mother and child died about the fourteenth day. The second patient died 1½ months after delivery, the child being apparently in the best of health. Both these patients were apparently very well prior to pregnancy, the larynx was the seat of primary infection, followed shortly after by the lungs. The other three patients had pulmonary tuberculosis and developed laryngeal disease during pregnancy; of these three the mothers and two of the children died. [E.L.]

Hematosalpinx Due to Tubal Pregnancy Complicated by Twisted Pedicle.—T. J. McCann² quotes the only case of this kind found in literature reported by Martin, and then adds a second from his own practice. In 1898 a woman, aged 34, was cured for purulent uterine discharge, which ceased with great improvement in health. In 1900 she was seized with pain in the kidney region, which was relieved by hot application.

¹ Münchener medicinische Wochenschrift, February 24, 1903.

² Lancet, May 9, 1903.

¹ Revista Medica Cubana, November 15, 1902.

² Zeitschrift für klin. Med., Bd. xlix, p. 45.

³ Prager medicinische Wochenschrift.

⁴ The Practitioner, May, 1903.

There occurred in 1901 a similar attack and a third early in 1902, at which time she sought medical advice and the trouble, which was supposed to be renal colic, soon subsided. The final attack, a month later, was accompanied by a rise in temperature, and other symptoms of local peritonitis. McCann was called in by the attending physician and the examination under ether showed a smooth, round swelling in the right posterior quarter of the pelvis. The abdomen was opened, adhesions broken up, revealing a tumor of the tube with a pedicle twisted three times. A ligature was applied below the twist and the tumor removed. The convalescence was rapid and uneventful and the patient has been absolutely well ever since. The dilated tube contained blood clots and dark fluid blood. A section of the tubal wall showed chorionic villi infiltrated with blood. The tube was closed at the fimbriated extremity. [w.k.]

Management of Brow-presentations.—Having observed the tendency of brow-presentations to become face-presentations in nearly one-fifth of all cases, G. A. Solowjew¹ recommends a method of imitating nature in this respect. No time should be lost waiting for the brow-presentation to change, but the head should be extended further by means of a finger introduced into the child's mouth. This extension must be maintained until the uterine contractions are able to do the work of the finger. Three cases were thus managed by the author with success, only one requiring the additional aid of forceps. [L.J.]

Complete Nephroureterectomy.—J. Wesley Bovée² defines this term as the complete removal of kidney and ureter at one attempt. It may be called an American operation, since the first four were performed by American surgeons, Kelly probably doing the first in December, 1895. Of the 17 cases on record, only 2 were done outside the United States. But 4 of these were males and only 2 ended fatally. Tuberculosis of kidney and ureter was the indication in 14 of these cases. Complete nephroureterectomy may be done by the extraperitoneal and the transperitoneal routes. Bovée seems to prefer the loin extraperitoneal with a vaginal incision to remove the lower part of the ureter, and thinks it best to begin with the vaginal incision. He gives a full history of his second case, with the technic of the operation and its results. In tuberculosis of the kidney and ureter the strictest care to prevent contamination of normal structures is necessary. That virulent organisms other than the bacillus of tuberculosis may be in the pus should be remembered. It is well to remove the kidney and ureter *en masse* when possible, liberating the kidney first, care being taken that leakage from the cut end of the ureter does not occur. In favorable cases, if thought advisable, the ureter may be divided between clamps at any point where distention is not marked. Whether pus be present or not drainage should be employed, as not to do so is to invite at least the accumulation of a large amount of serum in the extraperitoneal space made in the operation. [w.k.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

REVIEW OF LITERATURE

Old Methods of Treatment Which Are Not Obsolete.—Syers³ deprecates the displacement by some of the so-called modern treatments of older and better modes of combating disease. An example is found in the antiseptic treatment of typhoid fever and the use of antipyretics in this disease. The extremely vigorous efforts sometimes made to reduce the temperature in typhoid fever, as a rule, do more harm than good. In insomnia, which is so frequent a symptom of this disease, antipyretic measures may be very harmful. He believes one of the most useful drugs in enteric fever is opium, especially in those cases in which there is a low muttering tendency to delirium. He believes that the systematic use of opium by quieting the nervous system is most beneficial. The prejudice against opium in pneumonia is unjustified. In asthenic pneumonia

with muttering delirium and insomnia, the drug is capable of great good. Syers also places faith in the old-fashioned treatment of appendicitis, reserving surgical intervention only for very violent cases. He avoids purgatives, restricts the diet, and gives opium freely. He does not find opium counterindicated as is usually believed in cases of chronic nephritis. In the latter stages of chronic kidney lesions, when insomnia becomes a marked symptom, he recommends the early employment of morphin as one of the best hypnotics in this condition. [H.C.W.]

Urosin.—Lang¹ says that Weiss has shown that the value of fruit in gouty conditions depends upon the chinic acid which they contain. This by uniting with glycochol to form hippuric acid prevents the formation of uric acid. Chinic acid itself is but slightly soluble and strongly acid. To overcome these objections Weiss recommends the soluble lithium salt of this acid, which is sold under the name urosin. Urosin has been found useful in both typical and atypical gout, also in the chronic gout of lead-poisoning. In the typical gout it has been useful for the purpose of shortening the attacks and of preventing them. It may be administered in the form of tablets in dose of 3 to 5 drams (45 to 75 grains) per day; an effervescent preparation of the salt is also obtainable. [H.C.W.]

The Climatotherapy of Functional Neuroses.—Heilighenthal² says that while there is no doubt that a mere change is often beneficial in neurasthenia and similar functional disorders, it is necessary in advising the change to consider where the patient is likely to improve most rapidly. The first point in determining this is the patient's personal likes; to some the sea is restful, to others it is wearying. Neither mountains nor seashore exercise any specific influence. If a mountain resort is decided on it must not be too high, on account of the severe disturbances, especially sleeplessness, occurring during the acclimatization; the limit may be put at about 1,000 meters (3,000 feet). Moderate altitudes, Heilighenthal believes, conduce to sleep. To the uses of baths, as at health resorts, Heilighenthal does not ascribe a great deal of importance. Indifferent warm baths are sometimes useful as sedatives, while CO₂ baths and brine baths are stimulating, the brine being preferable. In those who are strong-enough to stand it ocean baths exercise frequently a valuable tonic action. This effect depends on a combination of the low temperature, the salt contents, and the mechanic influence of the waves. [H.C.W.]

The Effect of Mud-baths on the Blood-pressure.—Loebel³ has made some studies with Gärtner's tonometer on the changes in blood-pressure brought about by mud-baths. He finds that there is during the bath an almost uniform tendency to fall of pressure, but this fall is only moderate in baths below 42° C. In baths 38° C. to 39° C. there was as an after effect a cumulative fall. Temperatures below were without any constant secondary action, while after higher temperatures there was usually a rise. The pulse-rate was lessened by 20-minute baths if the temperature was below 39°; higher temperatures were irregular in their action on pulse-rate. [H.C.W.]

Icthalbin as an Intestinal Antiseptic.—Marcuse⁴ recommends the use of ictthalbin as an intestinal antiseptic not only in enteritis, but also in scrofula and tuberculosis. The compound, unacted upon by the gastric juices, is broken up in the intestines, liberating icthyol. It has been shown by Rolly and Saam to lessen the destruction of nitrogen. Under the use of ictthalbin there is an increase in appetite, with a gain in weight. Marcuse has employed it as a substitute for cod-liver oil. Dose for adult, 0.5 gm. to 1 gm. (8 to 15 grains) three times a day. [H.C.W.]

FORMULAS, ORIGINAL AND SELECTED.

Little⁵ recommends the following as a pleasant mode of prescribing Epsom salts, especially for children:

- Magnesium sulfate 15 grams (4 drams)
- Syrup of raspberry 62 cc. (2 ounces)
- One tablespoonful. [H.C.W.]

Palatable Castor-oil.—The taste of castor-oil often seriously interferes with its use. Among the many substances

¹ Journal Akusherstwa, etc., May, 1902.
² American Gynecology, April, 1903.
³ Treatment, February, 1903, Vol. 6, p. 881.

¹ Klin. therapeutische Wochenschrift, 1903, Vol. 10, p. 247.
² Balneol. Centralzeitung, April 6, 1903.
³ Klin. ther. Wochenschr., 1903, x, 346.
⁴ Merck's Arch., 1903, v, 119.
⁵ Brooklyn Med. Journ., xvii, No. 1.

recommended to conceal the unpleasant taste glycerin deserves the first rank. Either of the following will be found efficient:

- Castor-oil 30 cc. (1 ounce)
- Glycerin 30 cc. (1 ounce)
- Oil of wintergreen (or cloves) 0.6 cc. (10 minims)
- Mucilage of acacia, a sufficient quantity.
- Water sufficient to make 125 cc. (4 ounces)

Make an emulsion.

Each tablespoonful represents a teaspoonful of the oil, or, for those who can swallow it:

- Castor-oil } of each 8 cc. (2 drams)
- Glycerin }
- Oil of peppermint 0.2 cc. (4 minims)

Mix, place in an ice-cold spoon until it solidifies, and swallow at once. [H.C.W.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 29, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
Alabama:	Mobile May 16-23	4	
California:	Los Angeles May 8-16	1	
	San Francisco May 10-17	2	
Colorado:	Denver Apr. 25-May 2	19	
Illinois:	Bellefonte May 16-23	1	
	Chicago May 16-23	9	
Indiana:	Ellwood May 17-24	6	
	Indianapolis May 15-23	3	
Iowa:	Des Moines May 18-23	1	
Kentucky:	Newport May 8-23	2	
Louisiana:	New Orleans May 16-23	4	
Maine:	Biddeford May 16-23	1	
Maryland:	Baltimore May 16-23	1	
Massachusetts:	Holyoke May 16-23	1	
Michigan:	Detroit May 16-23	23	1
	Grand Rapids May 16-23	1	
	Port Huron May 16-23	1	
	Winona May 16-23	3	
Minnesota:	St. Louis May 17-24	20	
Missouri:	Omaha May 16-23	1	
Nebraska:	Manchester May 16-23	4	
New Hampshire:	Nashua May 16-23	6	
New Jersey:	Camden May 16-23	1	
New York:	Elmira May 16-23	1	
	New York May 16-23	1	
	Rochester May 14-21	6	
Ohio:	Ashtabula May 16-23	2	1
	Cincinnati May 15-22	15	
	Dayton May 16-23	5	
Pennsylvania:	Altoona May 16-23	1	
	Carbondale May 14-21	1	
	Johnstown May 16-23	1	1
	McKeesport May 16-23	1	
	Philadelphia May 16-23	18	4
	Pittsburg May 16-23	24	3
	One case imported from West Virginia.		
South Carolina:	Reading May 18-25	1	
Utah:	Charleston May 16-23	10	1
Wisconsin:	Salt Lake City May 16-23	3	
	Milwaukee May 15-23	1	

SMALLPOX—FOREIGN.

Brazil:	Rio de Janeiro Apr. 26-May 3	1	
Canada:	Winnipeg May 9-16	1	1
Canary Islands:	Las Palmas Apr. 25-May 2	18	
China:	Hongkong Mar. 28-Apr. 11	2	1
Colombia:	Barranquilla May 3-10	3	3
	Bocas del Toro May 25	25	2
Great Britain:	Birmingham May 2-16	24	1
	Dublin May 2-9	27	4
	Glasgow May 2-9	1	
	Leeds May 8-15	1	
	Liverpool May 2-16	84	3
	London To May 16	17	6
	Manchester May 2-9	10	
	Newcastle-on-Tyne May 2-9	10	1
	Nottingham May 2-9	2	
	Sunderland May 2-9	1	
India:	Bombay Apr. 21-24	94	
	Calcutta Apr. 15-25	3	
	Madras Apr. 15-25	1	
Mexico:	City of Mexico May 10-17	11	7
Russia:	Moscow Apr. 25-May 2	2	
Spain:	Valencia Apr. 15-30	2	

YELLOW FEVER.

Brazil:	Rio de Janeiro Apr. 26-May 3	13
Colombia:	Panama May 11-18	3
Costa Rica:	Limon Apr. 30-May 14	5
Mexico:	Coatzacoalcos May 8-16	1
	Tampico May 8-16	1
	Vera Cruz May 16-23	12

CHOLERA.

India:	Calcutta Apr. 18-25	140
Straits Settlements:	Singapore Apr. 4-11	3

PLAGUE.

Brazil:	Rio de Janeiro Apr. 26-May 3	2
Chile:	Iquique May 27	Present.
China:	Hongkong Jan. 1-Apr. 11	216
India:	Bombay Apr. 21-28	1,031
	Calcutta Apr. 18-25	434
	Karachi Apr. 19-26	228
Japan:	Yokohama May 26	Present.

Changes in the Medical Corps of the U. S. Army for the week ended May 30, 1903:

- SHAFFER, JOS. J., contract surgeon, leave granted April 10 is extended one month.
- GORGAS, Colonel WILLIAM C., assistant surgeon-general, now on leave in New York City, will report on June 1 to the commanding general, department of the East, for temporary duty as chief surgeon of that department during the absence on leave of Colonel Henry Lippincott, assistant surgeon-general.
- JONES, GEO. H., contract surgeon, now on leave at Toledo, Ohio, is relieved from further duty in the division of the Philippines and will proceed to Fort Fremont for duty, to relieve Contract Surgeon J. Randolph Harner, who will proceed to Fort Totten for duty.
- GREGORY, WM. G., contract surgeon, is granted leave for one month, upon surgeon's certificate, with permission to leave the limits of the department of California and to apply for an extension of one month.
- MCCULLOCH, Captain CHAMPE C., JR., and GODFREY, Captain GUY C. M., assistant surgeons, are relieved from further duty in the division of the Philippines and will proceed to San Francisco, Cal., and report by telegraph to the adjutant-general of the Army for further orders.
- FARR, First Lieutenant CHAS. W., assistant surgeon, leave granted January 28 is extended two months, and is charged to sick leave for two months from April 26.
- ASHBURN, JAMES K., contract surgeon, leave granted is extended ten days.
- FANNING, GEO. F., contract surgeon, leave granted April 22 is extended one month.
- HOWELL, First Lieutenant PARK, assistant surgeon, leave granted May 12 is extended fourteen days.

Changes in the Public Health and Marine-Hospital Service for the week ended May 28, 1903:

- WHITE, J. H., assistant surgeon-general, relieved from duty in Washington, D. C., to take effect June 6, 1903, and directed to proceed to Mobile, Alabama, and assume command of the service, relieving Surgeon W. P. McIntosh—May 28, 1903.
- GEDDINGS, H. D., assistant surgeon-general, detailed to represent the service at South Carolina Sanitary Association at Columbia, S. C., May 28—May 26, 1903.
- GLENNAN, A. H., surgeon, relieved from command of the Plague Laboratory, San Francisco, Cal., and directed to proceed to Washington, D. C., for duty—May 26, 1903.
- BROOKS, S. D., surgeon, upon being relieved at Portland, Me., by surgeon W. P. McIntosh, to proceed to Savannah, Ga., and assume command of the service, relieving Acting Assistant Surgeon E. S. Osborne—May 28, 1903.
- MCINTOSH, W. P., surgeon, upon being relieved at Mobile, Ala., by Surgeon J. H. White, to proceed to Portland, Me., and assume command of the service, relieving Surgeon S. D. Brooks—May 28, 1903.
- GUITERAS, G. M., surgeon, relieved from duty at Philadelphia, to take effect June 5, 1903, and directed to proceed to Cairo, Ill., and assume command of the service, relieving Passed Assistant Surgeon J. H. Oakley—May 28, 1903.
- PERRY, J. C., passed assistant surgeon, detailed for temporary duty at Washington, D. C.—May 25, 1903.
- NYDEGGER, J. A., passed assistant surgeon, relieved from duty at Baltimore, Md., and directed to proceed to Cincinnati, Ohio, and assume command of the service, relieving Assistant Surgeon J. W. Kerr—May 28, 1903.
- GARDNER, C. H., passed assistant surgeon, upon being relieved at Port Townsend, Wash., by Passed Assistant Surgeon M. H. Foster, to proceed to New York, N. Y., and report to Surgeon G. W. Stoner, Immigration depot, for duty—May 28, 1903.
- BLUE, R., passed assistant surgeon, to assume command of the plague laboratory, San Francisco, Cal., relieving Surgeon A. H. Glennan—May 26, 1903.
- OAKLEY, J. H., passed assistant surgeon, upon being relieved at Cairo, Ill., by Surgeon G. M. Guiteras, to proceed to Port Townsend quarantine, Wash., and assume command of the service, relieving Passed Assistant Surgeon M. H. Foster—May 28, 1903.
- FOSTER, M. H., passed assistant surgeon, upon being relieved by Passed Assistant Surgeon J. H. Oakley, at Port Townsend quarantine, Wash., to proceed to Port Townsend, Wash., and assume command of the service, relieving Passed Assistant Surgeon C. H. Gardner—May 28, 1903.
- LUMSDEN, L. L., passed assistant surgeon, to proceed to San Juan, Porto Rico, and assume temporary command of the service—May 26, 1903.
- DECKER, C. E., assistant surgeon, granted extension of leave of absence, on account of sickness, for thirty days from May 8—May 26, 1903.
- KERR, J. W., assistant surgeon, upon being relieved at Cincinnati, Ohio, by Passed Assistant Surgeon J. A. Nydegger, to proceed to New York, N. Y., and report to Surgeon G. W. Stoner, Immigration depot, for duty—May 28, 1903.
- RICHARDSON, T. F., assistant surgeon, granted leave of absence for three days from June 17—May 25, 1903.
- TROTTER, K. E., assistant surgeon, granted leave of absence for ten days from June 15—May 28, 1903.
- DUFFY, F., acting assistant surgeon, granted leave of absence for four days from June 1—May 28, 1903.
- HICKS, W. R., acting assistant surgeon, granted leave of absence for five days from June 2—May 28, 1903.
- RODMAN, J. C., acting assistant surgeon, granted leave of absence for four days from June 1—May 27, 1903.
- TOWNSEND, F., acting assistant surgeon, granted leave of absence for one week—May 24, 1903.

American Medicine ⁹⁰³

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The prejudice against night-air ventilation turns out to be in part at least the result of the experience of the peoples of malarial countries. The word malaria itself suggests the reason for the prejudice. Unless the bad air were shut out the bad mosquito was not shut out. Those who shut both out escape one of the world's greatest scourges, and even in the present year the Baedeker guidebooks of Italy contain the advice, "windows should be closed at night." Somebody should send the guidebook publishing company some mosquito netting. It is claimed that the descendants of the window-closers so well learned their lesson that those who did not obey the beatitude, "blessed are they who do not ventilate their sleeping-rooms," have been cut off from perpetuating the race by the pitiless laws of Darwinism. In this way the race escaped malaria, but found a worse evil in tuberculosis and pneumonia. Now that it is known that it is not malaria, but malmosquito that brings the evil, the crusade against malventilation and the prejudice against night-air may be undertaken with greater certainty of success, and the ravages of tuberculosis may be checked.

The Antimalarial Prejudice Not the Chief Cause of Bad Ventilation.—The theory that the necessity of excluding from houses the injurious night air is the cause the world over of the practice of poor ventilation will not hold. It is at least not the sole nor the chief reason of the prejudice against fresh air. Manifestly it does not obtain for countries in which there is no mosquito, and these form a relatively small part of the world inhabited by civilized peoples. In cold climates, and especially in the winter season, the theory has no applicability, and another explanation must be found. This is, we believe, the necessity that exists, especially among the vast majority of the poor, to economize warmth. A large portion of the peasants of France today secure this economy by keeping their domestic animals at night in the combined house and stable. In Arctic climates and in winter even in temperate zones, and especially in previous centuries, the securing of sufficient clothing and saving the loss of warmth has doubtless been a chief cause of the universal fear of ventilation. In this way today in some countries medical college lecture-rooms get on without the expense of fuel

by utilizing the foul but warm exhalations of the bodies of hundreds of students, who in anger cry out against a door ajar or a crack in a window. The greatest and best remedial agent in tuberculosis and many other devitalizing diseases is fresh air, by night or by day, ever fresh air! Now that the mosquito is "barred," and that civilization can provide the poorest with good houses and fuel, there should be a speedy lessening of the deathrate by perfect ventilation.

Compulsory vaccination is declared constitutional by the Supreme Court of Massachusetts, says our valued contemporary, the *St. Paul Medical Journal*, and all persons over 21 may be convicted for refusing. "If a person should deem it important," says the Court, "that vaccination should not be performed in his case, and the authorities should think otherwise, it is not in their power to vaccinate him by force, and the worst that could happen to him under the statute would be the payment of the penalty of five dollars. The defendants' contention that the statute works unequally in making an exception of minors and persons under guardianship is not well founded. It only limits the liability to a penalty for neglect of the requirement to persons who have a right to control their own conduct." The best part of the decision lies in the opinion expressed by the Court that the only competent evidence in the matter is the testimony of experts. This is a square placing of the bar against the ignoramuses and ranters who have not any knowledge of medicine or of the subject whereon to base an opinion. It would seem axiomatic that men who had never studied law, or electric engineering should decide as to legal matters or dynamos. It is an amazing fact that legislators and governors often think the judgment of medical experts to be scorned in public health concerns, and those who have never studied medicine are to be their official guides. Medical societies, local, state and national, should set about their common duty to secure the passage of laws making vaccination compulsory. All physicians and all intelligent laymen have no doubt of the wisdom and beneficence of such laws. The majority rules, or should rule, in our form of government, and the small minority of silly cranks should no longer be allowed to kill thousands of their fellow-citizens each year.

One Governor's Splendid Veto.—What a disgrace to Minnesota it is that her Legislature has given to those who choose to call themselves osteopaths all the rights and privileges of practitioners of medicine. The high-minded *St. Paul Medical Journal* says of this vicious legislation that the result of the bill is that the osteos may now treat all diseases and sue for their bills, but that *they cannot be sued for malpractice*. Their creature who lobbied the bill through seems to have been Senator Heiler H. Horton, and the first official act of the osteopathic board was to elect this man as their attorney. The bitterness of the respectable citizens of Minnesota is doubled by the synchronous action of the Governor of Utah, who in an intellectual and honorable veto stamped the nonsense of an osteopathic bill as follows:

The saving of human life, whether by means of looking to the prevention of disease or by means calculated to cure disease already established, will be admitted without question to be the proper climax of professional ambition as well as the highest humanitarian desire of legislative enactment. In both these directions the State of Utah, by vigorous sanitary laws and by strict requirements as to the quality of medical practitioners, stands well in the forefront of enlightened and progressive commonwealths.

Only through conviction should we venture to weaken in any degree these safeguards which experience and observation have proved to be beneficent and satisfactory.

Whatever the term or nature of the tenets of the particular school which this bill aims to recognize, its practice must, it seems to me, be considered a branch of the science of medicine. After all, the physician, of whatever school or designation, has to deal with the same physiology, the same conditions, the same laws of cause and effect in health and disease. All practitioners may not have the same knowledge and the same skill, yet our statutes have wisely provided as a matter of public policy and protection that a certain amount of skilled knowledge all of them must have.

It requires considerable honesty in any practitioner to admit that a case in hand is beyond his powers. His training may be limited, his pretensions modest; but the consequences of his weakness in refusing to concede it are equally dangerous. The natural treatment of any physical disorder is necessarily determined by a diagnosis of a case—a preliminary of first and absolute importance. To do the wrong thing by performing dangerous manipulations, or to do nothing at all—either of which courses is easily open to the unskilled—may be equally fatal. The peril is not lessened if the physician, perhaps by happy accident or coincidence, has discovered the true condition. He may be manly enough to confess inability to suggest proper remedies, or reckless enough to attempt treatment of his own altogether without reason or applicability, or indifferent enough, as already suggested, to do nothing at all. In either case the patient suffers the risk. Is not human life too precious to be thus trifled with?

The foregoing suggests that the treatment of disease should not be permitted to be a matter of mere experiment; and inasmuch as the authority to practise presupposed an acquaintance with the science as recognized by all the regular schools, any knowledge short of that should be deemed insufficient. I consider it unfair and dangerous, therefore, to allow the adherents of osteopathy or of any other school to practise without undergoing the ordinary tests to which other practitioners have to submit. The specialist may go so far as his talents and inclination may carry him, and the public be benefited by his advancement, but the fundamental and essential knowledge which every physician ought to have can not safely be waived or ignored. Science is progressive; advancement can not be stayed, in the art of healing least of all; and the dogmatism of disputants, whether in medicine or anything else, must soon yield to the light of truth and reason. Whatever merit osteopathy may have will assuredly find recognition. The present

contention is that in the bill before me the necessary requirements and safeguards with which the law surrounds the physically afflicted are thrown down and swept away. To this I am unwilling to consent. No practitioner of this school who possesses the qualifications required of the practitioners of other schools needs such a law. I deem it unwise to enact it for the benefit of those who have not those qualifications. Whenever all who seek to engage in the healing art shall be equally recognized as competent under the regulations now generally established, one medical law will be sufficient. This condition complied with it would give me sincere pleasure to name as a member of our State Board of Medical Examiners an adherent of the very school in whose behalf this piece of legislation is proposed.

HEBER M. WELLS, Governor.

The cost of forest fires in an average year is as follows:

Real property destroyed	\$25,000,000
Young forest growth destroyed	\$75,000,000
Acres of timber land burned	10,274,089
Lives lost	60

A competent authority states that whenever earth has been denuded of its forests, except in very humid regions, desolation has come. The greater the summer heat the more complete the desolation. This is true of the fairest portions of Asia, the birthplaces of letters, law, art, religion, civilization. Persia, Asia Minor, northern Africa, and the Mediterranean States of Europe lost their primacy, in so far as natural causes are concerned, mainly through the destruction of their forests, whereby the soil was rendered unable to support the needs of a progressive people. The number of lives lost can be roughly estimated, but the sickness and suffering are utterly incalculable. Perhaps no other physical cause produces such an indirect, but no less real, crop of want and deprivation, and so reduces the general stock of vital energy. Every State should have more stringent fire laws, and should see that they are administered with more thoroughness. The terrible expense may be prevented when the duty is recognized. The future health and prosperity of the continent largely depend upon scientific forestry.

Three hundred and fifteen new cases of typhoid in Philadelphia last week is a record which could be paralleled in many American cities, and with it should be considered the fact set forth in the following excerpt from an indignant newspaper editor:

Councils appropriate \$25,000 for the abatement of nuisances. After deducting salaries, the sum actually available is less than \$19,000. That is a beggarly amount with which to prevent the spread of disease. Year after year Councils are informed of the situation; that the money does not begin to meet requirements, and that in the summer months work must practically come to a standstill, but year after year the same policy is maintained. When the appropriations were made up at the beginning of the present year, the Department of Public Safety did its best to obtain \$50,000, but Councils in their wisdom refused the demand in spite of its importance, and as usual the health authorities will labor under great disadvantage this summer.

And the alert and public-spirited *City and State* adds:

There has been a woful lot of politics, wasteful of public money and health, in the operation and conduct of the sanitary affairs in Philadelphia of late years. As a single, significant example he might look into the subject of disinfectants used by the Health Bureau. Formerly a plant established in the basement of the city hall turned out what competent authorities

declared to be a thoroughly effective disinfectant at a cost of a few cents per gallon. During the last three or four years there was substituted for public use an article to which the name of "La Relse" was given by reversing the maker's name, and which has been bought in large quantities at prices incredibly extravagant as compared with the city's product—bought not directly from the producer, but of a man who seems to have had a most extraordinary "pull" with the late administration.

The nuisances that Dr. Martin would be apt to encounter in a search of this kind will be found to center in the political germ that has been so prolific at the city hall and which in a large part remains as yet unabated.

The Red Cross may have a useful function to perform in the future, but unless it is completely reorganized it will hardly have the virtue, the means, or the permission of the American people to do it. Dr. Anita Newcomb McGee, of Washington, has published a brief history and statement of the general condition of the society, from which we learn that the American Society is erroneously confused with the Geneva or Red Cross Treaty, which last is a mere treaty between governments without reference to any "Society." The International Red Cross Committee again is "a small body which exercises a slight supervision over and calls conferences of the officially recognized war relief societies of the countries which adhere to the Geneva treaty." Several incorporations have preceded the present organization to which a national charter was granted by Congress, 56 persons being named as members of the American National Red Cross. Up to this time the president, Miss Barton, had apparently accounted only to herself for moneys received and paid out. Dissatisfaction with the financial conduct of the present organization became public in December, 1902. By means of proxies the "slight changes" to be made in the by-laws became an entirely new set of by-laws, the result of which was to place in the hands of the president, now elected "for life," the policy of the organization and the administration of its finances. Protests arose, and appeals to the President of the United States and his cabinet (the "board of consultation"). The President at once disavowed authority for the use of the names of himself and cabinet and disclaimed responsibility for any of the proceedings of the organization. Some gentlemen wished to retire the Red Cross president on an annuity of \$2,500, but she did not accept the proposition. On April 6 the Executive Committee of the Red Cross suspended from membership all of the 22 persons who had signed the memorial to Congress. "So the matter now stands."

Gastrotomy for "Vague Gastric Symptoms."

—In an editorial note entitled "Surgery Gone Clean Daft" (p. 807, May 23), we took exception to the astounding dictum given editorially by the *Medical News* that the general practitioner should advise patients having "vague gastric symptoms which do not respond to rational internal treatment" to "submit to a harmless exploratory investigation." We are informed that Dr. Mayo disclaims having made the statements attributed to him by the *News*, and from which that journal drew its most amazing "corollary." Whether the alleged quotation from Dr. Mayo was correct is, however, extraneous to the principle involved. Our comment is

in no way a reflection upon that eminent surgeon or upon legitimate surgical intervention, but is directed entirely against the pseudoscience of surgical extremism. We would ask the *Medical News* how long it may be until exploration of the brain will be considered proper in "vague" headaches, and would also with due humility offer as a corollary to its corollary that after such "exploratory investigations" as it advocates the incision be closed with buttons and buttonholes instead of catgut, in order to facilitate further inspection should other "vague symptoms" arise!

The Christian Hospital scheme, to which we made allusion some weeks since, has attracted the attention of the medicolegal committee of the Chicago Medical Society, which is gathering evidence wherewith to bring the swindle to an end. Our mail of late has been loaded with the literature of this continuation of the extinct St. Luke's Hospital fraud carried on by the same men. The indignant letters we have received have been too numerous to answer. The last batch of circulars received contained a noteworthy enclosure squinting toward a descent into the exploitation of erotic curiosity. Drs. Granville and Probert appear to be old offenders, one having served a term in the Wisconsin Penitentiary, and the other was arrested in 1899 for bigamy, specifying five wives. The rage for "certificates" on the part of some medical men is a fact as unaccountable as the ease with which they are gulled. The medicolegal committee have letters from at least six physicians who have bought certificates because of the unwarranted use of Dr. J. B. Murphy's name by the Christian Hospital literature, and Dr. Murphy has postponed his determination to ask for an injunction in order to help the committee to secure evidence for a more thoroughgoing exposure and prosecution. The cooperation of the profession is desired by the committee.

Science-quackery and Fashionable Materialism.

—Last year *American Medicine* commented upon the pseudoscience of a certain plebifier of Professor Loeb. So avid are the popular magazines for this sort of nonsensical unscience that even the best of them have accepted his articles as if they had any value or warrant. At last the editor of the *Popular Science Monthly* has felt compelled to stop the folly and in answer to a correspondent he says:

Mr. Snyder appears not to have had a scientific training; his articles are sensational and inaccurate. This somewhat sweeping condemnation is easily justified. Let us consider the last article by Mr. Snyder that has come to our attention, "The Mechanism of the Brain," in *Harper's Monthly* for May. It is a potpourri of truth, half-truth and falsehood concerning chemistry, physics, anatomy, physiology and psychology. Thus we are told:

"Or, supposing that this special colloid can not be fixed upon as the seat of the highest powers of man, they might be thrown upon that extraordinary and rather hypothetical ether, of which physicists talk so much and know so little."

Within half a column Mr. Snyder passes easily from ether to electricity:

"As there is no nerve action without the evident presence of electricity, it seems probable that nerve action, thought and consciousness, and what in our present ignorance we call electricity, are one and the same."

Physicists may not know all that they would like to know about the ether and electricity, but they know enough not to write nonsense about them.

Teaching the Filipinos the Vices of Civilization.

—Is the *New Voice* correct in saying that there were 1,990 liquor shops licensed in Manila in the year 1902? It repeats that according to the report of the Philippine Commission there were 19,398 arrests made in the city during the year, classified as follows:

Natives	13,386
Chinese	2,355
Americans	2,014
Europeans	149
Japanese	71
Spaniards	67

The report gives the population of Manila on February 1, 1902, at 302,154, showing the tribes to be divided as follows:

Filipinos	223,900
Chinese	60,680
Americans (including garrison)	9,722
Foreigners	7,852

Reducing the arrests by nationalities, according to the population officially reported by the commission, we are confronted with the astounding fact that out of every 1,000 Americans in Manila 212 were arrested during the year. In other words, a little over one-fourth of the American population in the islands were law-breakers. The official figures of all nationalities per thousand are as follow:

Nationality.	Arrests.
Americans	212
Natives	60
Chinese	38
Foreigners	36

Is it true that we are three and one-half times as criminal as the Filipino himself? What an example to set!

Smallpox Among Infants.—From the Bulletin of the Chicago Health Department we quote the following: Chief Medical Inspector Herman Spalding says: "To the shame and reproach of parents the helpless unvaccinated baby continues to fall a victim to smallpox. Three of the seven cases this week were children under 3 years of age. Since January 1, 1903, 52 children under school age have fallen victims to smallpox because the parents had neglected to have the little ones vaccinated. The Department Bulletin has persistently pointed out this neglect of children under the school age."

Antityphoid Serum.—Dr. Chantemesse, of France, has prepared a series of comparative statistics, which he claims show the favorable action of antityphoid serum. His figures show that in the Paris hospitals the mortality from typhoid fever over a period of 20 months was 19%. In the same period the mortality at the Chantemesse Hospital was only 3.7%. Dr. Chantemesse's inoculatory methods have also been tried at the Naval Hospital at Toulon. Of 171 typhoid cases in which the Chantemesse serum was used 13 succumbed. This result is less favorable than that obtained under the personal supervision of Dr. Chantemesse—though it is better than that achieved by the ordinary methods of the Paris hospitals—but the smaller degree of success is explained as being due to less intimate knowledge of the proper doses to give in individual cases.

The sixth annual meeting of the Association of Medical Librarians was held Saturday, May 16, 1903, at Brooklyn, N. Y. The scientific sessions was held in the afternoon at the New York Academy of Medicine. Papers and discussions were contributed by C. P. Fisher, T. C. Lee, G. W. Myers, E. H. Brigham, J. S. Brownne, W. S. Dennet, A. T. Huntington, et al. The officers elected for the ensuing year are: President, William Osler; vice-president, Abraham Jacobi; secretary, Albert T. Huntington; treasurer, George D. Hersey. Executive Committee: John S. Brownne, Charles P. Fisher, James M. Winfield. Manager of Exchange: Marcia C. Noyes. The meeting adjourned to meet June, 1904, at Atlantic City. A full report of the proceedings of the Association will be published in the *Medical Library and Historical Journal* for July, 1903.

BOOK REVIEWS

A System of Physiologic Therapeutics: A Practical Exposition of the Methods Other than Drug-giving Useful in the Prevention of Disease and in the Treatment of the Sick.—Edited by SOLOMON SOLIS COHEN, A.M., M.D. Vol. V. Prophylaxis, Personal Hygiene, Civic Hygiene, and the Care of the Sick. By JOSEPH MCFARLAND, M.D.; HENRY LEFFMAN, M.D.; ALBERT ABRAMS, A.M., M.D., and W. WAYNE BABCOCK, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co., 1903. Eleven volumes.

This, Volume V of a System of Physiologic Therapeutics, which the editor assures us in the preface has been a source of special pleasure to him, is in many respects the most important of the series—comprising as it does prophylaxis, personal hygiene, civic hygiene, and the care of the sick. Although the chief aim of the physician is the cure of disease, he has still a higher aspiration—the prevention of disease. This, together with the conviction on the part of the editor that the subjects of prophylaxis and of treatment should not be divorced in teaching, study, or thought, has induced him to include in a system of therapeutics a book on the preservation of health and the prevention of disease. The wisdom of this course must be apparent to all that read the book. In Part I, which deals with the origin and prevention of disease, Drs. McFarland and Babcock discuss in an attractive and lucid manner the intrinsic and extrinsic factors of disease, the methods whereby diseases are spread, and the natural and artificial means of defense against disease. In the discussion of the etiology of disease, bacteria are naturally accorded especial attention, although rightly precedence in the discussion is given to the not less important but frequently overlooked intrinsic factors of disease, such as age, sex, heredity, auto-intoxication, etc. In these days of the omnipresent (and one may well believe almost omnipotent) bacterium, it is a treat to read such an altogether admirable presentation of the importance of nonbacterial causes in the etiology of disease, and this too, from the pen of a distinguished bacteriologist. In the discussion of the diffusion of disease, we read of the diffusion of disease through air, water, and soil; of the methods of transmission of disease by animals, of the conveyance of disease by foods, of social intercourse as a factor in the transmission of disease, of the modes of parasitic invasion, and of the action and the elimination of bacteria. In the discussion of the prevention of disease there is a satisfactory account of natural and acquired immunity, of artificial defenses, asepsis, antiseptics, and disinfection, of the prevention of the transmission of disease by animals, and of the prophylaxis of special infections of the different systems of the body. In Part II, Dr. Leffman discusses the important subject of civic hygiene, writing in an entertaining and authoritative manner on the city—its site and plan, street cleaning, nuisances, offensive trades, etc.; municipal health organization—comprising hospitals, quarantine, notification of infectious diseases, control of venereal diseases, etc.; of the food-supply and the water-supply, and of the disposal of waste and of the dead. Unfortunately, of many physicians it may be said that their knowledge of civic hygiene is in inverse ratio to the importance of the subject; but whether well informed or not, all of us will be much benefited by a careful reading of Dr. Leffman's contribution to the subject. In Part II, Dr. Abrams writes of domestic and personal hygiene, and of nursing and care of the sick. His discussion of these subjects constitutes a fitting close to a book that is a real addition to medical literature, comprising as it does a discussion of the hygiene of dwellings, of the school, and of travel; of personal hygiene, and of hygiene of special periods (infancy, childhood, puberty, old age, etc.), and of the diatheses (tuberculosis, rachitis, gout, etc.); a discussion of the sick-room and its appurtenances, of the care of the patient, and of nursing in special diseased conditions. We fear that many young women would be appalled at the mere mention of the 38 qualities demanded of a nurse by Dr. Abrams, but the matter of his entire contribution is of excellent quality, and well repays the reading. In reviewing previously issued volumes of the System of Physiologic Therapeutics we have taken occasion to commend both the editor and the publishers for the scope and the plan of the

work, and as each volume has appeared we have become convinced that the scheme was masterly conceived and skilfully executed. That every physician should possess a set of the books need not be reiterated.

Transactions of the Luzerne County Medical Society.—It is a gratifying sign of the times to see a county medical society in an interior section of the State, far removed from the teaching centers, issuing a formal report of its transactions. The volume before us consists of 162 pages and contains a large number of valuable articles. The ambition and energy of the Luzerne County Medical Society may well serve as an example to medical societies in other counties of this and other States.

BOOKS RECEIVED.

[Prompt acknowledgment of books received will be made in this column, and from time to time critical reviews will be made of those of interest to our readers.]

Gynecological Diagnosis: The Diagnosis of Diseases of Women A Treatise for Students and Practitioners.—By PALMER FINDLEY, M.D., Instructor in Obstetrics and Gynecology in Rush Medical College, in affiliation with the University of Chicago. In one octavo volume of 494 pages, richly illustrated with 210 engravings and 45 full-page plates in colors and monochrome. Cloth, \$4.50 net; leather, \$5.50 net. Lea Brothers & Co., publishers, Philadelphia and New York.

Diseases of the Eye: For Students and General Practitioners.—By CLARENCE A. VEASEY, A.M., M.D., Demonstrator of Ophthalmology in Jefferson Medical College, Philadelphia. 12mo. 410 pages, with 194 engravings and 10 full-page colored plates. Cloth, \$2.00 net. Lea Brothers & Co., publishers, Philadelphia and New York.

Bacteriology: A Manual of Bacteriology for Students and Physicians.—By FRED. C. ZAPFFE, M.D., Professor of Histology in the College of Physicians and Surgeons, and Professor of Pathology, Bacteriology and Hygiene in the Illinois Medical College, Chicago. In one 12mo volume of 350 pages, with 150 engravings and 7 full-page colored plates. Cloth, \$1.50 net; flexible leather, \$2.00 net. Lea's Series of Pocket Textbooks, edited by BERN B. GALLAUDET, M.D.

How to Keep Well: An Explanation of Modern Methods of Preventing Disease. By FLOYD M. CRANDALL, M.D. Doubleday, Page & Co., New York, 1903.

Medical and Surgical Uses of Electricity: Including the X-ray, Flourescent Light, Vibratory Therapeutics and High Frequency Currents.—By A. D. ROCKWELL, A.M., M.D., formerly Professor of Electrotherapeutics in the New York Postgraduate Medical School and Hospital, etc. With 252 illustrations. New edition. E. B. Treat & Co., New York, 1903. Price, \$5.00.

International Clinics: Vol. I, Thirteenth Series. A Quarterly of Illustrated Clinical Lectures and especially prepared original articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otolaryngology, Rhinology, Laryngology, Hygiene, and other topics of interest to students and practitioners.—By leading members of the medical profession throughout the world. Edited by A. O. J. KELLY, M.D., of Philadelphia. J. B. Lippincott Company, Philadelphia, 1903.

Postmortem Pathology: A Manual of Postmortem Examinations and the Interpretations to be drawn therefrom. A Practical Treatise for Students and Practitioners.—By HENRY W. CATTELL, A.M., M.D., Pathologist to the Philadelphia Hospital and the West Philadelphia Hospital for Women, and sometime Director of the Josephine M. Ayer Clinical Laboratory of the Pennsylvania Hospital, etc. With 162 illustrations. J. B. Lippincott Company, Philadelphia and London, 1903.

The Röntgen Rays in Medicine and Surgery: Designed for the use of Practitioners and Students.—By FRANCIS H. WILLIAMS, M.D. (Harv.), Graduate of the Massachusetts Institute of Technology, Visiting Physician at the Boston City Hospital, etc. With 428 illustrations. Third edition, with enlarged appendix. The Macmillan Company, New York, 1903. Price, \$6.00.

Ambulance Work and Nursing: A Handbook on First Aid to the Injured, with a section on nursing, etc. Profusely illustrated. W. T. Keener & Co., Chicago. Price, cloth, net, \$3.50.

State Board of Health of New Jersey: Twenty-sixth report, 1902. J. L. Murphy Publishing Company, Trenton, 1903.

Pathology of the Skin: An Introduction to the Histology, Pathology and Bacteriology of the Skin, with special reference to technic.—By J. M. H. MACLEOD, M.A., M.D., M.R.C.P., Assistant in the Dermatological Department, Charing Cross Hospital; Physician to the Skin Department, Victoria Hospital for Children. With 8 colored and 32 black and white plates. P. Blakiston's Son & Co., Philadelphia, 1903. Price, \$5.00 net.

Suter on Refraction: A Manual of Refraction and Motility. For students and practitioners of medicine.—By WILLIAM NORWOOD SUTER, M.D., Assistant Surgeon to the Episcopal Eye, Ear, and Throat Hospital, Washington, D. C. 12mo, 382 pages, with 101 engravings and 4 colored plates. Cloth, \$2.00 net. Lea Brothers & Co., Philadelphia and New York.

Surgical Treatment of Gastric and Duodenal Ulcers.—By B. G. A. MOYNIHAN, M. S. (Lond.), F.R.C.S. (Eng.), Senior Assistant Surgeon Leeds General Infirmary; Consulting Surgeon to the Skipton Hospital and to the Mirfield Memorial Hospital, etc. Illustrated. Price, cloth, \$2.50 net. W. B. Saunders & Co., Philadelphia and New York, 1903.

System of Physiologic Therapeutics: A Practical Exposition of the Methods Other Than Drug-giving, useful for the prevention of disease and in the treatment of the sick.—Edited by SOLOMON SOLIS COHEN, A.M., M.D., Senior Assistant Professor of Clinical Medicine in Jefferson Medical College, etc. Vol. X: Pneumotherapy. Inhalation.—By DR. PAUL LOUIS TISSIER, one time interne in the Paris Hospitals, Assistant Consulting Physician to Lennec and Lariboisiere Hospitals, etc. Illustrated. P. Blakiston's Son & Co., Philadelphia, 1903.

The Utero-ovarian Artery.—By BYRON ROBINSON, B.S., M.D., Chicago, Ill. E. H. Colegrove, Chicago, Ill., 1903. Price, \$1.00.

AMERICAN NEWS AND NOTES.

GENERAL.

Smallpox in the United States as officially reported from December 27 to June 5 amounts to 22,522 cases, with 593 deaths, as against 35,480 cases with 1,132 deaths during the corresponding period in the previous year.

Miscellaneous.—NEW YORK CITY: Dr. James R. McLane has resigned as dean of the College of Physicians and Surgeons of Columbia University. Dr. Clarence A. McWilliams and Dr. Forbes Hawkes have been appointed instructors in surgery at this institution. BALTIMORE, Md.: Dr. Norman M. Harris, associate professor of bacteriology at the Johns Hopkins Medical School, has accepted a call to the University of Chicago.

Sale of Opium in Manila.—From an exchange we quote the following: Mail advices from Manila announce that the bill now pending and which comes before the commission in June for passage, providing for the regulation of traffic in opium provides among other things that no opium shall be sold to a Filipino, and that it shall be sold to a Chinaman who has attained his majority only. Protection is afforded to druggists who handle opium for medicinal purposes, and machinery is provided the police for keeping track of its importation. The revenue derived under the operations of the act is to be used to defray the expenses of educating young Filipinos in American schools, that they may become school teachers.

How We Go to Sleep.—From an exchange we take the following: This subject has been investigated during several years past, in an experimental study of the psychophysiology of sleep and dreams by Messrs. Vachide and Vurpas. According to a report in the *Revue Scientifique* they have established the following facts: "Sleep begins, in its first phase, by a state of distraction which brings on states of absent-mindedness accompanied always by numerous and separate hallucinations, closely connected with the length of the absent-minded states. Immediately afterward, in a second phase, these states of distraction pass into a very delicate motor disturbance, due to the absence of parallelism in the axes of the eyes or by the deviation of their conjugate movements. Finally, in a third and final phase, which indicates the very near approach of actual sleep, the vasomotor system seems to conform to laws very different from those that regulate its mechanism during waking hours."

Opium Traffic in the Philippines.—It appears that the Philippine Commission propose putting up for competitive bid monopoly of the opium business and privileges to the highest bidder. This was done under Spanish rule, and the revenue from opium farming in the Philippines amounted to \$650,000 a year, which appears to have been applied to general expense account. The Commission purpose applying the revenue derived from the monopoly to sending young Filipinos to this country to be educated, to building additional schoolhouses in the islands, and to increasing the pay of the local teachers. The opium farmer will be required to furnish a heavy bond. Every ounce of opium which comes in will be recorded, and every ounce he sells must be recorded also, with the date, name, and address of purchaser, etc. The idea is thus to keep a tally on all the opium in sight and where it goes. The sale, except to full-blooded Chinese, will be prohibited. The Commission thinks that this system will have the effect of reducing the gross volume of consumption, and will make the official farmer a detective for the government in preventing the smuggling or illicit traffic of others, so that there will be practically only one man to watch.

EASTERN STATES.

Deathrate in Boston.—It is two years and six months since the mortality of Boston was as low as it was during the last week in May. Only 168 deaths occurred during the week as against 202 during the corresponding week last year, according to the report from the Board of Health, and this shows a death-rate of only 14.94. For the summer season that is unusually low.

NEW YORK.

Craig Colony.—Dr. B. Onuf has been appointed resident pathologist at the Craig Colony for Epileptics. It appears that the doctor has had considerable experience in this line of work, and in selecting a pathologist the authorities deemed it wise to utilize the unusual opportunities given at the Colony for studying the causes of epilepsy.

Tents for Consumptives.—*Charities* gives a general description of the tents and tent-life for the treatment of tuberculosis in connection with the Metropolitan Hospital, Blackwell's Island. A general description of the tents is given, and of the feeling manifested by the patients toward occupying the tents it says: The patients were rather reluctant at the outset to use the tents for sleeping purposes, believing that they would be draughty and uncomfortable. They were persuaded with some difficulty to try it, and without exception, after a few nights all were so much impressed by the tent-life that it is with

the greatest difficulty that any of them are persuaded to return to the buildings if for any reason this becomes necessary. The first tent was occupied in April, the weather being still quite cold, and although the temperature one morning was near the freezing point, the occupants neither asked for nor desired artificial heat.

Rochester and Hope Hospital.—The special committee of the Rochester Academy of Medicine has made a public report of the careful investigation in the management of the epidemics of smallpox in that city and of the management of the Hope Hospital in particular. It appears that there had been adverse criticism from several sources against the health department and Dr. Goler in particular concerning the management of affairs coming within their authority. Among other things the report says: In spite of what some persons considered imperfect quarantine, both epidemics were stamped out quickly; Dr. Goler was thoroughly fitted for the position of health officer by reason of his long experience, extensive study, and personal energy and integrity; nearly all of the horrors of the epidemic were caused by unnecessary and unwarranted interference and blockade of the health department by those who were notoriously ignorant of the subject which they aspired to control; the charter should be amended so that the health officer may become the actual head of the department with the power to conduct its affairs without political interference; the methods adopted by certain members of the committee of public safety of the common council have been a disgrace to the city of Rochester.

PHILADELPHIA, PENNSYLVANIA, ETC.

New Hospital.—The new Frankford Hospital, which was incorporated March 26, 1903, is now open for inspection and for the reception of patients.

Doctors for Board of Education.—Dr. Chas. S. Turnbull and Dr. Thos. J. Buchanan have been appointed by the board of judges members of the Board of Education respectively to succeed Dr. Thos. G. Morton from the Ninth section, and Max Bruemann, resigned, from the Thirteenth section.

Eastern Hospital for Epilepsy.—The Governor has appointed Dr. Thos. C. Fitzsimmons, Wilkes Barre; Alexander Knight, Ambler, and Francis Von A. Cabeen, of 1725 Pine street, Philadelphia, members of the commission to select a site and erect the Eastern Pennsylvania State Institution for the Feeble-minded and Epileptic. Four members of the Legislature will act in conjunction with the Governor's appointees as members of the commission.

University of Pennsylvania.—A series of clinics will be given on Alumni Day, June 16. Dr. Barton Cooke Hirst will give an obstetric clinic in the new Scott Memorial Amphitheater of the Maternity to members of the class of 1883. All alumni of the medical department will be welcome. The entrance to the amphitheater is on Thirty-sixth street below Spruce. Dr. Clark will give a gynecologic clinic; Professor James Tyson a medical clinic; and Professor J. William White a surgical clinic.

Tuberculosis.—Hereafter Director Martin, of the Department of Health and Charities, intends to classify tuberculosis as a contagious disease. He will join forces with Dr. Lawrence Flick, of the Phipps Institute, in combating the disease in Philadelphia. It is stated that another feature of his work will be a surveillance of the milk supply in various portions of the city. Chicago's experience in this particular has caused an awakening of public sentiment throughout the larger cities of the country, and it is hoped that in Philadelphia and elsewhere the experience of the western city will have its fruit in a more thorough inspection of the milk-supply during the hot months of the summer in larger cities of the country.

SOUTHERN STATES.

Report of the Health Department for Baltimore for the month of May shows that there were 753 deaths as compared with 781 for the same period in 1900, 754 in 1901, and 804 in 1902, comprising 285 white males, 272 white females, 100 colored males and 96 colored females. There were 172 deaths of children under 5 years of age, or 22.84% of the whole number of deaths. A total of 678 births were reported during the month, comprising 259 white males, 260 white females, 79 colored males and 80 colored females.

Pharmacy Laws to be Discussed.—The annual convention of the Maryland Pharmaceutical Association will be held at Ocean City from July 14 to 17. Two important matters to come before the convention are the poison law and the State pharmacy law. The poison law is claimed to be unfair. It provides that every seller of poison shall be a registered pharmacist, and druggists shall make a record of all poisons sold, together with the name of the purchaser and the amount of poison sold. It is claimed that in all parts of the State the law is being violated by the sale of Paris green and other deadly poisons necessary to farmers by country stores. The pharmacy law will be taken up by reason of a recent suit by one of the members of the State Pharmacy Board against the other members regarding the interpretation of the law.

WESTERN STATES.

New Hospital.—At Macomb, Ill., the new St. Francis Hospital has lately been opened. This is the only hospital in the United States conducted by the Sisters of St. Francis, a Catholic order, which has for its object the teaching of nurses, the care of the sick, and of orphans. The order is distinctly American and is patterned after the American International Organization, which has its headquarters in Europe.

Smallpox in Chicago.—The Chicago Bulletin of the Health Department for the week ended May 31 says: "During the month 45 cases of smallpox were discovered and removed to the Isolation Hospital. Of these 39 never had been vaccinated; 6 had old, imperfect marks, said to be from vaccination in childhood. Fifteen were unvaccinated children under 6 years of age. There were 7 deaths and 35 cases remain in the hospital at the close of the month, as against 47, May 31, 1902, during which month there were 57 cases removed to the hospital; 45 in May, 1903."

Warning to Children and Parents.—The health authorities in Chicago deemed it wise to call attention of children and negligent parents to the danger from scarlet fever, diphtheria, rabies, and other infectious diseases which may be conveyed by dogs and cats. Accordingly the following notice has been posted in all of the schools: "Hydrophobia is increasing throughout the city, and many of the dogs running at large are affected with it. Dogs and cats frequently come from rooms where scarlet fever, diphtheria, and other contagious diseases exist, and can transmit germs to children who fondle them."

Free Baths in Chicago.—From *Charities* we quote the following: "Five hundred and fifty-three thousand four hundred and one baths are tabulated for the year 1902 in the last quarterly issue of statistics published by the Chicago Municipal Library and Bureau of Statistics. This number was served by the four public baths and two pumping stations. Statistical cleanliness in Chicago is at low ebb in February—30,064 bathers for the month. The increase which sets in with the warm weather more than doubles this total for August—72,618. In addition, 208,539 persons bathed in 1902 at the three free beaches."

FOREIGN NEWS AND NOTES

GENERAL.

Plague in India.—The deaths from the plague in the Punjab from January 1 to May 2 numbered 141,879, according to a statement made by Lord George Hamilton, the Indian Secretary, in the House of Commons.

Mission to Lepers.—The society known as the Mission to the Lepers has for its object not only the medical treatment of the leper colonies in the Orient, but likewise seeks to raise the moral standard of these people. The twenty-eighth annual report has recently been made. It shows that the work is being carried on in 54 stations in India, Burma, and Ceylon; in 11 in China, Japan, and Sumatra. Nearly half of these hospitals or asylums are maintained wholly by this mission. The inmates of the society's institutions and of those aided by it number 6,425, including 570 untainted children and 270 leper children.

Molasses to Cure Cancer.—Dr. Henzell, the medical officer of the Maikay Hospital at Queensland, Australia, declares that cancer can be cured by the use of molasses, and he has cabled details of the treatment to Europe. He says the molasses must be taken on an empty stomach four times daily, mixed in milk or water. The dose should begin with one dram and be gradually increased to two ounces. The patient must abstain from alcoholic drink. The molasses to be given must be pure sugar-cane and not refined. It is stated that the Middlesex and Brompton Cancer Hospitals in London are to try the new cure at once.

OBITUARIES.

George P. Andrews, in Honolulu, H. I., May 9, aged 65. He was graduated from the New York College of Physicians and Surgeons in 1862. He was one of the founders of the Detroit Medical College, Detroit Academy of Medicine, and the Michigan State Medical Society. Up to 1881 he was professor of theory and practice of medicine in the Detroit Medical College.

Thomas McCann, in Pittsburg, Pa., May 9, aged 40. He was graduated from the Bellevue Hospital Medical College, New York, in 1886. He was surgeon of Pennsylvania and Allegheny Valley Railroads. He was professor of practical surgery Western Pennsylvania Medical College, and consulting surgeon to St. John's Hospital, Allegheny.

John Perrier, in Cleveland, Ohio, May 10, aged 60. He was graduated from McGill University, Montreal, in 1868. He was professor of theory and practice of medicine in the Cleveland College of Physicians and Surgeons, and a member of the American Medical Association.

William C. Eichelberger, of Terre Haute, Ind., died in Jackson, Tenn., May 18, aged 62. He was graduated from the Rush Medical College, Chicago, in 1870. He was a member of the American Medical Association, and of the Vigo County (Ind.) Medical Society.

James C. Channell, in Wrightsville, Pa., May 19, aged 50. He was graduated from the University of Pennsylvania, Philadelphia, in 1871. He was a member of the American Medical Association, and of the York County (Pa.) Medical Society.

George P. Cassidy, in Shawneetown, Ill., May 15, aged 43. He was graduated from the Miami Medical College, Cincinnati, Ohio, in 1855. He was a member of the Illinois State Medical Society, and of the American Medical Association.

W. C. Marden, of Pittsfield, Me., at Prescott, Ariz., May 1, aged 36. He was graduated from the Medical School of Maine, Bowdoin College, Brunswick, in 1896, and was a member of the American Medical Association.

Edgar D. Smith, of Chicago, Ill., June 1, aged 40. He was graduated from the Rush Medical College in 1891. He was at one time surgeon at the Cook County Hospital and later a professor at the Polyclinic.

Louis Knore, in Savannah, Ga., May 12, aged 78. He was graduated from the Oglethorpe Medical College, Savannah, in 1860. He was formerly professor of chemistry in the Savannah Medical College.

Evan Hadley, in Mooresville, Ind., May 13, aged 53. He was a member of American Medical Association and the Marion County Medical Society, of which he was at one time president.

Stuart Bates, in Virginia, Minn., May 6, aged 33. He was graduated from the Toronto (Ont.) University Medical Faculty in 1888, and was a member of the American Medical Association.

John W. Kirkpatrick, at Wyoming, Iowa, May 13, aged 40. He was graduated from the Rush Medical College, Chicago, in 1888. He was president of the Eastern Iowa Medical Society.

James M. Sims, in Marion, Ill., May 16, aged 33. He was graduated from the Marion Sims Medical College, St. Louis, in 1899. He was a member of the American Medical Association.

Joshua Chitwood, in Connersville, Ind., May 13, aged 65. He was graduated from the Miami Medical College, Cincinnati, in 1858. He served as surgeon during the Civil war.

Hans J. Englund, in Cambridge, Minn., May 5, aged 46. He was graduated from the Bennett Medical College, Chicago, in 1888, and from the Rush Medical College in 1895.

Andrew Jay, in Evergreen, Ala., May 8, aged 52. He was graduated from the Medical College of Alabama, Mobile, in 1872. He was a member of the State Legislature.

John H. Shelton, in Tower Hill, Iowa, May 13, aged 68. He was graduated from the College of Physicians and Surgeons, Keokuk, Iowa, in 1882.

James S. Hall, of Worcester, Mass., June 3, aged 46. He was graduated from the College of Physicians and Surgeons, Boston, Mass., in 1897.

Warner F. H. O'Keefe, in Pittsburg, Pa., May 20. He was graduated from the New York Homeopathic Medical College and Hospital in 1875.

Alfred Hasbrouck, in Poughkeepsie, N. Y., May 9, aged 82. He was graduated from the New York College of Physicians and Surgeons in 1848.

Clinton H. Lubbock, in Alameda, Cal., May 20, aged 42. He was graduated from the University of the State of Missouri, Columbia, in 1880.

A. S. Wilson, at Wilkes-Barre, Pa., May 27, aged 39. He was graduated from the medical department of the University of Pennsylvania in 1892.

Charles W. Doyle, in Santa Cruz, Cal., May 1, aged 53. He was graduated from the University of Aberdeen, Scotland, in 1875.

Frank Daniel, in Moultrie, Ga., May 6. He was graduated from the Atlanta (Ga.) College of Physicians and Surgeons in 1902.

E. L. Acker, in Allentown, Pa., May 12, aged 76. He was graduated from the University of Pennsylvania, Philadelphia, in 1852.

Charles C. Sparklin, at Goshen, Ind., May 5, aged 62. He was graduated from the Rush Medical College, Chicago, in 1861.

Oliver C. Evans, in Joplin, Mo., May 5, aged 58. He was graduated from the Pulte Medical College, Cincinnati, Ohio, in 1878.

Walter B. Sherman, in Eagle Cliff, Ohio, May 19, aged 72. He was graduated from the Cleveland Medical College in 1870.

George C. Synon, in Chicago, Ill., May 21, aged 45. He was graduated from the Rush Medical College, Chicago, in 1880.

Captain William O. Davies, an assistant surgeon in the United States Army, died in Philadelphia, May 26, aged 37.

Alice M. Potter, in Ithaca, N. Y., May 2, aged 33. She was graduated from the University of Buffalo in 1897.

Hiram J. Hartley, at Spring Hill, Ind., May 1, aged 79.

P. H. Keyser, Jr., at Boulder, Colo., May 24, aged 31.

John Gosman, at Doylestown, Pa., May 24, aged 70.

J. B. Forbes, at Chicago, Ill., June 1.

SOCIETY REPORTS

SIXTH TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Held in Washington, May 12, 13 and 14, 1903.

[Specially reported for *American Medicine*.]

Sessions of the Congress.

SECOND SESSION (CONCLUDED).

On the Surgical Treatment of Obstruction of the Common Bile Duct by Stone or Tumor.—**HANS KEHR** (Halberstadt, Germany) looked upon the pressure of bile as the chief factor in forcing stones through the duct. He did not think one could determine at the time of the colic whether the stones were large or small, nor whether they passed through the ductus choledochus or not. Acute obstructions of the duct are rare, and sometimes a spontaneous cure may result, but he attached but little importance to the passage of a stone, because there were probably others. If pancreatic trouble be associated with stone in the gallbladder he advised treating this at the same time, but was not in favor of breaking up the stone, as all the broken parts might not pass through. He believed that drainage was more quickly performed than suturing, and felt that in colotomy, with sutures, many stones were left behind. In his opinion the success of the operation depended upon the pathologic conditions present. He urged the use of a free abdominal incision, and a generous quantity of gauze packing, believing they played a most important part in the results obtained. While he believed that the treatment of obstruction of the ductus choledochus properly belonged to internal medicine, he advised against waiting more than three months before operating. He did not think an incision into the hepatic duct was very often necessary, but attached great importance to the treatment following operation.

Discussion.—**FRANK BILLINGS** (Chicago) commented on the fact that surgeons had, in the greater part of the operations done in the last few years, so enlightened us in the diagnosis of these conditions that it can be much more readily made than formerly, but in spite of this, considered it was absolutely impossible to make a rational diagnosis in many cases. The fact that the most prominent symptom referred to by writers of the present day was pain, usually in the region of the gallbladder apparatus, not always severe, nor always colicky in character, was dwelt upon, as well as the fact that points of tenderness may be present without any pain, especially in patients whose abdominal walls are not too thick. Within one year two patients have called upon Dr. Billings, both of whom had been operated upon for cystic gallstones without the stones having been found, the condition in each case being that of gastric crises, due to locomotor ataxia. The fact that cases of appendicitis were often operated upon for gallstone, and that floating kidney and inflamed appendix may refer pain to the gallbladder region, was briefly noted, and the statement made that in one sense gallstones are harmless, and do not present symptoms sufficient to make a diagnosis until there is infection of the gallbladder region. In the doctor's opinion, by the time we are able to make a diagnosis of gallstone the case is no longer a medical disease, but a surgical one. He emphasized very strongly the fact that if once a diagnosis is made, and one can elicit the information that gallstones have repeatedly occurred in the past, an operation is indicated and should be performed at once. However, he was in favor beforehand of trying to get rid of the infection by proper food, drink, respiratory exercise, and in the case of women, adjustment of the dress, but if these failed he urged operation at once. **GEORGE DOCK** (Ann Arbor) commented on the fact that nothing but carelessness or ignorance in many cases prevented patients from being sent to the surgeon, and he believed this was largely due to their not knowing the beneficial results to be obtained by surgical treatment. The resemblance of cases of gallstone disease to appendicitis and renal colic was alluded to, but it was claimed that a careful examination will in most cases clear up the diagnosis satisfactorily. In his opinion more has been learned from the surgeon than from the pathologist in these cases, largely owing to the fact that many of them do not come to autopsy at all, so that the pathologist does not have an opportunity of studying them. He referred to a case which recently came under his observation in which there was very marked dilation of the stomach, without any history pointing to the cause. It was probably an example of latent ulcer of the stomach, followed by cicatricial contraction, and the patient's condition was desperate. He was referred to the surgical clinic for treatment, and a few days before the day set for the operation, while the stomach was being washed out, a gallstone came up with the stomach washing. Although confronted with this evidence of what his disease was, the patient could recall no symptoms of tenderness in the region of the gallbladder, but examination before this had shown a resistance in this region. The patient finally came to operation, which, unfortunately, was fatal. It was found that he had old and very extensive disease of the gallbladder and cystic duct, so that they were almost unrecognizable. In a similar case the speaker hesitated to make a diag-

nosis, but finally did so in view of the fact that a cross examination of the patient elicited a history of mild attacks of jaundice. HENRY SEWALL (Denver) discussed the papers under 17 different headings, which were confined to a synoptical statement of the physiologic conditions, whose modifications lead to gallstone formation. After stating that the bile is a continuous secretion, with rhythmic accelerations due to contraction of the larger bile ducts, he said it would be interesting to consider how the bile got into the gallbladder during the intervals between its outpourings into the intestine, which he proceeded briefly to explain. He said it was granted on all sides that the dangers of gallstone disease depend upon bacterial invasion of the gallbladder and gall ducts, and that the formation of gallstones may presuppose such invasion. Commenting upon the entrance of germs from the intestine, the sphincter muscle of the duct must form a useful barrier, but germs must be constantly penetrating the common duct, and once in the duct they must find ready access to the gallbladder, except for the possible filtering power of the Heisterian valve in the cystic duct. He supposed it was well known that all factors restricting the free outflowing of bile (dress, habits of eating, etc.) predisposed to gallstones, and also if the bile, when secreted by the liver, is already infected, it cannot serve as a cleansing fluid. In his opinion a prominent or principal use of the gallbladder is to serve as a flush tank for the common and cystic duct, and it may be suspected that atrophy or extirpation of the gallbladder might predispose to cholangitis. E. G. JANEWAY (New York) called attention to the importance of the character of the food taken by patients suffering with this disease, and urged that this matter should be under the control of the physician. He briefly detailed a case of complete obstruction, which recently came under his notice, and which case was in charge of a physician who had made somewhat of a special study of these conditions. The physician told the speaker that the diagnosis could not be that of complete obstruction because the bile flowed into the intestine, which opinion was based upon a study of the appearance of the stools. Careful cross-questioning of the patient, however, elicited the fact that he had been eating very largely of spinach, and this had stained the passages green. He also mentioned the fact that he had seen two cases operated upon for gallstone obstruction, in each of which the disease was ulcer of the duodenum. Prof. B. G. A. MOYNIHAN (Leeds, England) stated that he had had considerable experience in England with gallstone disease, and that this was the trend of the recent surgical experience in that country. He referred to the paper of Dr. Mayo, and especially to the incision he uses in operations upon the common duct, which is the same as that now being employed by the speaker. Referring to the mortality in these cases, the doctor stated that although operations upon the common duct used to be considered extremely serious, they were not losing at the present time more than 3% or 4%, and he attributed this improvement to the kind of incision which is being used, through which one is able to see the gallbladder and pull out through the wound about one-third of the liver. He expressed considerable satisfaction from this little detail in the operation, and claimed to be able to operate upon the common duct in 20 or 30 minutes. He commented upon the fact that one is being driven oftener and oftener to an inspection of the gallbladder, making it necessary to employ an incision which would permit of this. He referred to some experience he had had when cholecystotomy had been performed, and when there had not been a complete abolition of all the trouble as the patient had complained of an uneasiness in the old scar. After stating that for many reasons surgeons have been driven to the performance of the operation of cholecystectomy, he referred to the fact that they have had more facilities for operating upon the common duct and have been better satisfied with the result.

ASSOCIATION OF AMERICAN PHYSICIANS.

[Specially reported for *American Medicine*.]

SECOND SESSION.

Acute Lymphatic Leukemia.—A. O. J. KELLY (Philadelphia) reported four cases of the disease, with necropsies and a description of the blood findings and anatomic changes, and discussed the alterations in the bone marrow, with particular reference to the nature of acute lymphatic leukemia in its relationship to myelogenous leukemia.

Report of an Autopsy and the Microscopic Findings in a Case of Acute Lymphatic Leukemia.—F. P. KINNICUTT (New York) made this report, giving many technical details.

A Clinical and Pathologic Study of Two Cases of Splenic Leukemia, Presenting Early and Late Stages of Cirrhosis (Early and Late Stages of Banti's Disease).—GEORGE DOCK and ALDRED S. WARTHIN (Ann Arbor) reported these two cases, both of which presented a typical picture of splenic anemia, splenic fibrosis, etc., stenosis of the portal vein, with calcification of the vein-wall. There was an extensive new formation of lymphoid tissue throughout the mesentery and prevertebral adipose tissue. In one case the new lymphoid tissue was like splenic pulp in structure. In the second case (advanced cirrhosis) the lymphoid tissue presented the charac-

teristics of hyperplastic hemolymph-nodes. Great numbers of phagocytes containing disintegrating red blood cells and blood pigment were found in the blood sinuses. No hemosiderin was found in the liver, spleen or kidneys. No evidence of red blood cell destruction was observed in the spleen. The bone marrow showed numbers of red cell and pigment phagocytes. Similar changes were noted in the hemolymph-nodes in the case showing early cirrhosis. There was a tendency to the deposit of lime salts throughout the portal system, fibrosis of the portal branches, interstitial changes in the pancreas, and presence in the bloodvessels of numerous bone marrow giant cells. Early loss of the splenic function and partial compensation by new formation and hyperplasia of lymphoid and hemolymphoid structures. It seemed probable that hemolysis was only compensatory for the lost splenic function and not the direct result of an intoxication.

Discussion.—CABOT (Boston) said that out of 76 cases he had no reason to believe that the two types were ever fused or mixed; they were clearly myelogenous or lymphatic. When a mixed condition had been reported he was inclined to think the examination unsatisfactory. PEABODY (Boston) reported a case without enlargement of the lymphatic glands, in which blood examination showed 150,000 white cells; 91% mononuclears. HERRICK had seen nine typical cases, in two of which there were numbers of nucleated red blood cells. He thought that clinically the cases resembled acute infection; four had angina with exudate upon the tonsils, and the anemia was rapid and progressive. FUSSELL (Philadelphia) had reported a case some three years ago that began with the ordinary symptoms of typhoid fever; moderate enlargement of the spleen; no enlargement of the lymphatic glands. WELCH (Baltimore) called attention to the theory of the origin of lymphocytes and thought this study constituted the principal attack upon Ehrlich's theory. He referred also to the question of the ameboid movements of lymphocytes. He had always believed that the evidence in support of this movement was conclusive. In the majority of instances there was terminal infection. He referred to a case of calcareous degeneration of the portal vein with marked sclerosis of the walls and changes in the spleen and liver. OSLER divided the cases into two groups—one running its course in 10 or 12 weeks; the other lasting for as many years. The acute cases resembled the cases of acute septicemia, with hemorrhages, fever, swollen tonsils, angina, etc.

The Relation of Chronic Enlargement of the Spleen to Anemia in Infancy.—JOHN LOVETT MORSE (Boston) gave the histories and blood examinations in 22 cases of anemia with splenic tumor in infancy. He considered that the enlargements of the spleen, liver, and lymph-nodes develop independently of each other, with no direct connection as to cause or effect. They were due to disturbance of nutrition, the anemia being secondary, not primary. He thought the terms "anaemia infantum pseudoleukiemia" or "splenic anemia of infancy" were not justifiable.

Discussion.—OSLER (Baltimore) said that many had been convinced for a long time of the frequency of enlargement of the spleen in cases of malnutrition of children. Cirrhosis of the liver was also quite frequent in these conditions.

[To be continued.]

AMERICAN SURGICAL ASSOCIATION.

[Specially reported for *American Medicine*.]

The Surgery of the Simple Diseases of the Stomach.—B. G. A. MOYNIHAN (Leeds, England) stated that the great majority of such diseases susceptible to successful treatment by surgical measures are due to ulceration or to its complications and results. *Perforation* is subdivided into the three classes of acute, subacute, and chronic. *Hemorrhage* from gastric or duodenal ulcers is recognizable either as hematemesis or melena. Hemorrhage may occur from an acute or a chronic ulcer. The characteristics of hemorrhage from an acute gastric ulcer are spontaneity, abruptness of onset, the rapid loss of a large quantity of blood, the marked tendency to spontaneous cessation, the infrequency of a repetition of the hemorrhage in anything but trivial quantity, and the transience of the resulting anemia. Hemorrhage from a chronic ulcer the author divides into four groups, as follows. 1. The hemorrhage is latent or concealed, is always trivial, and often conspicuous. 2. The hemorrhage is intermittent, but in moderate quantity, occurring spontaneously and with apparent caprice at infrequent intervals. The life of the patient is never in jeopardy from loss of blood, though anemia is a persisting symptom. 3. The hemorrhage occurs generally, but not always, after a warning exacerbation of chronic symptoms. It is rapidly repeated, is always abundant, its persistence and excess cause grave peril, and will, if unchecked, be the determining cause of the patient's death. 4. The hemorrhage is instant, overwhelming, and lethal. In hemorrhage from an acute ulcer, the aid of a surgeon will rarely be needed; medical means alone will generally suffice. In a few cases in which the hemorrhage is both copious and recurring—threatening the life of the patient—the performance of gastroenterostomy will prove more effective than any other procedure, both in checking the hemorrhage and in preventing its recurrence. It is mainly in cases of chronic ulcer that the question of surgical treatment for hemorrhage will arise. In

all cases of hemorrhage from a chronic ulcer, an operation ought to be performed at the earliest possible moment. After describing the great diversity of form under which chronic ulcer presents itself clinically, the author takes up the question of operative treatment. In operating upon chronic ulcer of the stomach, he always performs gastroenterostomy, wherever the ulcer is placed, and finds that this procedure will relieve symptoms completely and permanently, and will permit of the sound healing of the ulcer. Excision is unnecessary, often impossible, always insufficient. In the performance of gastroenterostomy he unites the posterior wall of the stomach with the jejunum through an opening in the transverse mesocolon. *Hourglass stomach* is usually described as being "congenital" and "acquired." The author has been unable to find any proof of the existence of the congenital form. The acquired form may be caused by (1) perigastric adhesions; (2) ulcer, with local perforation and anchoring to the anterior abdominal wall; (3) chronic ulcer, generally at or near the middle of the organ; (4) malignant disease. The treatment may be beset with difficulties, and the author specifies six different operations which may be practised: (1) Gastroplasty; (2) gastrogastrostomy or gastroanastomosis; (3) either of the foregoing, with gastroenterostomy from the pyloric pouch, in cases of dual stenosis; (4) gastroenterostomy from cardiac pouch, when the pyloric pouch is so small that it can be ignored; (5) gastroenterostomy from both pouches; (6) partial gastrectomy. The operations selected will necessarily depend upon the condition which is found.

The number of cases upon which Mr. Moynihan's paper is based is as follows:

Perforating gastric or duodenal ulcer, 12 cases, 6 recoveries.
Gastroenterostomy for chronic ulcer, etc., 70 cases, 1 death.
Pyloroplasty, 3 cases, no deaths.
Hourglass stomach, 15 cases, 3 deaths.
Gastroplasty, 1 case, recovered.
Excision of ulcer for hematemesis, 1 case, died.

Symposium on the Therapeutic Value of the X-rays in Surgery.

The Value of the X-ray in Superficial Epitheliomas and Tuberculosis.—WM. L. RODMAN and G. E. PFAHLER, Philadelphia, mentioned the following advantages of the treatment, as given by Pusey: (1) It is painless; (2) it destroys diseased tissue but leaves healthy tissue in its place; (3) it leaves a minimum scar; (4) it can be used when the surrounding tissue cannot be sacrificed; (5) it relieves pain and induces sleep. The following conclusions were then given: 1. The length of time required for the cure of epitheliomas is longer than by surgical or caustic treatment while the cosmetic results are better. The dangers are proportionate to the urgency of the treatment, as indicated by the degree of malignancy. It should only be recommended in cases that are inoperable either because of the extent of the growth or its location. 2. It is probably the best means at our command for the treatment of superficial tuberculosis and gives better cosmetic results. 3. It should follow all operations for malignant disease or tuberculosis with the twofold object of stimulating the healing process and of preventing a recurrence. In some cases it may be of an advantage to give a short course of treatment before operation, to destroy the outlying portions of the growth and make such operation of a less formidable nature.

[To be continued.]

AMERICAN ASSOCIATION OF PATHOLOGISTS AND BACTERIOLOGISTS.

Third Annual Meeting, Held in Washington, May 12, 13 and 14, 1903.

[Specially reported for *American Medicine*.]

FOURTH SESSION.

Pathologic Changes in the Nervous System in a Case of Lead Palsy.—W. G. SPILLER (Philadelphia) included in his paper a discussion of the findings in the cases recorded in the literature, and the description of the pathologic changes in his own case. These changes were chiefly an extensive proliferation of the endothelial cells of the cerebral plex; changes in the spinal ganglia, and in the peripheral nerves and the muscles, the changes in the periphery resembling those seen in rabies.

The Reactions of the Blood in Experimental Diabetes Mellitus.—J. E. SWEET (Philadelphia) states that the main results of his work are those obtained in his study of the experimental diabetes produced in dogs by the complete removal of the pancreas. The work was based upon the fact long known that the diabetic organism is abnormally susceptible to infectious processes. This susceptibility to infection is found to be due to a great loss of the complementary substances, a loss of over 50% of the hemolytic complement, and apparently an entire loss of the bacteriolytic complements. No effect of the diabetes upon the leukocytes of any type can be demonstrated. Sweet, therefore, concludes that the leukocyte has nothing to do with the production of those complementary substances which are destroyed by heating to 56° C.

A Contribution to the Knowledge of the Development and Pathology of the Islands of Langerhans of the Pancreas.—R. M. PEARCE (Philadelphia) has made a most thorough study of the development of these groups of cells in an unusually good collection of material, having studied their development in 21 human embryos of different stages. With this he has joined a study of the islands in cases of syphilitic pancreatitis of the newborn, and of the fate of the islands in cases of cancerous degeneration of the pancreas. The conclusions from this admirable study are that the islands of Langerhans develop from the acini of the pancreas. They show a remarkable resistance to degenerative processes.

Discussion.—HEKTOEN calls attention to the possible complementary hypertrophy of the islands in cases of disease of the liver.

A Statistical Study of Endotheliomas, with a Report of 15 Cases, and Lantern Slide and Projection Demonstrations.—W. M. L. COPLIN (Philadelphia) in his paper embodied a thorough analytic study of the cases reported in the literature, with an extended classification of occurrence, etc. The main results of interest to the clinician are those dealing with the relative frequency of occurrence. Coplin classifies 29.13% as arising from the serosa, with which he groups the tumors of the dura; 18.77% arise from the ovary; 11.48% have their origin in the parotid. Metastases occur by way of the blood, and occur principally in the lung and bronchial glands.

Multiple Thyroid Tumor of Bone and Glands of Cancerous Origin, but with Typical Thyroid Structure.—ADOLPH MAYER (New York) discussed at length this tumor, which illustrates the tendency of some growths to retain the structural peculiarity of the tissue in which they originate. He also interpolated the description of a tumor, having no connection with his paper, from a case of akromegaly.

Studies on the Pathology of Forage Poisoning in Horses, So-called Epizootic Cerebrospinal Meningitis.—M. P. RAVENEL and D. J. MCCARTHY (Philadelphia) gave a preliminary report on this subject. The name "cerebrospinal meningitis" is not justified by either clinical observations or by postmortem findings. The name "forage poisoning" has therefore been suggested. The principal pathologic changes are found in the intravertebral ganglia, and resemble in many particulars those changes seen in the intravertebral ganglia of rabbits dead of rabies. The disease is probably due to the growth of some fungus upon the ensilage.

Studies of the Bacteriolytic Complements Found in the Serum of the Rabbit.—Reported by A. C. ABBOTT for E. B. VEDDER (Philadelphia). These studies have thrown light upon many of the important questions occurring in the course of modern work upon immunity. Proof has been brought of the existence of many complements, and interesting facts in regard to their behavior toward filters, etc., demonstrated. Vedder has not been able to support the teaching of the French school, that the complements are elaborated by the polynuclear leukocytes.

Enzymes and Antienzymes, with Special Reference to the Antibody of Rennet.—JOSEPH MCFARLAND (Philadelphia) has been able to confirm earlier experiments on the possibility of producing an antibody which has the property of inhibiting the coagulating property of rennet. He has further made an interesting addition to our knowledge, by the demonstration that the antibody combines with the rennet, and not with the casinogen. This fact is proved by the observation that the rennet is prevented from acting upon milk by a much smaller amount of the specific serum when the serum is added to the rennet before the addition of the rennet to the milk, than when rennet and serum are added separately to the milk.

AMERICAN ORTHOPEDIC ASSOCIATION.

[Specially reported for *American Medicine*.]

SECOND SESSION (CONTINUED).

Breaking Down of the Foot in Trained Nurses: A Series of 500 Observations on Normal and Disabled Feet.—R. W. LOVETT (Boston). This paper will appear in a future issue of *American Medicine*.

Spastic Paralysis.—BERNARD BARTOW (Buffalo) reported the following: Case I.—Boy, aged 11 years, born at 7 months. Spasticity was not observed till third month. His development was slow, with marked mental enfeeblement. The condition is spastic double hemiplegia, involving especially the lower extremities. Spasticity largely abated in the higher muscles. There was associated structural shortening with spasticity in the hamstrings. The thigh flexors, adductors, and leg groups were strongly spastic during movement. Reflexes were exaggerated in contracted muscles; electrical reaction very slight in the quadriceps. Malpostures were very characteristic, while erect, standing, and sitting positions were assumed and maintained with difficulty. Locomotion: Sliding and dragging body by grasping fixed objects, never walked. Operations were done June 9 and 20, 1902, with transposition of hamstring tendons to quadriceps, and correction of knee malposition. Relief of spasticity in associated groups followed, and rapid and marked mental improvement. Extension power in quadriceps evident in three months. Standing position was

maintained with support from hands at sixteenth week. The patient was able to walk with crutches in three months, and able to walk three-fourths of a mile in nine months. Case II.—Boy of 15, born at term, weighing four pounds, had double spasticity, especially of lower extremities; flexion and extension good. There was 30° flexion in standing; therefore muscles became spastic when fatigued. Treatment was similar to that of Case I, plus division of the iliotibial band, and result was equally good.

A Consideration of the Proper Arrangement of the Clothing in Growing Children with Reference to the Prevention of Faulty Attitudes.—J. E. GOLDTHWAIT (Boston) says that a normal position with the shoulders square can not be long maintained with the clothing supported upon the tips of the shoulders, as is commonly the case. This leads to stoop shoulder, flattening of the chest, protrusion of the abdomen and head, all of which produce muscle-strain, particularly on the spinal muscles, weakness, and frequently lateral curvature. Exercise nor any other form of treatment which does not seek to remove the cause will not overcome the condition. Treatment: Use of a correct waist, which puts the weight on the base of the neck rather than the tip of the shoulders. It can be of the suspender plan leaving the question of high or low neck waist to the tastes of patient. The boys' pattern of the popularly known "easy waist" should be adopted for clinical work, as it almost meets the condition and costs no more than other cheap waists. Stocking straps should be fastened to the suspenders, thus aiding lateral motion, or on a pelvic band (like men's belts) which is too low to interfere with abdominal organs. Stoop shoulder is most frequently seen in girls, and often disappears at puberty.

[To be continued.]

AMERICAN DERMATOLOGICAL ASSOCIATION.

[Specially reported for *American Medicine*.]

SECOND SESSION (CONCLUDED).

Report of a Case of Dermatitis Gangræna Infantum.

—J. NEVINS HYDE (Chicago) related this case, occurring in a child 17 months of age, previously healthy, who from unknown cause had marked red blotches on the wrist, which was erythematous. They were symptoms of general eruption and two days later the wrist became swollen. On the fourth day an incision was made and copious watery fluid was evacuated. On the fifth day a similar eruption appeared on the body; there was great edema of extremities and the child lost appetite. On the tenth day there was a temperature ranging from 103° to 105°; the child lay listless and was much emaciated. The general surface was cool, except the hands, which were warm to the touch. On the eleventh day there were superficial pustules, some of which were as large as a twenty-five cent piece. On the twelfth day gangrenous changes on both wrist and foot were noticed. On the thirteenth day the gangrenous process had increased. There were bullous areas over wrist and knuckles. Several of the digits were spontaneously disarticulated, the ulcers extending to the bone, and the fingers held on by shreds. On the fourteenth day the child died. Cultures were made and *Staphylococcus pyogenes aureus* was found. Upon necropsy the internal organs were found free from lesions, except a few thrombi.

A New Drug Eruption of the Iodoform Type.—S. POLLITZER (New York) began with the statement that iodoform has been used for 25 years and is now used more carefully, with the result that there are fewer cases of poisoning reported. Mezotan is used for treatment of rheumatism, used externally, causing the skin to become warm, tingling, and markedly red. Salicylic acid is found in the urine one hour after it is used. Erythema and urticaria are both noticed, and if the use of the drug is continued the urticaria becomes worse. In cases where the drug is withdrawn upon the appearance of the dermatitis the dermatitis disappears. The areas involved are irregular in outline; erythema is marked, itching, and burning. He cited a case in which equal parts of mezotan and olive oil was used on an elbow-joint; it was followed by a marked dermatitis of the forearm, with irregular areas across the trunk, some areas on the other arm and also found on the thighs. With the withdrawal of the drug and the use of ichthyol the dermatitis disappeared readily after the first application, except on arm first involved. With continuous use of ichthyol it finally passed away with fine scaling.

THIRD SESSION.

A Case of Multiple Angioma.—A. POST (Boston) detailed the case of a girl of 10, who presented a series of tumors on the right arm, which extended to the sternum. They were first noticed at the end of her first year. They were lumpy in outline and her hands were puffy. During the last six years some spots were noticed on her chest, which increased in size, the masses on her hand and arms also increased in size. In the axilla and inner side of the arm they were marked, were irregular masses having a soft, velvety feel, and were elevated about the surrounding skin. On the hypothenar eminence was a very marked group of masses and along the mid arm on the ulnar side were also several groups; they were painful upon pressure. She was subjected to an operation and the masses

cut away; they appeared to be simple, superficial veins. The main artery was ligated, and the masses on the fingers were dissected off. The remaining veins seemed very much increased in size. A month after the operation the veins where the nodules had been showed a marked increase in size. The arm and hand were double the size of the nonaffected arm. The palm was filled with nodular masses projecting one-half inch above the surface; there were also nodules in the axilla. They appeared to be enlarged veins. Pressure had no effect upon them. They appeared more like fibromas than angiomas. Several were incised and they bled freely; the whole arm was enlarged and seemed an enlarged network of veins. Upon microscopic examination they showed to be angiomas of the capillary type. The lining endothelium was more prominent than that of normal vessels. The heart and lungs were normal and no other disease could be detected.

[To be continued.]

THE AMERICAN CLIMATOLOGICAL ASSOCIATION.

Twentieth Annual Meeting, Held in Washington, D. C.,
May 12, 13 and 14, 1903.

[Specially reported for *American Medicine*.]

The president, NORMAN BRIDGE (Los Angeles, Cal.) made the opening address. After noting the special field of the Association, which includes climate, mineral waters, and diseases of the respiratory and circulatory systems, Dr. Bridge said that this Association, by its study and publications, has done incalculable good to a vast number of consumptives who have gone to better climates and recovered. And it is not surprising that a few who cannot possibly be helped by the influences that have done such good to the many may have been led by their hope, untempered by wisdom, to rush off to quicker deaths than awaited them at home. Dr. Bridge related several cases of this kind, and called on the profession at large to be more discriminating in their choice of subjects for climatic treatment.

S. A. FRISK read a paper entitled the climate of Nassau. This will appear in a future issue of *American Medicine*.

Impressions of California Resorts.—GUY HINSDALE (Philadelphia). This was a characterization of California health stations, and was founded on the experiences of a recent tour of the Pacific Coast. The surroundings of Mount Shasta, San Francisco, Palo Alto, Monterey, Santa Cruz, and Santa Barbara were depicted, and notes regarding the favorable and unfavorable influences of the various climates were given. The visit was made in June, and contrary to expectation the weather was not uncomfortably warm even in Southern California. During the winter and spring eastern visitors are accustomed to spend several months in the more famous resorts, but midsummer is perfectly agreeable at all points on the coast and is not too hot for comfort inland.

Influence of Altitude on Heart Disease.—R. H. BABCOCK (Chicago) has observed two cases of pure and uncomplicated obstruction of the mitral orifice in females who declare they feel better in the mountains of Colorado than at Chicago. One of them is relieved of asthma at an altitude of 10,000 feet, but, as she takes very little exercise at the high elevation and does a great deal of walking in Chicago, there are other factors to be taken into account in discussing the merits of a given case. Dr. Babcock described another case, in a woman who has a mitral narrowing with a patent foramen ovale of congenital origin, whose history is interesting. She could ride horseback in the mountains of California and at Asheville, but at San Francisco she had an acute pulmonary edema, with asthmatic symptoms. Babcock was inclined to think that it required a condition of cardiac overstrain to develop her asthmatic tendency which recurred at the lower levels. All these perplexing conditions were discussed but no satisfactory explanation was afforded. Babcock believes that if a cardiopath will remain inactive until accustomed to the altitude he can visit the mountains and journey to California with immunity from symptoms. Persons with healthy hearts are more likely to overdo and overstrain themselves, and the altitude is frequently blamed when the imprudence of the individual is the real cause of trouble.

Role of Local Sanatoriums in Preventing the Spread of Tuberculosis.—DELANCEY ROCHESTER (Buffalo, N. Y.) believes that all cases should be reported and registered; that the health department should send an inspector to determine whether the case is one for home or sanatorium treatment. The patient should be taken care of at the State's expense, if necessary, in a sanatorium, and provision made for disinfection of premises, cremation after death, and other measures as required. Dr. Rochester takes radical ground and feels justified in this in view of the serious nature of the problem.

VINCENT Y. BOWDITCH (Boston) reported on the subsequent histories of 164 cases of tuberculosis treated at the Sharon Sanatorium during the past 11 years. Elaborate tables were shown giving all the details. These showed arrest in 79 and death in 12. The present condition of the remaining 67 cases was given and the present occupation. The results were highly creditable, considering the harsh, changeable climate and proximity to the seacoast.

Discussion.—E. O. OTIS said that it is one of the most difficult things to obtain the subsequent histories of these patients. Trudeau, Fisk and Solly have published similar records from their private practice, but by no means as extensive as those presented by Bowditch. Otis expressed the thanks of the society to Dr. Bowditch for the immense amount of labor represented.

Dispensaries for Tuberculosis, with a Description of the Tuberculosis Department of the Boston Dispensary.—EDWARD O. OTIS (Boston). The Boston Dispensary has been in existence for over 100 years, but the department for tuberculosis was organized only in 1899. Two hundred and seventy-five cases of tuberculosis were treated last year. Incipient cases are referred to the examiners for the State Consumptive Hospital at Rutland, Mass. More advanced cases, not admissible to the State Hospital, are provided for at home or in the vicinity of Rutland, if possible to send the patients away from home. The district physicians, accompanied by visiting nurses, attend patients too ill to come to the dispensary. If proper food cannot be obtained by the patient arrangements are made with a diet kitchen to supply it. Circulars giving instruction as to the means of prevention are issued. The x-ray is used in the diagnosis of tuberculosis and Dr. Otis stated that it frequently shows a greater extent of disease than is indicated by the physical examination.

Discussion.—DELANCEY ROCHESTER (Buffalo) referred to the need of two classes of sanatoriums, one for the advanced and one for the incipient cases, and said that every case of tuberculosis should be committed to such an establishment, both for his own good and that of the public in general. JUDSON DALAND (Philadelphia) said that the practical difficulty is that these cases require a great deal of time and study. He believes that large institutions should establish a separate clinic for tuberculous patients. LEONARD WEBER (New York City) advocated the establishment of hospitals for tuberculosis in large cities, especially for the advanced cases, believing that in that way the dangers of infection will be diminished. ARNOLD C. KLEBS (Chicago) spoke of the limitations of sanatoriums and the wider field of the dispensary. The Visiting Nurses' Association of Chicago has appointed a committee of 40, 16 of whom are physicians, to organize an information bureau, so that medical aid, food, and money and employment may be judiciously provided. When information reaches the bureau of a case of tuberculosis in a private family a visiting nurse will be sent to the home of the patient, or if the case warrants it, the association will endeavor to place the patient at some outdoor work on a farm or elsewhere. F. I. KNIGHT highly commended the work of the Boston Dispensary.

[To be continued.]

AMERICAN MEDICAL ASSOCIATION.

Fifty-fourth Annual Meeting, Held at New Orleans, La., May 5 to 8, 1903.

[Specially reported for *American Medicine*.]

Section on Practice of Medicine.

FIFTH SESSION (CONCLUDED).

Hemoglobinuric Fever.—WALTER SHROPSHIRE'S paper abounded in statistics which appeared to prove that hemoglobinuric fever is due to the malarial parasite. He strongly combated the somewhat prevalent opinion among general practitioners that quinin in large doses or in any dose is an etiologic factor. That the malarial parasite is the cause is impliedly proved by the fact that the disease occurs only in violently malarial localities and among chronic malarial victims. The disease yields to quinin treatment when the drug is given hypodermically or intravenously, and in large doses. Forty grains daily at first and gradually reduced. A chologog, preferably calomel, should precede the quinin. The latter may be accompanied by methylene-blue with advantage. Quinin, even in poisonous doses, never produces this disease in the nonmalarious or mildly malarious cases; therefore it is illogical to claim that this drug causes the disease. A tabulated report of many cases was shown.

Discussion.—WM. KRAUSS said blood examination of those suffering from hemoglobinuric fever most frequently shows absence of the malarial parasite, therefore why cinchonize? He does not believe the disease is caused by the malarial parasite, though in many cases this germ may be a predisposing factor. The true condition is one of blood hemolysis. He refuses to give quinin. BARRIER said he formerly gave quinin in these cases, but has ceased to do so. J. B. McELROY said the disease depends on a condition induced by the malarial parasite, though it is not purely malarial. Early in the process the malarial germ is found in the blood, but it later appears to leave the peripheral circulation and remain in the deeper vessels. In some instances the germs appear to perish once the disease is established. Quinin is probably a causative agent from its hemolytic action. It may be given with advantage in the intermittent cases, but not in the continuous. It often appears to aggravate the condition. W. S. THAYER thought the symptoms are not malarial, but the malarial parasite has probably prepared the patient for the disease, and yet appar-

ently about the same condition may arise in other diseases, as in typhoid. It occurs most at a time of year when malaria is dying out and people are cachectic. Theoretically, quinin should do no good, yet it should be given if the malarial germ is found in the blood. WILLIAMS, of Scotland, said he had seen a good deal of hemoglobinuria in South Africa. It appears to have no relation to infection, yet it may be a latent condition resulting from malarial infection. SOUTHERLAND said all formerly treated the disease with quinin, but he ceased this as a routine measure 10 years ago. Cases differ so greatly that we cannot treat all alike. To get all the emunctories at work should be the early aim in treatment. Copious draughts of hot water and purgation should be instituted early. L. A. YARBOROUGH agreed in the main with Southerland. The stomach should be washed out early, and purgation started at once. If there is supression of urine, get the kidneys to acting at once or the issue will be rapidly fatal.

Clinical Aspects of Tuberculous Peritonitis.—JOSEPH EICHBERG said necropsy shows that from 2% to 3% of all cases have had at some time in life a tuberculous peritonitis. Effusion as a symptom depends on the time observation is made. It is often absorbed. Fever is inconstant and may disappear for months. The symptoms of the disease are very variable and no two cases present the same. Fever may be high if ulcers are present. Pain may be present and very erratic. Diarrhea is present only when the intestines are the seat of disease. Constipation may be very marked from adherent intestines. The disease is rare in children under 1 year, but common from 6 to 10 years. It is often overlooked because of the great tendency to spontaneous cure. Most patients recover under medical treatment. He is distinctly opposed to surgical treatment in these cases. E. J. BROWN and WILLIAMS agreed with the essayist that surgical treatment should not be permitted. JAMES TYSON said his experience had been that to treat medically is to temporize. Surgical treatment promises most.

Tuberculosis in the Negro.—SEALE HARRIS said tuberculosis was unknown among the native Africans until carried to them by the slave traders. It was a rare disease among the slaves of the South. At the present time it is proportionately three times as common among the southern negroes as among the whites. The habits, environments, and his fondness for unhygienic urban life have markedly contributed to this condition. Formerly the average chest capacity in the negro equaled that of the white. At present it is considerably less. The almost universal prevalence of venereal diseases among the negroes makes their tissues less resistant to tubercle invasion. All forms of tuberculosis except lupus are very prevalent among the negroes. Tuberculosis combined with syphilis seriously threatens the race. Eminent authorities are quoted. The remedy lies in education, particularly physical and hygienic; isolation and sanatoriums.

Discussion.—A. D. SMYTHE said in his country there were 5,000 whites and 50,000 blacks. The free open country life, with regular hours and good food, saved the negro in slavery days. Today the whole condition is reversed. Tuberculosis and syphilis, natural results of idleness, urban life in the slums, drunkenness, are decimating the race.

Should the Tuberculous Patient Know the Truth Regarding His Condition.—C. P. AMBLER held that the patient should be told, not only that he may cooperate intelligently with the physician, but also for the safety of others. Physicians have wrongly educated the public to believe tuberculosis is always fatal. Many patients go to the health resorts not knowing they are tuberculous. This should never be permitted, much less connived at by their physicians. Patients sooner or later learn their true condition, and it is far better to be frank and honest with them at the beginning and tell them the truth.

Discussion.—WM. KRAUSS thought it not always necessary to tell him the whole truth, but that his lungs are in a dangerous condition, and thus prepare him for the truth. THEO. POTTER said there is nothing to discuss—patients should be told. Improved methods of early diagnosis, and the present plan of treatment are taking away many of the terrors of tuberculosis if seen in time.

Section on Surgery and Anatomy.

FIFTH SESSION.

At the opening of the session the Nominating Committee was called upon to report, and suggested the names of Charles A. Powers, of Denver, for chairman; E. Wyllis Andrews, of Chicago, for secretary; and William J. Mayo, of Rochester, Minn., as representative of the Surgical Section in the House of Delegates. The report of the committee was unanimously adopted.

Necessity for More Care in the Treatment of Skull Fractures.—W. H. EARLES (Milwaukee). Fractures of the skull are not always recognized as such until too late. When not properly treated at or about the time of fracture, they frequently result in death, and, if not in death, in serious remote consequences. When properly treated they usually terminate satisfactorily. With ordinary care and cleanliness, fractures of the skull may be successfully treated by the average surgeon, and under ordinary conditions. The duty of every surgeon

treating such fractures is to know that he has done all possible for his patient.

Discussion.—SHERRILL (Louisville) believes that almost all cases of fracture of the skull should be operated upon. In all doubtful scalp injuries we should incise and investigate to see whether there is a compressed fracture. WAGNER (Chicago) reported the case of a boy who fell three stories from a window sustaining severe injury to the skull. For three hours after the injury the boy was practically pulseless. A depressed fracture was elevated, a good recovery resulting. DAVIS (Omaha) said no matter how much or how little is the injury to the bone, the injury to the brain is the all-important factor, and symptoms should guide us when to operate in such cases. Davis cautioned against indiscriminate operation and attempting to do too much in such cases. BROWN (Alabama) reported a case of rupture of the middle meningeal artery from whooping-cough. A clot formed, which caused paralysis of the entire left side of the body. Operation was followed by a good result.

Epispadias: Report of a Case Treated by a Modification of Cantwell's Operation.—JAMES B. BULLITT (Louisville). This operation is not as well known as it deserves to be. It consists in separation of the two cavernous bodies back to the symphysis pubis and transplantation of the urethra to the underside of the penis. The urethra can usually be separated out as a tube and drawn forward far enough to suture to the glands. In Bullitt's case, a boy, 7 years old, was operated upon. It was impossible to get sufficient length of the urethra to suture to the glands, and Bullitt resorted to a modification suggested by Van Hook of turning in a flap from the preputial hood to make a tube to which the urethral tube is sutured. The boy has occasional dribbling of urine by day, but no incontinence except by night. There is still a small fistulous opening from which a few drops of urine escape.

Discussion.—PARHAM (New Orleans). The older methods of treating epispadias are very frequently unsuccessful, and Parham believes this method is much the simplest and the best method thus far devised. It may be unnecessary to separate the corpora cavernosa, and it is never difficult. The modification which Bullitt credited to him he has never found opportunity to use personally, and he was much pleased to know of its successful use by others. MARTIN (New Orleans) suggested the control of dribbling in Bullitt's case by the injection of paraffin. FENNER (New Orleans) finds the chief difficulty of the operation in dissecting out sufficient of the urethral tube, though it has great distensibility. It is important to use absorbable sutures in these cases. In his case a stitch abscess resulted about a silk suture which he used. He believes it is better to postpone operation in these cases until the patient is 10 years old, for then he can give great assistance by voluntary control of the bladder. A perineal opening is advisable to drain the bladder until healing has taken place. BULLITT, in closing, expressed the belief that had he used perineal drainage, as suggested by Fenner, the fistulous opening would have been avoided in his case. He finds it difficult to dissect the mucous membrane of the urethra away from the glands, and Van Hook's method is of aid when this is difficult. He emphasized the importance of separating the corpora cavernosa far back.

[To be continued.]

Section on Obstetrics and Diseases of Women

THIRD SESSION.

Fixation of the Prolapsed Kidney.—A. H. GOELET (New York) said there are many methods of fixation, many inefficient. The technic submitted has been uniformly successful. External support is ineffectual. It is a substitute for relaxed abdominal walls. In but a small proportion of the cases are the abdominal walls relaxed. An attachment of the organ, with the colon, may pull it down. Belts and corsets may be of use before the descent of the viscus. The indications are always for operation when the organ has descended below the last rib in front. Also, when there is lack of health or of comfort; the draining of the urine is prevented by such descent. The circulation and function of the kidney are impaired. The ovarian vein is pressed upon—a cause of pelvic disease. Nephropexy is justifiable oftentimes in neurasthenic or hysterical patients. The usual preparation should be made for operation. In addition, the correction of digestive disturbance, the securing of the normal function of the liver, careful dieting previous to operation, prevent complications. Important points in the operation are: permanent fixation, separation from the colon, avoidance of mutilation of kidney or patient, the securing of relief of symptoms. The patient in operation should lie upon a pillow, incision should be vertical at the outer side of the rectus muscle down to the aponeurosis; the quadratus should be retracted, the transversalis separated; the fatty capsule is removed, exposing the kidney. Split mostly with scissors. It is generally necessary to deliver the kidney, not always so. Care should be taken to free it entirely from its fatty capsule, the latter being tucked under its lower extremity as a pillow. In inserting the sutures, it is not necessary to deprive the organ of its fibrous capsules. The sutures do not penetrate the parenchyma. The fixation is firmer when the capsule is not stripped back. The suture material used is silk-

wormgut. The sutures are brought through the abdominal wall at the upper angle of the wound and tied over a roll of gauze. In closing the wound, the fascia is united by continuous catgut, the skin by subcuticular suture. A strip of gauze is introduced at the lower angle of the wound to provide drainage and to help support the kidney. The drainage is removed in 48 hours. Eighteen causes of failure were recited, some of them being delay in operating; impaired digestion; ptosis of other organs; failure to prepare the patient; failure to remove fatty capsule; improper insertion of sutures; failure to immobilize; too early removal of sutures; delay in removal of gauze; excessive vomiting or coughing; too early activity of the patient; corset worn too early; attachment of organ too low down. The author has done 159 operations on 126 patients without death or failure. This indicates that the risk of operation is entirely warranted.

Discussion.—WAGNER (Chicago) stated that he had used upon the kidney when he could not rely upon adhesions the guy rope suture. The idea of drainage presented corresponds to the plan of Senn, that of causing adhesions. It may be advisable to leave the gauze for five or six days in order to invite adhesions. DUNNING (Indianapolis) stated that he was one of the early ones to begin experiments in this operation. He has given up getting fixation without opening the fibrous capsule. He believes that if Dr. Goelet should leave out the gauze he would have some failures. The advantage of failing to open the fibrous capsule is not seen. By the incision described the kidney still remains below its normal position. This is thought unimportant. It is believed that opening the capsule relieves pain and aids adhesion. Failure is often due to bad after-treatment. RICKETTS (Cincinnati) commended the use of silk-wormgut. He believes in lifting the kidney higher up. It may be a mistake not to split the capsule; it may be a prophylactic for Bright's disease. He does not think it wise to split the capsule of a healthy kidney. CLARK (Philadelphia) raised the two questions: What is a movable kidney, and what is the best method of attaching it? In celiotomies he makes it a habit to measure the range of kidney mobility. He has found that of the right kidney to be 2.5 cm. to 3 cm., that of the left 0.75 cm. Of the methods of fixing the kidney he has drifted to that of splitting the capsule, suturing much as Dr. Goelet. BONIFIELD (Cincinnati) remarked that all movable kidneys do not require operation, just as many hernias do not demand operative interference. The mobility of the kidney is largely dependent upon the general condition of the patient, the amount of fat, etc. He urged the general treatment of the health. CRAIG (Boston) asserted that he had seen cases associated with ptosis of other viscera in which the abdominal belt had aggravated the condition. The belt acts as any splint and by long use weakens the muscles. GOELET, in closing, stated that if the gauze were allowed to remain more than 48 hours wound discharge would collect and interfere with union. Stress was laid upon the necessity of freeing the kidney from all attachments. He has left the gauze drain out with good success. He does not consider the operation a serious one. He now never recommends abdominal belts; the condition is finally made worse by their use. He cited a case in which by the use of a belt the kidney had become fixed in a malposition, complicated with pyelonephritis.

[To be continued.]

Section on Sanitary Science and Hygiene.

THIRD SESSION.

The committee on nominations reported officers elected: President, G. T. Swarts, of Providence, R. I.; secretary, J. S. Fulton, of Baltimore; executive committee, S. G. Egbert, of Philadelphia; delegate to the House of Delegates, H. M. Bracken, of Minneapolis.

Tent Life in the Treatment of Pulmonary Tuberculosis.—R. W. CRAIG (Phoenix, Ariz.) stated that in 1900 14% of the deaths in the United States were due to tuberculosis in one form or another; 65% get well after infection by the tubercle bacillus, as evidenced in the signs of former lesions found at autopsies. The out-door treatment of the disease is based upon this idea and the cure of the disease depends primarily upon the resistance of the patient to the disease. There are two forms in which the disease may terminate in cure; either in caseation followed by cicatrization or by calcification. The rational treatment of tuberculosis should be based upon the idea of increasing the resistance of the tissues to the invasion. The value of tuberculin is doubtful and creosote, guaiacol and such drugs as interfere with digestion do more harm than good. Most cases recover with good food, air and personal hygiene. Early diagnosis of the disease is important and often difficult before the appearance of the bacillus in the sputum. General malaise, loss of appetite, afternoon rise in the rate of the pulse and slight afternoon rise in temperature are pathognomonic symptoms. Cure depends upon early diagnosis before the secondary infection by pyogenic bacteria. The altitude of a region is not as important as the relative humidity of the atmosphere, the presence of sunshine, moderate exercise and good food with the absence of dust. In Arizona there are less than fifteen rainy days during the entire year. A dry climate is the best for the tuberculous patient. The temperature is not as important as the relative humidity of the atmosphere.

The sensibility to heat in Arizona is much less in Arizona than in Chicago. The mean temperature is 77° F. Altitude has no influence of itself and he considers that a high altitude is contraindicated for those patients in the advanced stages of the disease. Effusion into the pleuras in these cases is nature's method of immobilizing the lung. The ribs should be immobilized. It is the duty of the physician to instruct patients in personal hygiene previous to sending them West, and he should inform the patient of the fact that he or she has the disease and the dangers of spreading the disease. Physicians make a mistake in telling patients to take violent exercise. Any overexertion causes a rise in the temperature of the patient with a return of the cough. Tachycardia is a contraindication to exercise. It is impossible to obtain perfect ventilation in a room and the ideal sleeping apartments for the tuberculous patient is the tent house. It should be free from drafts. At Phoenix, Arizona, they are built on the pavilion plan with sides of wood for the lower half and canvas curtains for the upper half. The wooden floor is raised at least two feet from the ground. The canvas sides can be rolled up and the house converted into an open pavilion. There are two or three rooms in each house. In addition to the tent house they have tent yards which are enclosed in canvas but open to the sun. Patients can thus get the benefit of the sun by reclining in these yards, with no danger from drafts. The results from the treatment have been excellent. The results are increased appetite with an increase in metabolism, and subsidence of all cough, anorexia and malaise.

Discussion.—J. L. McCONNELL (New Mexico) said the value of tent life cannot be overestimated. Immobilization of the ribs is very important. The octagonal tent is the best as it lessens the danger of the wind entering at the corners. The boarding on the sides should not be flush with the flooring, but an intervening space of about one foot should exist, and this space closed by canvas which can be raised after the patient is in bed. An umbrella-like opening in the roof of the tent which can be opened after the patient retires gives good ventilation with no drafts. No medication is necessary. J. N. HURTY (Indianapolis) considers, as a sanitarian, that the inhabitants of tent houses should be compelled to observe certain sanitary regulations. The majority of the tuberculosis of mankind is caused by bad ventilation, and the masses should be educated as to the importance of good ventilation. The custom of closing the sleeping-room airtight is an abominable custom, and because a child has temperature is no reason for keeping it in a closely confined room. On balmy days the place for every one, whether ill or not, is in the sunshine. The masses can be reached through the public schools. Indianapolis has sent out lecturers to the various schools to lecture upon the value of good ventilation. Economy in building a schoolhouse is an evil when it is accomplished at the expense of good ventilation. If there were proper ventilation in all of the schools and workshops tuberculosis would not be so common. JAMES L. WATT (New York City) says that in the arctic regions the Indian has no sunlight during winter and accordingly at the end of winter he is run down, emaciated, and anemic. There is a large number of tuberculous patients among these people. Physicians, in sending patients to antituberculous regions, should tell them what to do and how to live. SWARTS (Providence) said that a great number of tent-house patients take up farming as an industry and they are well able to perform the necessary manual labor. CRAIG, in closing, stated that a patient with a temperature above normal should not exercise at all. If kept in bed in the recumbent position the temperature will decline to normal in one week. They can eat as much as they choose, however. The water around Phoenix contains a large amount of lime salts and patients drink considerable of it. In nearly all of his autopsies there were calcareous nodules and he makes the hypothesis that the water has some influence on the formation of the calcareous nodules.

[To be continued.]

Section on Nervous and Mental Diseases.

THIRD SESSION.

Atrophy of Hand Muscles with Localized Sensory Disturbances: Possible Early Syringomyelia.—D. I. WOLFSTEIN (Cincinnati). The patient was an unmarried woman, aged 27, who came under his observation on February 27, 1903, complaining of a localized wasting of the muscles of the right thumb. Her occupation was that of a laundress and general house-servant. There was no history of traumatism, and her family history was negative. She stated that she had suffered from pain in her right arm since her twelfth year; this pain was never severe in character, and was always more noticeable after heavy muscular effort. The arm had seemed weaker at times than its fellow, but it had not interfered with her work. There was no muscular twitching, and subjective sensory disturbances were never observed. At no time did she complain of any numbness, tingling, or coldness. There were occasional cramps in the fingers of the affected hand. There was a narrow area of sensory change beginning at the internal condyle and extending in a straight line not over one half inch at any point to the pisiform bone. In the upper third of this area there was thermoanesthesia, and other objective sensory disturbances.

These did not exactly correspond to the dissociation type of syringomyelia. Wolfstein said he was inclined to believe that the case belonged to the type of uniradicular palsies described by Buzzard. The symptoms pointed to involvement of the root of the first dorsal nerve, evidently in such a way as to exclude the sympathetic fibers for the pupil.

Discussion.—H. T. PATRICK (Chicago) said he did not think any positive conclusions could be drawn from the symptoms in the case reported by Wolfstein. They suggested, however, the not uncommon type of atrophy of the hand muscles resulting from overwork and over-muscular strain. It was seen most frequently in slender, poorly-nourished seamstresses, and in girls working in book-binderies, as well as in other lines where a certain group of muscles were overtaxed. WHARTON SINKLER (Philadelphia) said he was inclined to accept Patrick's explanation of the symptoms. A. E. STERNE (Indianapolis) expressed a similar view. F. W. LANGDON (Cincinnati), who had seen the patient with Wolfstein, said that while at first glance he had thought the case was one of early syringomyelia, the subsequent symptoms had practically excluded that affection. He did not agree with those who had attributed the symptoms to the patient's occupation. It was hardly possible to conceive of an occupation atrophy that would merely affect one or two muscles. The sensory disturbances were also peculiar. WOLFSTEIN, in closing, said he thought an occupation-neurosis could be absolutely excluded.

Ten Cases of Chronic Morphinin and Results of Treatment.—These were reported by A. J. PRESSEY (Cleveland), and were all very aggravated cases. Each of the cases had been cured more than three years. The writer stated that neither the length of time the drug had been used, the quantity used daily, nor the method of administration seemed to be a bar to permanent recovery.

The Nervous Phenomena Associated with Movable Kidney.—WHARTON SINKLER (Philadelphia) stated that the frequency of movable kidney was a point on which there had been wide divergence of opinion. All authorities agreed, however, that it was much more common in women than in men, and they also agreed that it most frequently occurred between the ages of 25 and 40 years, and was rarely met in girls before the time of puberty. They also agreed that it was most common in women who had been pregnant. Some writers stated that this condition of the kidney was met in 25% of women who were examined for pelvic trouble, while others regarded the condition as comparatively rare. The symptoms of multiple kidney were for the most part reflex in character, but there were also those which were local, or due to mechanic action. The principal symptoms connected with displaced kidney were pain and those associated with dyspeptic and neurosthenic disorders. Intestinal disorders were also common. Neurasthenia was probably the most constant nervous affection in a patient with displaced kidney. The treatment of movable kidney was palliative and radical. In a certain proportion of cases the application of abdominal bands with properly adjusted pads sometimes afforded relief, but in the majority of instances the use of any apparatus was entirely unsatisfactory. Many cases in which the amount of displacement was moderate in degree were benefited by such a plan of treatment. As long as the patient was on her back, the kidney remained in a normal position. When the rest treatment had been faithfully tried without benefit an operation should be resorted to.

A Consideration of the Neuroses of Status Lymphaticus.—A. P. OELMACHER (Gallipolis, Ohio) described the morbid anatomic features of the condition and stated that a persistent and hypertrophied thymus gland was its most prominent anomaly. He emphasized the relationship between the status lymphaticus and rickets and described certain neuroses with which the lymphatic state had been associated.

[To be continued.]

Section on Ophthalmology.

FOURTH SESSION (CONTINUED).

Discussion.—FULTON (St. Paul) referred to the epidemic in St. Paul in which the eye-complications were of a similar character to those reported by Dr. Baker, though perhaps not so acute. He thought it quite possible that it was the same eruption as that occurring on the skin. CONNOR (Detroit) referred to the evil results that had followed the attempts to stamp out the disease by methods of disinfecting and ordinary cleanliness without vaccination; a great trouble was that so many people of more than ordinary intelligence could not be made to see that they were not capable of judging concerning matters about which they had never studied. He thought that facts such as those brought out by the paper of Dr. Baker were great aids in making the people understand the necessity for vaccination. MANN (Texarkana) had had six cases of corneal ulcer resulting from smallpox, in two of the cases the eyes being lost; treatment had no effect. DONOVAN (Butte) said that in an epidemic a few years ago the subject of whether or not the eye complications were the initial lesion was considered, and in some cases it was decided that the eruption appeared on the eye at the same time as on the skin. MILLER (Los Angeles) thought the paper of Dr. Baker presenting such interesting statistics would greatly aid in enabling physicians to bring the laity to a realization of the horrors of smallpox and the value of

vaccination. MORROW (Canton) referred to a case occurring in his practice where the corneal complication was undoubtedly the inoculation lesion; the patient had slept two weeks before with a cousin supposed to have chickenpox but who had smallpox; seven days before the eruption he had the corneal lesion, showing itself first as a small distinct white spot. THOMPSON (Indianapolis) had seen a number of eye complications in their recent epidemic; in the confluent form he had 10 cases of corneal ulcer and lost 4. GREENWOOD (Los Angeles) thought it reasonable to expect that Councilman's discovery would lead to its treatment by a serum and that it would be controlled as diphtheric conjunctivitis had been. HILSHER (Spokane) had had cases in which there appeared a conjunctivitis before the eruption came on resembling a phlyctenular conjunctivitis. WEEKS (New York) thought the determination of the percentage of eye affections occurring in smallpox was of great interest. It was also of interest to know that sometimes the eye was affected primarily, as he had supposed that in all cases the eye affection was a secondary one, due to the entrance of substances from the lids and brows, together with an abrasion of the corneal epithelium. He thought the use of oily substances would help prevent the introduction of infection into the eyes.

Skin Grafting on the Eyelids.—OSCAR DODD (Chicago) referred to the surgical principles involved and the conditions requiring the operation—as cicatrices, tumors, etc. He considered the objects to be obtained and the kind of grafts best suited to obtain good results. The advantages of the pedicle graft were the source of nourishment afforded and the firmness, but they were too heavy for the upper lid. The Wolfe grafts were uncertain in results, due to shrinking. He concluded that for the upper lid Thiersch grafts should always be used. That where there is dense cicatricial tissue the pedicle graft is most satisfactory. Should pedicle grafts not be available in such instances then the Thiersch graft could be used.

Entropion and the Operations Employed for Its Relief.—JOHN O. McREYNOLDS (Dallas, Texas) discussed the nature of entropion, its causation and pathology, and gave a brief review of the various operations employed, with a modification of the principal ones.

Discussion.—WILDER (Chicago) concurred with Dodd as to his conclusions—that when one could get a pedicle graft there was better nourishment—and when there was a contracting scar the Thiersch grafts would shrink. As in the operation for entropion, there was no one operation that would meet all cases, a combination must be made. HAWLEY (Chicago) preferred the use of the Thiersch graft whenever possible. TODD (Minneapolis) referred to the importance of removing the muscular tissue from the under as well as the upper surface of the tarsal cartilage. He referred to the instrument introduced some time ago by Wilder for removing grafts from behind the ear or the palm of the hand. For controlling the hemorrhage he now used adrenalin with gratifying results. MILLER (Los Angeles) had also used adrenalin, but thought there was danger of secondary hemorrhage following its use. He sometimes had an assistant compress the temporal artery for this purpose.

Traumatic Lesions of the Ocular Adnexa, with Report of a Case of Contused Wound of the Eyebrow Resulting in Complete Monocular Blindness Unaccompanied by Ophthalmic Changes.—ELLET O. SISSON (Keokuk, Iowa) illustrated a number of cases of traumatic lesions of the eyebrows, orbital walls and soft parts. Wounds of the ciliary region were frequent. He considered the results of injury to the supraorbital nerves. Direct fracture of the superior wall of the orbit was liable to involve the optic nerve. One case was a severe cut over the eyebrow followed by total loss of vision, but within one month vision returned until the patient could see large objects about the room. There had been indirect fracture of the optical canal, resulting in injury to the optic nerve, followed by retrobulbar neuritis. Another case illustrated the result of injury to the soft parts, and was rare in that there was either rupture of an ocular muscle, detachment of its tendon from its insertion into the sclera or an injury to a motor nerve, complicated with an injury to the terminal branches of the superior maxillary nerve with loss of sensation of the parts supplied. The writer referred to the necessity for a guarded prognosis in all cases; the value of asepsis and antisepsis in the treatment of all wounds located in this region.

Report of a Case of Complete Absence of Both Eyeballs at Birth.—LAWRENCE R. RYAN (Galesburg, Ill.) made report of a very unusual and remarkable case. The parents were apparently healthy, the father aged 50 and mother 35, and first cousins. He considered that consanguinity might be an important factor in the causation. Aside from deformities the child was normal. The brain was unusually well developed, and up to the time of death, which occurred at 3 years, showed the ordinary progression of childhood.

Discussion.—WOOD (Chicago) thought that there was really no such thing as true anophthalmos; the term was not a proper one, because if the case is thoroughly worked out some trace of the eyeball is found. BALL (St. Louis) had reported a case occurring in a child that lived 6 months; lacrimal glands were large and secretion existed. The whole subject had been worked out by Von Hippel, who had collected data in something like 80 or 90 cases. CLAIBORNE (New York) had reported a case in New London two years ago of total anophthalmos. He thought Dr. Wood correct about the wrong use of the word

"anophthalmos," but considered that we must have some term to express the condition. AYERS (Cincinnati) had seen a few years ago a case of so-called total anophthalmos, in the line between the lids there being nothing visible but smooth mucous membrane, as though an enucleation had been done.

Exhibition of New Instruments.—W. C. POSEY exhibited an apparatus devised for convenience in carrying bottles of collyria and for preparing compresses of heat and cold. W. F. SUKER exhibited an instrument to facilitate the demonstration of the fundus of the eye to students, so that three students at one time could observe the fundus. TODD (Minneapolis) exhibited a tendon tucker, an improvement over the one presented by him last year.

[To be continued.]

CONFERENCE OF STATE BOARDS OF HEALTH AND THE SURGEON-GENERAL OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

First Annual Meeting, Held in Washington, June 3, 1903.

The first annual conference of the State and national public health officers, for which a call was recently issued by Surgeon-General Wyman, in accordance with the provisions of an act of Congress approved July 1, 1902, met June 3. The boards of health of 21 States were represented.

The conference was presided over by General Wyman, and after the meeting was called to order Assistant Secretary of the Treasury Armstrong, on behalf of the government, welcomed the delegates, and assured them that everything would be done to make their stay as pleasant and profitable as possible. He said that in the great work of improving the health conditions of the country cooperation between the States and between the States and nation was the secret of success, and he promised in the name of the national government to do everything to further this end.

Surgeon-General Wyman, in his opening address, outlined the purposes of the conference and what it is hoped it will accomplish. He said the great end in view was closer association and union of effort between State and national health authorities. He then briefly described the system and workings of the United States Public Health and Marine-Hospital Service and suggested a plan of organization by which the work of the national and State health administrations might be coordinated and made more effective.

Dr. Foster, of California, gave a description of quarantine operations in that State, particularly in relation to the plague danger in San Francisco. He said that with the vigorous cleaning out of Chinatown the fear of another attack of this disease was rapidly disappearing. He attributed the success achieved to the hearty cooperation existing between the city, State, and national health officers in endeavoring to stamp out the infection. Dr. Foster was followed in interesting talks by Drs. Townsend, Porter, Egan, Conniff, Bailey, Souchon, Young, Fulton, Baker, and Woodward.

At the suggestion of Dr. J. Y. Porter, of Florida, a telegram was addressed to the Florida Legislature expressing the hope of the conference that the act now pending before that body providing for the collection of vital statistics would receive favorable action.

At the afternoon session the discussion of local health and quarantine conditions was continued, each representative explaining the sanitary laws and the method of carrying them out in his particular State, addresses being made by Drs. Westbrook, Hunter, McAlester, Probst, Lee, Smith, Swarts, Simons, Tabor, and Cooper.

The conference adopted the following resolutions:

WHEREAS, The Conference of the State Boards of Health of the United States with the Public Health and Marine-Hospital Service, having confidence in the earnest efforts and ability of the Governor and State Board of Health of the State of California, acting in harmony with the Bureau of Public Health and Marine-Hospital Service, to thoroughly eradicate bubonic plague heretofore existing in the city of San Francisco, do

Resolve, That in the judgment of this Conference, so long as the present effective work is continued, there is no need for quarantine restrictions of travel or traffic to or from that State.

Resolved, That the methods of cooperation between national and State health authorities suggested by the presiding officer meets the approval of the Conference.

A committee was also appointed to draft a resolution expressing regret at the death of Dr. Mathew Gardner, late president of the State Board of Health.

The various States were represented by the following delegates: California, Dr. N. K. Foster; Connecticut, Dr. J. H. Townsend; Delaware, Dr. E. W. Cooper and Dr. Alexander Lowber; Florida, Dr. J. Y. Porter; Illinois, Dr. J. A. Egan; Iowa, Dr. R. E. Conniff; Kentucky, Dr. William Bailey; Louisiana, Dr. Edmond Souchon; Maine, Dr. A. G. Young; Maryland, Dr. J. S. Fulton; Michigan, Dr. H. B. Baker; Minnesota, Dr. F. F. Westbrook; Mississippi, Dr. J. F. Hunter; Missouri, Dr. A. W. McAlester; Ohio, Dr. C. O. Probst; Oregon, Dr. Andrew C. Smith; Pennsylvania, Dr. Benjamin Lee; Rhode Island, Dr. G. T. Swarts; South Carolina, Dr. T. Grange Simons; Texas, Dr. George R. Tabor; Utah, Dr. T. B. Beatty; West Virginia, Dr. Samuel F. Myers; District of Columbia, Dr. William C. Woodward.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

NEW INSTRUMENT FOR PERINEAL PROSTATECTOMY.

BY
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In a more extensive article which will appear in the *Journal of the American Medical Association*, I have described at length methods for "conservative perineal prostatectomy." I wish here to make a preliminary publication of the instruments which I have devised for this purpose. The first is a "double prostatic tractor," and is shown in Figs. 1, 2, and 3. This instrument was devised to replace Syms' rubber intravesical balloon which is introduced through a perineal urethrotomy wound, inflated and then used to draw the prostate toward the perineum, where it can be reached by the enucleating finger.

The instrument here pictured is introduced closed (Fig. 1) into the bladder through an opening in the membranous urethra; it is then opened by rotating the external handles, as shown in Fig. 2. It is then ready for whatever traction upon its shaft may be necessary to draw the prostate into the perineal wound. The instrument is very strong, and if sufficient traction is used the prostate may be drawn by means of it almost to the cutaneous surface of the wound, thus furnish-

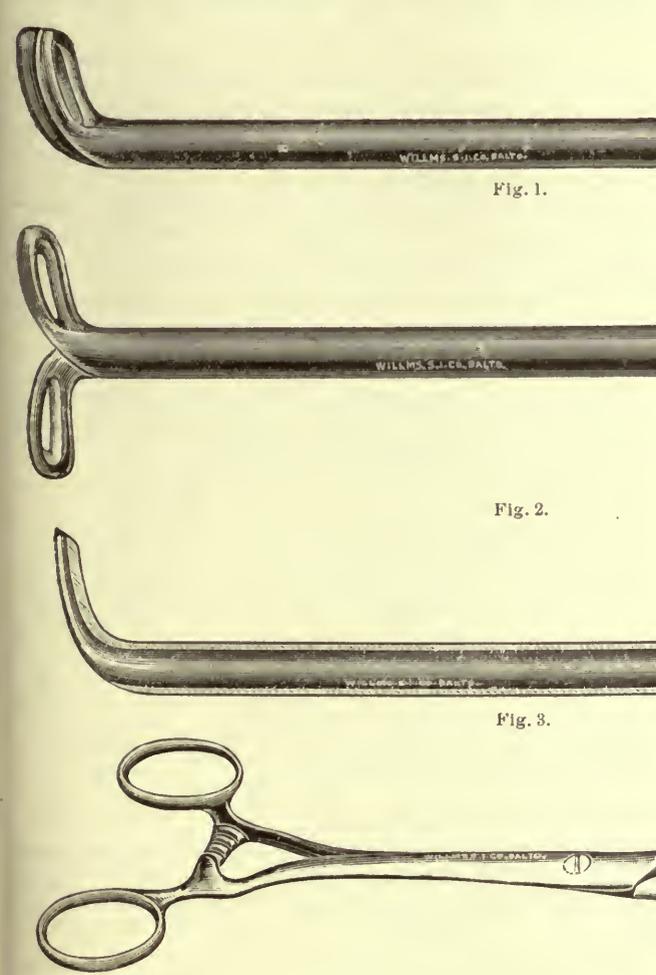


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

ing opportunity to operate so as to avoid injuring the ejaculatory ducts and the prostatic urethra.

After removal of two lateral lobes, a middle lobe may be

caught and drawn down into one of the lateral cavities by turning one of the blades downward, so as to engage it, making traction and at the same time rotating toward the lateral cavity, through which it is desired to enucleate the median lobe. This can be accomplished without injuring the ejaculatory ducts. An anterior lobe can be removed by a reverse procedure.

The forceps which are shown in Figs. 4 and 5 are used to grasp a lobe which has been partly enucleated. They are made something on the order of obstetric forceps, so as to avoid tearing the lobe, thus greatly facilitating the enucleation of the deeper portion. I have used these instruments in 15 cases and have found them of great assistance. There is no need of a suprapubic incision even when the prostate presents great outgrowth into the bladder.



Fig. 5.

The facility which the tractor furnishes for operating on the prostate in a shallow wound, and the preservation of the ejaculatory ducts and the urethra intact, has transformed the operation of prostatectomy in the hands of the author.

THE EFFECT OF ALTITUDE UPON PNEUMONIA.

BY
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of Leadville, Col.

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The article in *American Medicine* of April 4, 1903, entitled, "The Influence of Altitude on the Mortality of Pneumonia," by H. W. Hoagland, of Colorado Springs, has led to the following remarks:

Whether altitude *per se* has any influence, either favorable or unfavorable, upon the mortality, or any other phase of that great unsolved problem, pneumonia, is still an open question. Therefore such contributions to the subject as the one referred to are of great interest and of real value. From the article in question we learn that in 709 cases of pneumonia, at an average elevation of 6,580 feet above sea-level, the deathrate was 22.1%. And in 6,116 cases at the level of the sea the percentage of deaths was 26.8. To this I should like to add a small contribution to the statistics of pneumonia at high altitudes, and so aid in an effort at a more rational, or at least a more uniform and comprehensive understanding of the subject.

During the year 1902, in Leadville, Colorado, at an altitude of 10,200 feet, there were treated in St. Vincent's Hospital 12 patients with pneumonia; of these 8 recovered and 4 died. Outside of the hospital 36 cases came under my personal observation, many of them in conjunction with Dr. J. A. Jeannotte, of this city. Of this number 30

patients recovered and 6 did not. From the records of the St. Vincent's Hospital for the 10 years previous 213 cases were collected, with 59 deaths.

ORIGINAL ARTICLES

ON CYSTS AND OTHER NEOPLASMS OF THE PANCREAS.¹

BY

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For many centuries, and until comparatively recently, the profession were in absolute ignorance of the nature and function of the pancreas. To be sure Wirsung had described its principal duct in 1642, after which discovery it came to be regarded as an unimportant internal gland with some sort of a secretion. The first epoch in its modern history was marked by the experimental researches of Claude Bernard during the earlier decades of the last century. Another occurred many years later when Langerhans described the peculiar structures or portions of the gland which now bear his name. When Fitz described for us, in this country at least, the acute lesions of this "internal spittle gland," as the Germans call it, he created the third epoch, and the fourth began when Gussenbauer first, in 1882, showed how it might be surgically attacked.

The amount of study of the pancreas and the worth of recent literature concerning it may, perhaps, best be gathered by comparing the brief article in Ziemssen with the long monographs of Oser, Robson and Moynihan, Körte and Truhart. The 1,400 different titles given in Oser's bibliography, in the recent American edition of Nothnagel's System, will serve to show the richness of our present library facilities, while the difficulties with which we still make diagnoses of pancreatic lesions will indicate the fact that many of them have been written to, as yet, little purpose.

The materials for an essay on cysts and other neoplasms of the pancreas have been nearly exhausted, and until more experience has accumulated we will have simply to thresh over what has already been placed before us. Our knowledge is much less complete than it would be were not these lesions rare in animals and seldom met at autopsy. At present the existence of a suspicious tumor in the upper abdomen would lead to an operation in almost every case, when, if it were not operated, an autopsy would be later permitted. And so, while the patient is benefited by the operation, the surgeon has only the somewhat meager opportunities of seeing the tumor, in its fresh state to be sure, but through a very limited opening. The surgeon who finds a cyst which he considers has its origin in a pancreatic lesion will deem it for his patient's interest to so deal with it as to cure it, but not to make an autopsy *in vivo*; and so therapeutic considerations become paramount and pathological inquisitiveness must be suppressed.

I gather from a recent paper by Ricketts that in 1730 Behn tried to cure a pancreatic cyst by injecting into it a solution of silver nitrate, and that in 1857 Parsons reported a case of pancreatic cyst due to obstruction of the duct. A number of years before this, *i. e.*, in 1789, von Doeveren reported a case of cancer of the pancreas, while sarcoma as such was first recorded by Paulicki.

Anatomic Considerations.—Aside from the gross anatomy of the pancreas, it is worth while for the surgeon to remember the anomalies that may possibly be met in this region which he may at any time have to encounter, and which might confuse or confound him. These may include:

1. Complete absence of the pancreas, which has been reported as totally lacking in at least one case.

2. Abnormalities of the ducts, of which either one may be absent, or which may empty independently into the duodenum. The duct of Wirsung may be double, or

there may be even three excretory ducts, as in the chicken and pigeon. In 53 of 105 specimens examined by Schirmer, the duct of Santorini passed from the main duct into the duodenum, opening on a papilla an inch above the common duct. In 19 it did not open into the duodenum at all, while in four cases it formed the only pancreatic duct. (Huntington, "Anatomy of the Human Peritoneum and Abdominal Cavity," page 114.) When the duct of Santorini does open into the duodenum it may take the place of the regular duct as when the latter is obstructed by gallstones.

3. One might possibly meet that form of annular pancreas first described by Ecker, in which the descending portion of the duodenum is surrounded or encircled by a band of pancreatic tissue continuous with the body of the pancreas. This portion may have its own duct. Constriction of the gut may be thus produced at this point with dilation of the part above. At least six cases of this character have been recorded. They remind us of the earlier form of the pancreas, when it was largely concealed within and scattered along the intestinal walls and folds of the mesentery. The pancreas may also be divided into two almost separate parts connected by the duct, or it may have an accessory lobule springing from its head and extending anteriorly along the duodenum.

4. An accessory pancreas may also be met. Ruediger has recently collected 20 such cases, of which five were located in the stomach, two in the duodenum, nine in the jejunum and four in the ileum. Three of these were associated with diverticula. (*Journal of the American Medical Association*, April 18, 1903, page 1059.) These may possibly give rise to intussusception or even to carcinoma. (Nicholls, *Montreal Medical Journal*, 1900, Vol. 29, page 903.) They remind us of the pyloric cecums or appendices met in many of the fishes and so well described by Huntington. Each accessory lobe, if large, may have its own duct.

CYSTS.—Oser has been able to collect 134 cases of cysts of all kinds. It seems wise to adopt Robson and Moynihan's classification of these lesions, because it is "as precise as our present knowledge permits:"

1. Retention.
2. Proliferation.
3. Hemorrhagic.
4. Hydatid.
5. Congenital.
6. Pseudocysts—peripancreatic.

1. *Retention cysts* were described by Virchow, in 1863, as consisting of two varieties—one form including a botryoidal dilation of the duct of Wirsung, the other being due to obstruction of the outlet with expansion of the entire canal into cystic outlines, which may attain the size of an orange, and contain mucoid, bloody or calcareous material. This latter form rarely attains a size great enough to require operation. To these types Klebs added a third, originating in the smaller ducts, possibly even in the alveoli, to which he gave the name "acne pancreatica." These are found usually in groups, the larger being formed by coalescence of smaller cysts. The causes of these retention cysts are:

- | | |
|------------|--|
| Intrinsic, | { Impaction of calculi. |
| | { Stricture. |
| Extrinsic, | { Pressure from without. |
| | { Abnormalities of shape or position. |
| | { Closure or obstruction by parasites. |

Impaction of calculi includes gallstones occluding the opening of the common duct in the ampulla of Vater (which may cause chronic pancreatitis, as well as cystic expansion) and pancreatic calculi which may be found at the termination of Wirsung's duct or along its course.

So far as stricture is concerned, it may be found anywhere along the duct. It may be due to healing of a duodenal ulcer, since Perry and Shaw have collected four instances of this kind; or it may be produced by a chronic lesion, or by the friction and abrasion of a calculus, or by the repair following a traumatism. In rare

¹ Read before the Congress of American Physicians and Surgeons, Washington, May 12, 1903.

cases both the biliary and pancreatic passages may be distended from a terminal stenosis or pressure. By Tilger and by others the most common causative factor is thought to be some sclerosing process, with or without such retrogressive metamorphosis of epithelium as permits autodigestion of the gland by its own juice with the resulting formation of a cavity. There are certainly enough cases on record to justify this view, and henceforth chronic pancreatitis must be recognized as the commonest cause of retention cysts by occlusion of the duct.

That the mere closure of the duct is insufficient, occasionally if not invariably, was proved by those earlier experimenters who showed that ligation of the duct is quite insufficient to produce more than a trifling distention of its lumen, the pancreatic secretions being absorbed after the intracanalicular pressure attained a certain degree. Mere mechanical occlusion, therefore, is only a minor factor in this cyst production, something beyond this being at fault. Heinricius finds this fault in a diminishing or disturbed absorption of pancreatic juice, due either to some admixture with nonabsorbable and abnormal substances, or to a lack of function on the part of the absorbent vascular system.

Of the extrinsic causes pressure from without may be produced in ways rather too numerous to recount, including tumors variously placed or originating, calculi, etc.

Abnormalities include relaxation of the pancreatic supports, permitting ptosis or dislocation of a part or the whole of the gland, displacement by adhesions or growth of tumors, cicatricial retractions, and those congenital anomalies to which attention has already been drawn. Occasional instances of these retention cysts are seen during autopsies. To certain of them Virchow gave the name of "pancreatic ranulae." They have also been met unexpectedly during intraabdominal operations not meant for their particular removal. I fear that hereafter few operators will be able to resist the temptation to attack such cysts should they be thus revealed to sight and prove operable; nor, in the light of our present knowledge, is there any good reason why, when thus recognized, their removal or marsupialization should not be undertaken, the patient's condition otherwise justifying it.

So far as the obstruction of the duct by parasites is concerned, it must be remembered that lumbricoid worms have been known to pass from the duodenum into the duct of Wirsung and there cause obstruction, or by their death cause infection. At least two such cases are on record, Durante reporting one of them.

2. *Proliferation Cysts.*—These may sometimes evince malignancy, many of them being so close to the border line between proliferating cystoma and cystic carcinoma that only the subsequent course of events would indicate on which side of this line they belong. They are really neoplasms comparable to certain cysts in other places. They comprise cystadenoma, of which Cumston (*Annals of Surgery*, February, 1903, page 230) has not been able to find reports of more than 15 cases. These are cystic, glandular tumors, multilocular, lined with cylindric epithelium, sometimes forming crypts and sometimes polypoid proliferations. Some of them seem to be independent of the excretory ducts. They occur near the tail rather than near the head of the pancreas, and their contained liquid is often bloodstained. Some writers, believing that these cysts are really of hemorrhagic origin, have called them *apoplectic cysts*, reasoning that hemorrhage is the result of a passive hyperemia which itself is the consequence of a chronic interstitial sclerosing process; nevertheless these are not blood-cysts in the sense that they result from bleeding into a preexisting cavity. Other writers, Tilger especially, believe that the interstitial contraction of the smaller vessels obstructs secretion and that this leads to formation of minute cysts, which slowly enlarge because of the peculiar

character of their contained secretion, their septa being digested away and larger cysts being thus formed, the argument being that the absence of the fibrin digesting ferment shows that it has been used up in this process. But this ferment is not always absent; sometimes it is the fat or the starch digesting ferment which is missing. The truth is that the pancreas is so protected from hemorrhage that most of the conditions which affect it proceed toward it from the stomach or biliary passages, while the conditions which may lead later to a chronic interstitial pancreatitis are numerous; nevertheless traumatism is not without their influence and observations such as are needed to clear up this question have as yet been few in number.

Under the head of *cystic epithelioma* have been described cases of what were probably better called cystic carcinoma as distinguished from primary carcinoma. It should be said that these are essentially cystic formations with cancerous deposits in their walls, perhaps multilocular, usually accompanied by secondary growths in the liver or adjoining tissues. The latter probability would make most of them inoperable.

3. *Hemorrhagic Cysts.*—Here we must distinguish between a hemorrhage into a cyst and a true apoplexy of the gland with resulting cystic degeneration of the clot. Most cysts containing blood belong to the former, *i. e.*, are retention cysts into which blood has escaped in varying quantity. Those to which the term apoplectic can be best applied attain often considerable size, like Gussenbauer's historic first case, are usually solitary and occupy the left end of the pancreas.

4. *Hydatid Cysts.*—These are exceedingly rare. Oser does not mention them. Tricomi says seven cases are on record. Moynihan mentions a case each of Graham, White, and Peters. We may therefore dismiss these with but curt mention. The Briggs case of sarcoma successfully removed proved to be an echinococcus cyst which had undergone sarcomatous degeneration.

5. *Congenital cystic degeneration* resembles more or less that of the other solid viscera. Moynihan mentions but three of these instances. The condition is probably not one which permits of surgical relief, although it might seriously perplex an operator should he come upon it.

6. *Pseudocysts*, as Körte has proposed to call them, constitute a large proportion of cases reported as pancreatic cysts. These are collections of fluid in the lesser omental cavity or bursa, which sustain such intimate relations with the pancreas as well as other viscera—even containing pancreatic elements—that it is impracticable or even impossible to distinguish between them and the true forms above alluded to. They can also be spoken of as peripancreatic cysts; doubtless cysts of the adrenals or even of the kidneys have been thus mistaken.

Of these as a class it must be said that they have very much to do with the pancreas, being the result usually of injury to that viscus. The escape of blood into the lesser cavity of the peritoneum followed by that of pancreatic juice may very easily produce a tumor which, in the living subject, it may be impossible to distinguish from a true cyst. Lloyd has insisted that the fact that a cavity within the abdomen contains pancreatic secretion is no proof that we are dealing with a pancreatic cyst, but merely that it is connected with the pancreas; nor is it enough to feel the pancreas when the examining finger is introduced through an incision, for if the lesser peritoneal cavity is opened through the transverse mesocolon, the finger will enter a large cavity at the back of which the pancreas should normally be found. This cavity varies in capacity in different individuals, as Moynihan has shown. It lies in front of the pancreas, is closely adherent to it with no intervening fat, even in the most obese. If opened through the great omentum, close to the lower border of the stomach, it appears to be arranged in three compartments. Effusion into it must

produce a tumor strikingly resembling a true pancreatic cyst. Lloyd is doubtless right in holding that contusions of the upper abdomen may be followed by development of a tumor in this region due to fluid accumulations in this lesser peritoneal cavity, whose fluid contents may be able rapidly to convert starch into sugar, and that these have too often been regarded as true retention cysts of the pancreas. He holds, furthermore, that a diagnosis of this condition can usually be made by the characteristic shape of the swelling—it occupying rather the umbilical, epigastric or left hypochondriac regions—as well as by the absence of trypsin.

Moynihan has quoted the case of MacPhedran, who found a pseudocyst in a man of 53, at the bottom of which lay the pancreas, enlarged but firm, covered by healthy peritoneum. Five months later it became necessary to open the abdomen again because of another tumor, which this time was found to be a true pancreatic cyst, whose fluid possessed digestive properties. Mistakes have also arisen by dealing with such cases as effusions in the greater or lesser omentum, or in the walls of the stomach or colon, as well as in the case of retroperitoneal collections of fluid, many of these lesions being due to traumatism. Some of these pseudocysts form very rapidly and thus, as it were, "tell on themselves." Others come on very slowly and produce distress in the epigastrium. The more rapid the growth the less likely that the pancreas is primarily at fault. The injury which causes the hemorrhage may also be followed by an adhesive peritonitis, which may limit the accumulation and even close the foramen of Winslow, and so a cyst may form between the stomach and colon. It appears likely that injury has more to do with pseudocysts and morbid processes than with the true pancreatic cysts. It appears that the greater proportion of the former are met in males, who are more exposed to injury, whereas of the latter the majority seem to occur in women.

For reasons already given pancreatic cysts are then met oftenest in men. The youngest case is recorded by Shattuck, the patient being only 13 months old. Richardson operated upon a patient 14 months old, and Sliéda on one of 76 years. The body of the pancreas is most commonly affected. The cysts may be single or multiple, ranging from the smallest up to 20 liters or more. The contained fluid may be of almost any color, but is usually brown, tinted according to the amount of blood admixture. It is alkaline in reaction and of low specific gravity. It always contains albumin, usually cholesterin, and sometimes various epithelial or fatty debris. It may contain either of the pancreatic ferments, proteolytic, fat splitting or starch converting. The latter seems unimportant, the two former of interest, even of importance. Their presence is of real import, their absence of negative value. When enzymes are present in considerable and active amounts the presumption is strong that this fluid comes from the pancreas.

In rare cases the tumor is movable. When the growth is large, reaching into the pelvis, an ovarian tumor may be suspected. In one case of my own in which I wavered as between hydronephrosis and pancreatic cyst the tumor proved to be an ovarian cyst of one side, pushed up from below by another on the opposite side. The cyst wall is commonly quite vascular and there even have occurred changes enough in the surroundings to alter considerably the nature of the original fluid. When lined with original epithelium the granulation process is interfered with and final closure may be exceedingly slow since a secreting membrane does not readily granulate. In a case of my own, final closure did not occur for seven or eight months.

Fistulas resulting from these operations have thus been exceedingly difficult to deal with in many instances. Körte's case discharged for 2½ years, and then suddenly closed spontaneously. Murray has reported a case of

pancreatic fistula which showed a most interesting phenomenon, *i. e.*, the dependence of transudation upon intravascular pressure and its vasomotor regulation through the splanchnics, since the secretion was wonderfully influenced by the patient's emotions. (Vide also von Brackel, *Zeit. f. Chir.*, 49, p. 293.)

The growth of these cysts is most commonly beneath the stomach and above the colon, carrying before them the gastrocolic omentum, which, therefore, must be divided in exposing their anterior surfaces. The cases of this character are best suited for operative attack whether by drainage or enucleation. These occur, therefore, on a lower level, tend to press the pancreas downward and, by dragging, to produce a ptosis of the surrounding organs. The next most common direction of growth is above the stomach, between this and the liver, where adhesions would make any attempt at enucleation most grave. These cysts present on a higher level than the others.

These cysts are usually adherent, even firmly or densely so, to the adjoining structures. When thus fixed it will be best not to attempt to enucleate, but to drain front and rear. The portal vein has often been found deeply buried in the cyst wall; however, adhesions are not always met and enucleation is sometimes easy. (Cartledge has recently reported complete enucleation of a cyst of the former description, whose firmest attachment seems to have been to the tail of the pancreas, *Jour. Am. Gynecology*, January, 1903, p. 16.) The genuine pancreatic cysts are least likely to be adherent and the pseudocysts most so; still, no *a priori* conclusions can be drawn in this regard.

The symptoms are mainly those caused by pressure and are usually absent until this pressure begins to make them prominent, especially pain toward the end of and after a meal, perhaps with vomiting, usually confined to the upper abdomen, radiating to the left side of the back and left costal arch, varying in intensity from indigestion to violent colic. Vomiting is usually proportionate to the pain. The vomitus is often clear and colorless—the so-called pancreatic salivation of some writers. The other symptoms are vague; emaciation is usually rapid and patients "age" quickly. Fat in the stools and glycosuria when noted are most suggestive, though less frequent in cystic than in other pancreatic diseases, because the whole organ is rarely involved. This is true also of the presence of undigested muscle fibers. Sahli's test may be of some service in these cases. This is based on the fact that the presence of the pancreatic secretion in the intestine causes the decomposition of salol in the duodenum into carbolic and salicylic acids, which may be recognized in the urine. When not found there the assumption is that the pancreatic juice is not being discharged as it should be.

These tumors may present above the stomach, below it and between it and the colon, below the colon, or behind them both, as the diagrams given by Oser and Robson and Moynihan graphically indicate. Usually the stomach is pushed up and to the right, the colon downward. To reach it the parietal peritoneum, the two layers forming the great omentum and the layer of the lesser sac have to be perforated. The colon may be pushed downward several inches. When the tumor presents above the stomach, the gastrohepatic omentum must be traversed. The protrusion of a cyst through the foramen of Winslow and into the greater peritoneal cavity has been noted. The splenic vessels have been found both in front of and behind the tumor and the superior mesenteric vessels have been known to cross the tumor surface. These tumors lie usually between the umbilicus and the left costal border, though often they are medianly placed. Finally, they may almost fill the abdomen. The larger they are the more evident their cystic character; the smaller they are the more easily may they be mistaken for solid tumors. Aortic pulsation is often transmitted; the percussion note will

depend, in the location, upon the position of the stomach and colon.

In general, the symptoms and signs depend upon the size of the growth. These may be modified by bursting of a cyst with its sudden collapse, and perhaps refilling, or by hemorrhage into the cyst with a sudden enlargement. It may burst into the peritoneal cavity or into the bowel. In either event this accident may or may not kill. Sudden collapse and pain mean probably a hemorrhage into the cystic cavity.

To puncture such a tumor for diagnostic purposes is to introduce elements of danger which would best be avoided, nor does it give certain knowledge. A tumor of this character which would suggest exploratory puncture is one in which the abdomen should be opened at all events.

Diagnosis has to be made generally from :

1. Local peritonitis with fluid accumulation.
2. Cholecystitis and distended gallbladder.
3. Hydronephrosis and other fluid tumors of the kidney.
4. Ovarian cysts.
5. Hydatid and other cysts of the liver.
6. Adrenal cysts.
7. Mesenteric cysts, including cysts of Müllerian and Wolffian remains in the mesocolon.
8. Omental cysts.
9. Splenic cysts, hydatids, etc.
10. Cysts of the stomach wall, which have, in at least two cases, closely simulated pancreatic cysts.
11. Retroperitoneal lymph and other cysts.
12. The pseudocysts above alluded to.

It does not seem necessary in this place to go into the differential diagnosis of these various lesions.

Operative Treatment.—There is no treatment for these patients save that by operation. This must consist of (1) aspiration; (2) drainage or marsupialization; or (3) enucleation or extirpation.

1. Aspiration has nothing now to commend it scarcely even for diagnostic purposes. As Moynihan says, it is "redolent of medievalism." It has never been successful, since the cysts always refill if simply emptied. There is a theoretic value attaching to the method, which, so far as I know, has not proved real; that is, the possibility of carrying the patient over a crisis of pressure or glycosuria and thus preparing him for radical operation.

2. Choice of location of incision must depend on the point at which the tumor most prominently presents. The old method of Volkmann is essentially that applied to these cases today. The coverings of the cyst must be gently perforated, preferably after some portion of the cyst wall has been sewed to the edges of the incision, but before thus attaching it, manual exploration should be practised in order to determine immediately the matter of its possible enucleation, as well as its anatomic identity and relations. For thick-walled cysts the instruments used in seizing and tapping ovarian cysts may be advantageously used. Stitching should be secure, and is best done perhaps with silk. After thus anchoring a cyst, but not before, it may be freely opened, but the site of the opening should be free from vessels. It is rarely necessary to do this *a deux temps*, the contained fluid being easily kept out of the general peritoneal cavity, unless the cyst wall be extraordinarily thin so that it is inadvertently ruptured.

Posterior drainage will prove a time-saving measure in many of these cases, so far as final recovery is concerned. This is usually made at the left costospinal angle. Among the precautions and preparations for all of these operations *careful cleansing and scrubbing of the patient's back should be included*, so that this posterior opening may be made without delay when it is indicated. I have already reported a case of gunshot wound of the stomach in which posterior drainage was successfully made and in which this precaution was taken

before the operation. (See *Annals of Surgery*, 1902, xxxvi, p. 228.) A stab wound which may be dilated with forceps is sometimes enough for this purpose, but must be enlarged so that the drain, of tube or gauze, may not be too tightly constricted. It can be made most easily with the left hand in the abdomen as a guide, which should also identify the kidney or the pancreas as well as push them aside. While anterior drainage should be made with a glass or rubber tube, or with a gauze wick, the posterior drain must be of flexible material.

When the cyst is small it may be difficult to attach it to the anterior incision. In this case there must be plenty of packing around the principal drain or a purse-string suture may be used to hold the opening firmly around the tube. This would be preferable if it may be employed. Should this be impracticable, the cavity may be simply packed with gauze which is led out of the abdominal wound, in which latter secondary sutures should be introduced.

Some anomalous cases have arisen requiring especial and ingenious treatment which deserve mention. Thus Hogen (*Archiv. f. klin. Chir.*, Vol. lxii) has reported the case of a boy of 13 with a cystic tumor the size of his head, located posteriorly to the stomach, and so firmly surrounded by adhesions that it was impracticable to reach it directly and impossible to bring it near the surface. In this case he opened through both walls of the stomach and emptied the cyst. Then he found it possible to bring its anterior wall into contact with the parietal peritoneum by displacing the stomach. After this he closed both wounds of the stomach. Even then it was necessary to esect a part of the ninth and tenth costal cartilages in order to let the abdominal wall drop down to a lower level. This patient recovered.

Peters (Moynihan) opened a hydatid cyst of the tail of the pancreas by cutting down directly from the loin, incision being parallel to the last rib, as for nephrectomy. The lumbar fascia was opened, the colon pushed forward with its peritoneum, and the cyst thus reached retroperitoneally.

Robson collected 84 cases of pancreatic cyst. Ransohoff in 1901 (*American Medicine*, July 27, 1901) had gathered a total of 159 cases of pancreatic cyst subjected to operation. Of these 17 were of the type of cystadenoma. This relation may be even more frequent than 1-9 as above. These cystadenomas are the most slow-growing of all and the least painful. Of these 159 cases all but 34 were sewed to the abdominal wall and drained, with but five deaths. In 12 cases the operation could not be completed; four of these patients died. In 23 cases total enucleation was made with two deaths. At least 20 other cases have been reported since Ransohoff collected these statistics. Two of Robson's and Moynihan's 84 patients died subsequently of glycosuria and two others had extension of malignant disease.

The matter of fistula following marsupialization is so important that I think it well to allude to it again, as showing what may happen. Murray has reported a pancreatic cyst in a young woman of 19, in whom a fistula at that time had persisted for three years or more, who wore a rubber tube for one year and after that a small silver tube. During the latter part of this time the secretion or discharge was but very slight save when she became excited or nervous, when it greatly increased. Chemical examination showed this to be a simple transudate with specific gravity often as low as 1,003, devoid of elements indicating tryptic proteolysis. (*American Medicine*, July 26, 1902, page 133.) In this connection it may be remarked that Körte had a fistula stay open for 2½ years, and that Gussenbauer has found a specific gravity of pancreatic fluids as high as 1,610.

In general, experience has shown that after operation on pancreatic cysts recovery may be prompt and satisfactory, and pancreatic function be apparently undisturbed. It is also shown that pancreatic fistulas may persist for a long time without apparent detriment, and may be

expected to close with or without treatment after a somewhat indefinite period.

SOLID TUMORS.—From the statistics of Remo-Segrè, Biach, Oser, Rohde, Soyka, Hale White, and others, one may study the records of some 53,000 autopsies, in which only 226 cases of apparently primary malignant disease of the pancreas were found. I say apparently primary, because doubt has been expressed about the primary character of even some of these. The proportion of cases would certainly not be over 1–265 autopsies, perhaps not more than 1 in 400 or even 500.

Cancer is by far more common in the head of the organ, which, like the biliary passages, is most open to infection, more than half of the cases appearing here. It may begin in the glandular epithelium or in the cells of the excretory ducts. Sometimes it attains great size. Terrier has extirpated one as large as the patient's head, which weighed 5½ pounds. Several times these tumors have been found the size of a fetal head. The duct of Wirsung is compressed in nearly all instances. Courvoisier found it obliterated in 55 out of 66 cases. The duct may be dilated beyond the cancer. The intimate relations and the size of some of these growths will explain compression and disturbance of the duodenum, or even of the pylorus. By different observers compression has been noted of the entire stomach as well as of the colon, or of the ureters, portal vein, aorta, vena cava, splenic vessels, superior mesenteric vessels, or thoracic duct. By breaking down of these growths perforations in all possible directions may result, including the portal vein, splenic artery, and celiac axis. They are most frequent after the fortieth year.

Secondary deposits occur, perhaps, most often in the liver, but may be found anywhere or even everywhere, since general carcinomatosis has been reported by Oser. Many of the carcinomas are of the scirrhous type; the softer forms are rare. They include the so-called adenocarcinomas; sarcomas are exceedingly rare.

Symptoms.—These may be divided under (1) those pertaining to the pancreas itself and its functions; (2) those pertaining to adjoining and related organs; (3) those indicating dissemination of cancer; (4) the tumor itself.

Of course it is impossible to dissociate these in the study of a given case; nevertheless, they may be considered separately as above.

1. Among the earliest, though vague symptoms, are digestive disturbances, failure of appetite, discomfort after eating, perhaps eructation, heartburn, nausea or actual vomiting. Not one of these is particularly significant, nor are all of them together. Anorexia, even to loathing of food, is sometimes present; at other times patients eat voraciously without satisfaction. Loss of appetite is evidence of obstruction rather than of cancer, since in a number of cases in which cholecyst-enterostomy was done for obstruction of the duct by pancreatic cancer the appetite returned. When the pylorus is obstructed by tumors and the stomach becomes dilated, vomiting and other severe digestive disturbances may follow. When the growth has involved the stomach wall blood may be vomited. Curiously, though the stomach is quite free from disease, there is no free hydrochloric acid in the gastric contents. Fatty stools are noticed occasionally, not usually. Voluminous stools, due to fatty and incomplete digestion, are occasionally noted. This is important and common enough to attract attention as well as to call for it. Should this be followed by jaundice and then by glycosuria with epigastric pain and emaciation, a very probable pancreatic cancer may be assumed. Light colored or bloody stools are not infrequent. Pain is a very uncertain feature. When characteristic it radiates around the sides to the back and may be severe. It may simulate the crisis of tabes, but it lasts longer and is often worse at night. It has been spoken of as "celiac neuralgia." It is sometimes paroxysmal, colicky or anginal. When pain is severe there is accompanying tenderness.

2. Jaundice is an earlier or later feature of these cases, usually later. It is, of course, first a pressure-symptom, but later may be due to disease extending outside the pancreatic limits. The usual concomitants are not lacking—clay-colored stools and high-colored urine. Often a distended gallbladder may be felt. Next comes enlargement of the liver, sometimes regular, sometimes by nodes, which can be felt. In some cases a late shrinking, due to atrophy of the true liver tissues, has been noted. Ascites may result from pressure on the portal vein or involvement of the peritoneum. Meteorism, from pressure on the intestine, may go on even to the point of producing fatal acute obstruction. Pressure on the vena cava may cause dropsy of the limbs, or on the ureter a hydronephrosis. Sahli's test may be also resorted to by giving salol and testing the urine for salicylic and carbolic acids. Their presence would be suggestive, but their absence not positively indicative.

3. When the adrenals are secondarily involved there may be bronzing of the skin. Cachexia is more early and pronounced than in cancer of any of the other viscera. Such symptoms as ascites may indicate general peritoneal carcinoma. Chylous ascites has been noted.

4. The tumor can usually be detected after a time, the date depending somewhat on the thickness of the abdominal wall. It often resembles a pyloric tumor but is deeper and more fixed, often conveying a transmitted pulsation from the aorta. A double tumor has been noted more than once, the second being the distended gallbladder.

All observers agree that when pain, jaundice, and tumor are present the disease runs a rapidly active course. When jaundice is absent diagnosis is more difficult. It will be more easy when the characteristic fecal changes mentioned are recognized. It will never, however, be really easy, and may be so difficult that primary cancer of the pancreas can only be surmised, not proved.

The disease rarely runs a course of over a few months, and may terminate within ten weeks. Death may result from marasmus, from hemorrhage or from obstruction.

Treatment.—Medicinal treatment must be purely symptomatic, and I shall not consider it here. Surgical treatment, because of the obvious difficulties, can rarely be applied. Billroth twice partially resected some part of the pancreas, removing once a portion of the head with a cancerous pylorus and once the tail with a sarcomatous spleen.

Ruggi, of Bologna, is to be credited with the first successful operation on a primary cancer of the pancreas, in 1890. The tumor was considered to be a retroperitoneal adenosarcoma of either the kidney or pancreas. He operated from the loin by an oblique incision, and exposed a soft, diffuse tumor (later proved to be carcinoma), with adherent small intestine and omentum. These were detached and the tumor, which weighed 23 ounces, removed. Complete recovery ensued. Gade's was the second successful case, in 1895. He extirpated a tumor the size of a child's head from the tail of the pancreas. There were no metastases. Terrier, in 1892, removed a 5½ pound tumor as large as a man's head, but lost his patient. Robson tabulates altogether 13 cases of removal of solid tumors of the pancreas and adds a fourteenth of Malcolm's. To these there should be added Briggs' successful case of sarcoma. Of these 16 patients 8 recovered from the operation, while the other 8 died within a few hours or days afterward. Thus, after all, the outlook for radical surgery in solid tumors of the pancreas is not wholly unpromising.

Unfortunately it is but rarely we shall have to deal with cases of this kind. The prejudices of the internists against early surgical procedures, and the fear of operation which deters so many patients, will long combine to keep these cases out of the surgeon's hands until too late for radical measures and until a time when only pal-

liative procedures are possible. Among these, cholecyst-enterostomy is the only one which appeals to a trained surgical instinct, and then only in selected cases. A study of the few reported instances, some 10 in number, shows that there was temporary improvement in most of them, as in 17 cases of cholecystotomy, still death was not long postponed, although much comfort was reported. Cholecystotomy has so little to commend it as compared with cholecystenterostomy that it should be abandoned save in exceptional instances.

I have grouped all the malignant tumors of the pancreas under the general head of cancer. There is the same unfortunate confusion of terms here as in other respects, owing to international differences of meaning. For example, one author describes a giant-celled carcinoma, another a cystic epithelioma, yet others adenocarcinoma and adenosarcoma. It is most difficult to reduce all of these to a systematic nomenclature, but viewed from a clinical standpoint we may regard these histologic differences as of minor importance.

Adenoma.—Nicholls, of Montreal (*Journal of Medical Research*, November, 1902, p. 385), has recently gone carefully over the literature of adenoma of the pancreas, of which he describes a typical case met postmortem. He has been able to find but four other recorded cases which would stand the test, though one of these was doubtful, while several cases described as adenoma were in all probability malignant. There is, of course, a likelihood that certain cysts spoken of as cystadenoma had their beginnings in real adenomas, but the subject is and must long remain much confused. There is no probability that any such growth can be accurately recognized without exploration. Should it be met during an operation the effort may be legitimately made to enucleate or extirpate it.

TUBERCULOSIS.—Tuberculosis of the pancreas is generally regarded as exceedingly rare. Kudrewetzky, in 1892, however, challenged this statement. He found 44% of tuberculous children showing pancreatic tuberculosis and 9% of adults. In 18 cases of miliary tuberculosis he found it in six; nevertheless, as a primary lesion it is certainly rare. Cases reported by Mayo and Sandler illustrate how tumors in the region of the pancreas may be due to tuberculous disease. Sandler, for example, opened the abdomen of a thin woman who had a movable tumor above the umbilicus. He found behind the stomach a hard tumor the size of a walnut, which he extirpated. This proved to be a tuberculous lymph-node of the pancreas. The patient recovered. [This case is included among those referred to above of removal of solid tumors of the pancreas.] (*La Tuberculose du Pancréas*, Thèse de Paris, 1899.) Lohéac has shown that pancreatic tuberculosis may assume either the form of gummatous nodules or diffuse interstitial proliferation. He would explain the relative infrequency of tuberculous disease in this location by virtue of the peculiar pancreatic secretion which he thinks to be protective as against this kind of infection.

SYPHILIS.—Like tuberculosis, syphilis produces in the pancreas lesions of two kinds, the indurative and the gummatous, which can coexist, the former being much more frequent. The latter has been observed in a six months' fetus. It does not appear that these lesions have ever been diagnosed *intra vitam*. Doubtless they occur with many cases of visceral syphilis, which, being recognized, are subjected to suitable and prolonged treatment. There is no known reason why a gumma of the pancreas should not respond to such treatment as readily as does gumma of the liver. As yet these cases have escaped the recognition and the attack of the surgeon.

PANCREATIC LITHIASIS.—Kinnicutt (*American Journal of the Medical Sciences*, December, 1902, page 948) has been able to collect but seven cases, including one of his own, in which a diagnosis of pancreatic lithiasis was made. In Caparelli's case over 100 small calculi were discharged through a pancreatic abscess and fistula,

which finally closed, closure being followed by diabetes. Three of the six died, and in one of them the pancreas was found riddled with abscesses. In Kinnicutt's own case biliary and pancreatic calculi coexisted. He suggests that just as the former result from infection of the biliary passages so do the latter from an infection traveling up the pancreatic duct.

In the absence of pancreatic calculi in the stools there are absolutely no diagnostic symptoms. Subjective symptoms are common to too many lesions of various organs. Pain along the left costal arch is suggestive but not pathognomonic; neither is the occurrence of undigested muscle fiber in the stools, since this may occur in diarrhea. Fatty stools are not often a frequent evidence of pancreatic disease, since in 330 cases collected by Ancelet (*Études sur les Mal. du Pancréas*, Paris, 1864) it was noted only 28 times. When present they may be due to coexistence of jaundice with greatly diminished absorption of fat. The most reliable evidence in this regard pertains to failure in the fat-splitting function. Normally at least three-quarters of the fat contained in the feces should appear in the form of fatty acids and soap, even when jaundice is present, but when pancreatic juice is prevented from entering the intestine this decomposition is greatly interfered with. The presence or absence of jaundice is of small import so far as pancreatic lesions are concerned. Glycosuria is quite suggestive, though met usually only after the disease has well advanced. The discovery of pancreatic calculi in the stools being so rare it will be seen that the evidences of pancreatic lithiasis are always very scanty; nevertheless attacks of colic in the upper abdomen with or without jaundice, with undigested muscle fibers in the stools and evidences of diminished fat-splitting and glycosuria, may properly lead to a tentative diagnosis of this condition, which may be confirmed if fragile concretions destitute of biliary pigment and cholesterin are found in the evacuations.

CONCLUSIONS.

I am well aware that this is but a hurried survey of what most interests the surgeon and what he can accomplish by operation upon the pancreas. The result of most careful study and deliberation is to formulate advice in this brief sentence that a well-founded suspicion of a palpable pancreatic lesion, of acute or neoplastic character, justifies an early exploration for its discovery and prospective relief, and that when a careful study of the case still leaves one in honest doubt regarding its nature then the best rule to follow will be to operate.¹

FOURTH OF JULY TETANUS.

BY

H. GIDEON WELLS, M.D.,
of Chicago.

If history repeats itself we shall soon experience the annual epidemic of tetanus, by which we pay the penalty of a barbarous method of celebrating Independence day. Every year in Chicago from 5 to 30 boys are sacrificed in this way. As tetanus is by no means common in this city it is fair to assume that there is a corresponding deathrate in the country at large, which, if true, means that some hundreds of victims suffer death every year from their ill directed efforts at creating a disturbance. Having been interested in this subject for some time I have endeavored to collect statistics concerning it, both as regards distribution and prophylaxis, by sending circular letters to the boards of health and hospitals of the large cities.

Both in New York and Chicago there is produced

¹I have not attached hereto a bibliography. Those articles to which I have referred which are not included in Oser's bibliography I have quoted in the text. To this I might perhaps add a reference to a paper of my own on the "Surgery of the Pancreas," published in the *Medical News* of February 15, 1902.

each July an enormous augmentation in the number of deaths from tetanus, sometimes amounting to more than occur in all the rest of the year taken together, and nearly all of these July cases are the result of wounds

1899 there were 17 deaths from this cause. The low mortality in July, 1901, is without explanation, except that during the whole of that year tetanus was much less abundant than in every

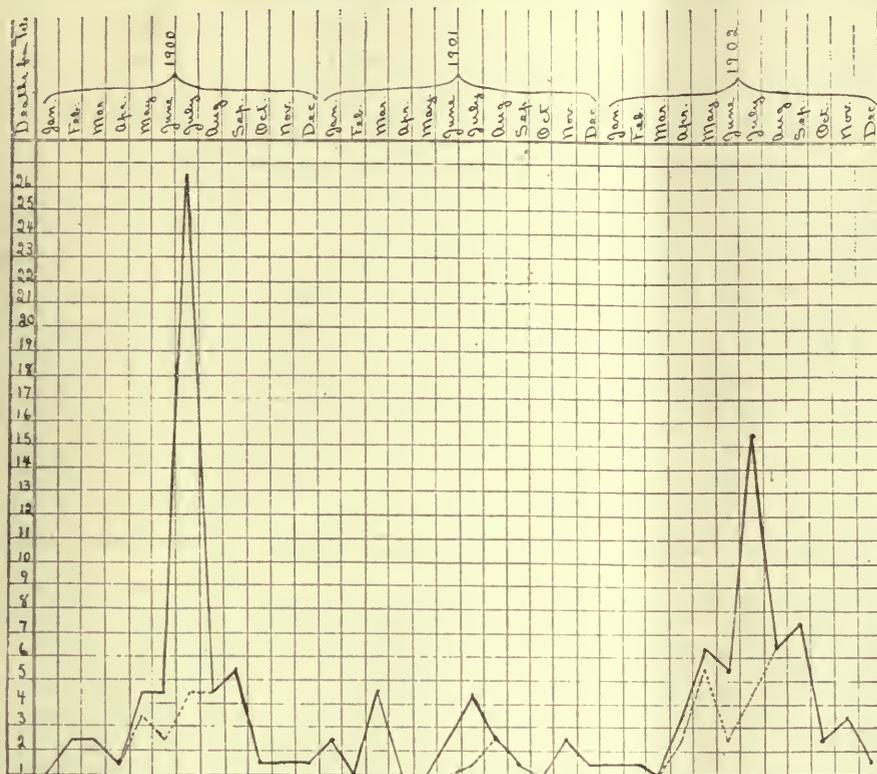


TABLE 1.—Mortality from traumatic tetanus in Chicago for 1900-1902. Wherever any of the deaths in any month were due to blank cartridge wounds, the tetanus from causes other than this is shown by dotted lines, the space between the two lines showing the mortality from blank cartridge wounds.

produced by blank cartridges. As can be seen by the following chart, blank cartridge wounds produced during other times of the year are also often followed by tetanus, but because of their infrequency they play no

mortality: "In addition to the usual restrictions upon the carrying of concealed weapons, persons less than 16 years of age cannot carry or have in their possession, even openly, upon any street, avenue, road, alley, park,

for some unknown reason the tetanus bacilli were either less abundant or less virulent this year than usual, and the Fourth of July mortality was therefore reduced along with the general mortality. In New York, also, 1901 was singularly free from tetanus, although the distribution through the year was normal, and Dr. Wm. H. Guilfooy, the Registrar of Records, to whom I am indebted for the accompanying table, says that there is no apparent reason for the low mortality of this year.

In the city of Greater New York the curve is quite similar to that of Chicago, although in proportion to population the number of cases is much smaller. In this record the cases due to blank cartridge wounds have not been separated. Washington, however, does not present a corresponding rise in its figures for July, the total for the ten years being surpassed by September and October. This seems to be explained by the stringent regulations regarding the use of explosives, which I quote from a letter from the health officer, Dr. W. C. Woodward, who kindly furnished the table of tetanus

TABLE No. 2.
DEATHS FROM TETANUS FOLLOWING UPON WOUNDS—Years 1899, 1900 and 1901.

Borough.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1899. Manhattan.....					1	2	14	2	3				22
The Bronx.....							5					1	6
Brooklyn.....				1	1	3	1		1	1	1		9
Queens.....							1						1
Richmond.....													
New York City.....				1	2	5	21	2	4	1	1	1	38
1900. Manhattan.....			2			2	9						13
The Bronx.....		1				1	1		1				3
Brooklyn.....	1						1	3	1		1	1	8
Queens.....					2	2	2		1				7
Richmond.....				1		1							2
New York City.....	1	1	2	1	2	5	13	3	3		1	1	33
1901. Manhattan.....				2	1	1	2			1	1	1	9
The Bronx.....													
Brooklyn.....	1	1		3			2				1		8
Queens.....			1	1		1	1	1		4			9
Richmond.....										1			1
New York City.....	1	1	1	6	1	2	5	1		6	2	1	27

During the year 1899 there were 63 deaths in the entire city from idiopathic tetanus, 49 of which were tetanus neonatorum. During the year 1900 there were 83 deaths from idiopathic tetanus in the entire city, 78 of which were tetanus neonatorum. During the year 1901 there were 84 deaths from idiopathic tetanus in the entire city, 61 of which were tetanus neonatorum.

prominent part in the mortality sheets. In addition to the years covered by the chart it has been found that the deaths from blank cartridge wounds each Fourth of July in Chicago usually reach from 15 to 30. For example, in

or other public space in the District of Columbia, any gun, pistol, rifle, air gun, or other dangerous weapon. No gun, air gun, rifle, pistol, or other firearm, cannon, torpedo, firecracker, squib, or other fireworks may law-

fully be discharged or set off within the city of Washington or the fire limits of the District of Columbia without a special permit therefor from the Major and Superintendent of Police, nor within 100 yards of any

extent replaces the demonstration of "the glorious Fourth."

Examination of the individual cases that occur in Chicago leaves no question as to the sort of Fourth of

TABLE No. 3.
DEATHS FROM TRAUMATIC TETANUS IN THE DISTRICT OF COLUMBIA.

	1893.		1894.		1895.		1896.		1897.		1898.		1899.		1900.		1901.		1902.		Total.		
	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	
January.....																					1	.....
February.....																					1	.....
March.....			1			1																1	
April.....			1	1								1									3	1	
May.....				1				1														1	
June.....			1		1			1	1	1												1	
July.....							1	1	1	1		1	1		1							3	
August.....						1						1										1	
September.....				1				1	1						1			2	1	1		3	
October.....				1	2	1	2	1				1										4	
November.....								1														4	
December.....																						3	
Total.....			4	4	3	2	5	3	4	2	2	1	4	1	1	1	1	6	3	3	18	32

W—White. C—Colored.

The relative relation between white and colored populations in the District of Columbia is approximately as two to one. The ratio between the deaths from tetanus in the two races, however, as shown by the table, is nearly as one to two.

school house, building or buildings, playground, enclosure for stock, or railroad tract outside of such fire limits for the District of Columbia without the written consent of the owner or occupant thereof and a special permit from the Major and Superintendent of Police. Dealers in explosives are not allowed to sell any firecrackers more than 3½ inches in length, nor any toy pistols less than 5 inches in length."

Putting together the figures of these three cities it is seen that there is a distinct seasonal curve, so that, disregarding the figures for July, the maximum number of deaths is found occurring during the summer months, the minimum during the winter, so that June alone furnishes nearly as many deaths as December, January, February, and March together.

TABLE No. 4.

	Chicago.			New York.			Washington. 10 years.	Total.
	1900.	1901.	1902.	1899.	1900.	1901.		
January.....	0	2	1	0	1	1	1	6
February.....	2	0	1	0	1	1	2	7
March.....	2	4	0	0	2	1	2	11
April.....	1	0	3	1	1	6	7	19
May.....	4	0	6	2	2	1	4	19
June.....	4	2	5	5	5	2	5	28
July.....	26	4	15	21	13	5	7	91
August.....	4	2	6	2	3	1	3	21
September.....	5	1	7	4	3	0	8	28
October.....	1	0	2	1	0	6	8	18
November.....	1	2	3	1	1	2	3	13
December.....	1	1	1	1	1	1	0	6
Total.....	51	18	50	38	33	27	50	267

Excluding Washington, where Fourth of July tetanus does not seem to exist, it is seen that July furnishes 38.7% of the year's mortality from traumatic tetanus. Assuming that in July there are as many deaths from causes other than Fourth of July tetanus as in June, and deducting these, it is found that in New York and Chicago 29.5% of all deaths from traumatic tetanus owe their origin to accidents of celebration. Reports from other cities indicate that conditions are much the same in each, in proportion to the population, although there are a few cities in which it is denied that Fourth of July tetanus occurs at all. In Southern cities occasional cases are seen following the Christmas celebration that to some

July injury that causes tetanus—almost without exception the wound made by a blank cartridge is the starting point. For example, of 27 cases occurring from June 25 to July 14, 1900, all but one were from blank cartridge wounds; the single exception being the similar wound received from a toy cannon. Of the 27 the wound was in the hand (most commonly the left) in 24, there being one each of the foot, eye, and thigh. It is interesting to observe that even at other times of the year deaths are reported from blank cartridge wounds, although such wounds are not common during the remainder of the year. On the other hand, wounds from bullets, occurring frequently in this city at all times of the year, and undoubtedly much more frequent than the blank cartridge wounds, have practically never produced tetanus, at least none were reported during the last three years. Other Fourth of July injuries, such as lacerations and burns from firecrackers, which are very common, seldom produce tetanus, there being but two instances during three years. It is unfortunate that it is impossible to learn the total number of blank cartridge wounds that are produced each year to determine in how large a part tetanus develops, but the 20 or so cases in Chicago must certainly represent a very high percentage, especially when compared with the scarcity of cases from other wounds. Even the dreaded nail wound of the foot must fall far behind.

At first sight it would seem that the frequency with which tetanus follows blank cartridge wounds indicates a contamination of the cartridges with the tetanus bacilli. A large number of wads have been examined by different investigators, always with negative results. In the laboratory of the Health Department of Boston, in 1900, 350 cartridges were examined both by animal and cultural experiments, but tetanus bacilli were never found. LaGarde¹ records an examination of 41 samples of powder from cartridges of varying calibers; 30 samples of powder from 6 different kinds of firecrackers; 24 wads from toy pistol ammunition; 30 samples of cardboard from the different kinds of firecrackers above cited. Tetanus bacilli were not found in any. In 1899² I examined bacteriologically about 200 cartridges, representing all the makes on the market. In spite of the employment of various methods the presence of tetanus bacilli could never be demonstrated. In 1903³ ten wads from each of five makes were again examined, also with negative results. These numerous experi-

ments seem to exclude finally the cartridges themselves as the source of the infecting organisms. There seems, on the other hand, little room to doubt that the reason for the great danger in these wounds lies in the nature of the wound itself, and the circumstances under which it is received. In the first place, it will be observed from the tables that tetanus occurs most frequently at that particular time of the year when tetanus from ordinary causes is most frequent. This prevalence of tetanus in summer, as compared with winter, is to be ascribed to the fact that the street dust is frozen fast in winter, and with it the tetanus bacilli, with which it seems amply provided. By examining six specimens of dirt taken from the streets in different parts of Chicago by inoculation, virulent tetanus bacilli were demonstrated in one. Many observers have found street dirt a prolific source of tetanus bacilli. Now, the small boy who shoots a blank cartridge wad into his hand has generally provided the hand with a liberal coating of dirt before the accident, and this dirt is carried well into the wound. The blank cartridge wad, usually striking the hand with its flat surface, has a remarkable tendency to carry before it a disc of the tough palmar skin, and particularly when this happens we have absolutely ideal conditions for the production of tetanus. There is a wound of some depth, often passing through the palmar fascia which seals it perfectly. At the bottom of the wound is a wad of skin and a wad of cardboard, sandwiched between which is a layer of street dirt. On all sides are bruised and injured tissues, with blood clots, and Strick⁴ has shown that $\frac{1}{10000}$ of the ordinary fatal dose of tetanus bacilli will kill a rabbit when injected into a hematoma. If there are any tetanus bacilli on the surface where the wound was received they would seem to be almost certain to produce tetanus, for they are transferred to the bottom of a wound where there is an anaerobic environment, and every opportunity for growth in tissues so injured that there is little possibility of a successful reaction. Such a wound will not drain itself naturally at all. It is in marked contrast with a bullet wound, which less often carries in the surface epithelium, bleeds more because bruising less, and more often passes through the hand entirely and affords much better drainage. Probably these differences explain the greater danger of the blank cartridge wound.

In view of these facts it is perfectly evident what the treatment should be. The first thing for the doctor to appreciate, and most of these wounds are first seen by the family physician, is that *a blank cartridge wound is a most dangerous injury*. It is no trifling accident that is to be treated in a haphazard way, trusting in nature to accomplish everything. Secondly, it is a wound that *properly treated at the beginning is almost without danger*, and therefore the responsibility for bad results lies with the man who first cares for the wound. It might be supposed that tetanus arising from blank cartridge wounds occurs chiefly when the wound has been treated by the patient himself, who is first seen by the doctor when the symptoms of tetanus have begun. Unfortunately this is not the case. I have obtained the histories of about 35 cases of fatal Fourth of July tetanus, and by far the majority of the victims saw a doctor soon after the wound was received. The treatment given them varied from a simple dry dressing to an inefficient attempt to pick the wads out of the wound. In not a single case was a reasonable attempt made to secure proper surgical conditions. Even if there were no such thing as tetanus, is a physician justified in leaving a cardboard wad at the bottom of a contused, deep wound received in a grimy hand? And yet that is just what has been done in nearly all the cases with which I am familiar. Nor is this an unusual experience. For example, Moschocowitz⁵ reports a case with the following history:

"On July 4 the patient shot himself in the palm of the hand with a blank cartridge. He immediately

applied for treatment at a hospital, at which the wound was disinfected and bandaged; some of the wad was supposed to have been removed at this time. Subsequently the wound was treated by the family physician." At the operation, performed after tetanus had developed, "the wad of the cartridge, or at least the greatest part of it, was found still at the bottom of the cavity and was removed." He also notes that a large experience in dispensary practice has indicated the frequency with which proper surgical treatment is neglected, "as I have had opportunity to remove on many occasions the bits of cartridge wad from patients who had been under a physician's treatment before coming to the dispensary." Similar reports are given by many other hospital and dispensary physicians.

Every case of blank cartridge wound should be considered from the start as a dangerous emergency, and should be treated with the same thoroughness that would be indicated if it were known positively that tetanus bacilli were in the bottom of the wound. If possible, the patient should be anesthetized, and this is almost necessary in injuries of the palm. The wound should first be thoroughly cleansed on general surgical principles, especial care being taken to remove all contused tissue, not to mention foreign bodies. The entire surface of the wound should then be cauterized, best with the actual cautery, and then packed in such a manner as to ensure that no dead pockets can possibly exist, and that healing will take place from the bottom. The importance of such thoroughness is well emphasized by a report published by Bain⁶ from the Massachusetts General Hospital, of a blank cartridge wound treated in such a thorough manner which did not develop tetanus in spite of the fact that the presence of living tetanus bacilli was demonstrated on the wad removed at the operation. It may be regarded as certain that had this wound not been thoroughly treated the patient would have developed tetanus.

Unfortunately, however, tetanus may develop even from wounds that have received good care, sometimes appearing when the complete healing has occurred, and all danger seems over. There is particular danger that the most thorough cleansing may not be effective in those wounds that are brought to the physician a few days after they are received. Then it is possible that bacteria have been carried by phagocytes or by other means outside of the range of cauterization, and in such cases the only safe procedure is the prophylactic use of antitoxin. Unsuccessful as antitoxin has generally been in the treatment of tetanus that has already developed, there can be no question of its value as a prophylactic. A patient who has just developed symptoms of tetanus is not just developing the disease, but is dying of it. According to Ehrlich's theory at that stage the tetanus toxin has united with the motor cells of the anterior horns and basal ganglia, and the damage is done. Antitoxin administered at this time can, at the most, merely prevent further combination of the toxin with these cells or with other cells that are still not involved. But if we inject antitoxin before the toxin has combined with the nerve cells we cause the toxin to unite with the antitoxin, and so protect the cells. Practical experience has been emphatically favorable to this latter use of antitoxin. While little has been done with human tetanus, because the chance that any ordinary wound will cause tetanus is too slight to render its prophylactic use common, still there are many epidemics among horses that have been promptly stopped by the use of antitoxin. Pitha⁷ has applied it in the Prague maternity hospital where there was an epidemic of puerperal tetanus, and accomplished the termination of the epidemic at once. So far as reports can be obtained wherever prophylactic use of tetanus antitoxin has been made it has not been followed by tetanus in a single case, nor has it caused any trouble. Therefore, in view of the great danger that certainly exists in blank cartridge wounds, a pro-

phylactic injection of tetanus antitoxin is advisable. In a dose of 5 cc., which should be ample, it is perfectly safe. While in blank cartridge wounds that are treated immediately by thorough methods antitoxin may seem superfluous, still there is no harm in its use, it "makes assurance doubly sure," and the responsibility of the surgeon is terminated. In cases that reach the physician a few days after the injury has been received it is certainly indicated, however well the wound is then treated, and it should always be used. Certain it is that such combined treatment as this would practically exterminate Fourth of July tetanus, and the lives of scores of boys must be worth more than the trouble involved in thorough treatment. Inquiry among most of the large hospitals of the country has shown generally that in their dispensary service the wounds are thoroughly treated from the outset, and they generally report that all the cases of Fourth of July tetanus occurs in boys treated first by some outside physician or dispensary. Only in Bellevue Hospital, so far as information was received, has antitoxin been used as a prophylactic for blank cartridge tetanus, and in no cases so treated has tetanus developed. In Johns Hopkins Hospital antitoxin has been used to some extent as a prophylactic after nail wound of the foot.

After the tetanus has once developed its treatment is much the same whatever the original cause. Radical cleansing of the wound, with removal of the adjacent tissues, best supplemented by the actual cautery, is essential. Although antitoxin has been spoken of somewhat deprecatingly as a means of treatment in preceding paragraphs, yet its use is to be urged in every case of tetanus. Up to the present time tetanus antitoxin has given nothing very positive, so far as is indicated either by statistics or by the general impressions of those who have seen much of its use. By the time tetanic symptoms appear the union of the toxin and the combining groups of the ganglion cells has occurred, and so far as experimental and clinical evidence tell us this union is a stable one that cannot be broken by antitoxin or other therapeutic agents. What we may hope for is that the antitoxin will combine with any toxin still free in the blood, and so prevent further injury. The intracerebral and subdural injections through trephine openings have not seemed on the whole to offer any great improvement over subcutaneous injection. As the toxin has combined chiefly with the cells of the anterior horns of the spinal cord the method of intraspinal injection seems much more rational than intracranial injection, besides being much simpler. Reports of success by this method have been published, and it is well worth trial. The antitoxin treatment is in about this position: It is logical, harmless, and probably of benefit; especially in those cases in which the line between recovery and death is a narrow one; therefore the patient should be given the benefit of the doubt, and receive antitoxin.

A modification of the antitoxin treatment that has been used abroad in a few cases, but apparently not in this country, is the injection of brain tissue from the lower animals. This is based on the famous demonstration by Wasserman that tetanus toxin is firmly combined by nerve tissue equally, whether in its normal condition in the body or as an emulsion in a test-tube. Therefore, injection of emulsion of brain substance may be expected to accomplish much the same things as antitoxin by combining with the free toxin. Russian physicians, especially, have employed this means. The usual method is to obtain the head of a freshly slaughtered rabbit or sheep, remove the brain aseptically through a small opening in the skull, grind it up in a sterilized mortar with sterile physiologic salt solution, and filter through sterile gauze. About 20 cc. to 30 cc. are used to each 10 grams of brain for each dose, which is injected subcutaneously. In cases of tetanus occurring in localities where antitoxin is not obtainable this substitute is to be strongly recommended.

While the virulence of infection is the important matter in determining the outcome of the case, still there can be no doubt that general means of treatment judiciously used will improve the prospects of many doubtful cases. Chief among these is the protection of the patient from the numerous stimuli that bring on the convulsions. He should be in a dark room, with heavily padded floors; the door should be so fixed that slamming is impossible. Morphine should be used, together with chloral and bromids, sufficient to keep the patient in a stupor if possible; these failing, chloroform should be used, and it is always indicated when exhaustion by the spasms is threatened. To increase the elimination of the toxins, as much water should be given as is possible without too much disturbance of the patient. Like the antitoxin, the carbolic acid treatment is also of uncertain value, yet it, too, may well be used, since it offers a possible aid. Ten cc. of a 4% solution may be safely injected three times a day, and in some cases even larger amounts have been used.

Of course the root of the treatment of Fourth of July tetanus lies in preventing the wounds that usually cause it, and this is to be accomplished chiefly by thorough supervision of the sale of firearms and ammunition to minors, and the rigid enforcement of statutes that exist in nearly all cities. The American boy is not to be deterred by advice or instruction as to the dangers of the blank cartridge form of celebration, and it seems improbable that any sort of police regulation can defeat his suicidal tendencies, but much can be done to lessen the number of accidents. In the returns from cities all over the country there seems to be to some extent a relation between the vigor of the measures taken against celebration with firearms and the number of cases of tetanus. We have already mentioned the freedom of Washington from this fatality, and its relation to the rigid laws against the use of firearms. In Chicago, on the other hand, although the Mayor and the Board of Health call attention to this danger, still the topography of the city is such as to prevent any efficient action by the police, so that the celebrator has unimpeded facilities for shooting himself. In New York, according to information from the secretary of the Board of Health, "the ordinances against the use of firearms are usually suspended in this city on the Fourth of July." There is undoubtedly room for much improvement in this respect. For one who has no interest in the sale of explosives the method in vogue of celebrating Independence day shows little evidence of educational or patriotic value, and of its evils tetanus is but one among many. Prohibition of the sale and use of explosives, at least those that produce solely the effect of noise, is the proper solution of the troubles of the Fourth, and making their sale illegal would have a decided effect on the day's events, even if complete prohibition could not be accomplished.

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NEPHROLITHIASIS, WITH REPORT OF CASE.

BY

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Kidney surgery has of late years been placed upon such a thoroughly scientific basis that we now undertake operations upon these organs with confidence, where formerly the greatest trepidation was felt.

Two factors have contributed chiefly to this changed attitude on the part of surgeons toward this important field of surgery: (1) The possibility of determining

accurately the functional activity of either kidney; and (2) greater precision in diagnosis made possible by the perfection of Röntgen ray photography and ureteral instrumentation.

To illustrate these two points and for the sake of record I wish to report the following case of nephrolithiasis:

Mr. B. W. P., aged 44, consulted me April 25, 1902, for kidney trouble. At the age of 20 he had several severe attacks of pain in the region of the left kidney and along the course of the ureter, associated with blood in the urine. Since that time there had been no acute paroxysmal pain, but a continued soreness in the left lumbar region with occasional hematuria, especially after unusual effort or fatigue. This condition had been much aggravated for the two months preceding his visit to me, with the addition of slight chills and lassitude accompanying the hematuria. He had been passing more blood in his urine, which at times was bright red. There had also been a loss in strength and weight.

Personal History.—Occupation, draughtsman; married; temperate in all his habits; no specific history. His father suffered also from what was probably renal calculus.

Examination.—Patient nervous, mentally alert, nourishment fair, heart and lungs negative, liver and spleen not palpable, deep palpation under the margin of the ribs on the left elicited pain, but the kidney could not be felt. There was no tenderness on the right, and the patient said the two sides felt differently. After examination the left side was very tender for a day or two, and there was more blood in the urine.

First 24-hour Specimen of Urine.—Quantity, 600 cc.; urea, 1.2%; albumin present in considerable amount. *Microscopic examination* showed a large amount of blood and a few pus cells.

Another 24-hour specimen a few days later showed the following: Quantity, 960 cc.; urea, 1.8%; less albumin and blood; thorough examination for tubercle bacilli was negative.

May 10 the patient was feeling better, and I segregated the urine with the Harris instrument, having previously administered phloridzin 2 mg. hypodermically.

The instrument was left in half an hour, and during this time the right kidney discharged 20 cc. of urine, the left only a few drops.

The drops from the left kidney contained a large amount of albumin and blood. Urine from the right side contained a small amount of albumin and a few red blood-corpuscles; reaction, slightly alkaline; about .42% sugar; urea, 1.2%.

The freezing point of this urine was 1° C. below zero. At this time I also withdrew an ounce of blood from the arm and tested its freezing point, which was .6° C. below zero.

May 13, 24-hour specimen of urine —44 ounces; specific gravity, 1,020; albumin, a trace; no sugar, urea 1.1%, small amount of blood.

A radiographic picture of the kidney region was now taken. The first two plates were not well defined; the third, however, showed a distinct shadow in the region of the left kidney.

May 20, one month after he was first seen, the patient was sent to the hospital for operation.

He had improved somewhat in general health, but there was still some blood in the urine, and a deepseated, dull pain in the left loin. For several days preceding operation patient was given urotropin and lithia with potassium carbonate dissolved in hot water.

During the 24 hours immediately preceding operation he was given large quantities of salt solution per rectum.

After anesthetizing the patient for operation I made a cystoscopic examination. The vesical mucosa was normal in appearance. Apparently normal urine was spurting from the right ureteral opening, none from the left.

Patient was turned upon his right side, resting upon a firm roll. A transverse lumbar incision was made through the muscles and fascia down to the retrorenal fat. The kidney, atrophied and firmly adherent, was found high up between the eleventh and twelfth ribs. It was separated with difficulty from its capsule and drawn into the incision.

A hard mass could now be palpated in the pelvis. An incision was made through the lower pole of the kidney and into the pelvis. The calculus was now turned out.

The stone (Fig. 1) was pyramidal in shape, the sharp end projecting into the ureter, and the larger portion or base lay in the dilated pelvis and on adjacent calyx (Figs. 2 and 3).

When the stone was at rest the pointed extremity was tipped up and projected into the dilated pelvis, leaving the ureter free. The attacks of hematuria were doubtless due to the dipping down of the sharp point of the stone into the first portion of the ureter, thereby injuring and completely blocking

it. After removal of the calculus the ureter was probed to the bladder and found free of obstruction. The incision into the kidney pelvis was closed with catgut sutures. This was difficult, as the tissues were very friable. An iodoform gauze drain was introduced down to the site of incision into the kidney and brought out through the flank. Lumbar incision was closed in

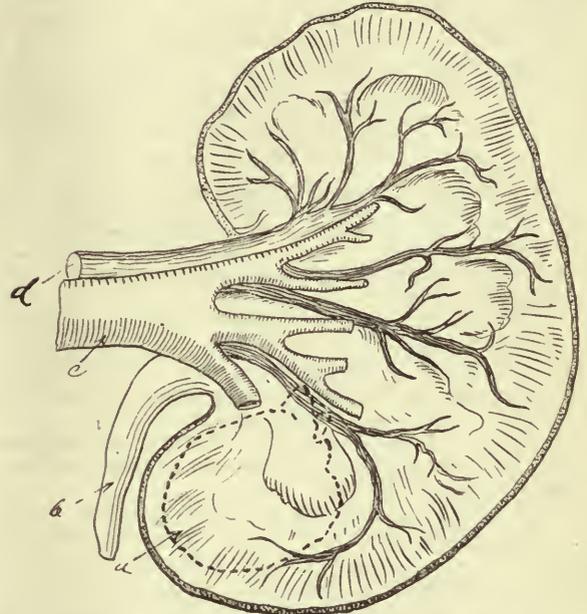


Fig. 2.—Location of calculus with reference to bloodvessels and ureter. a, Calculus; b, ureter; c, vein; d, renal artery.

layers. During the operation 1,000 cc. of normal salt solution was given in the breast.

The first 24 hours after operation patient passed 1,430 cc. of urine. It contained considerable blood. The second 24 hours 980 cc. of urine was passed; specific gravity, 1,020; albumin in considerable quantity; urea, 3%; blood abundant.

Patient left the hospital after a stay of four weeks. The external wound became infected and discharged pus freely for three weeks. This retarded recovery somewhat, but the patient steadily gained strength and left the hospital feeling well.

Improvement continued for three weeks, when he began to



Fig. 1.—Oxalate of calcium stone, actual size; weight, 138 grains. A, sharp projecting spine.

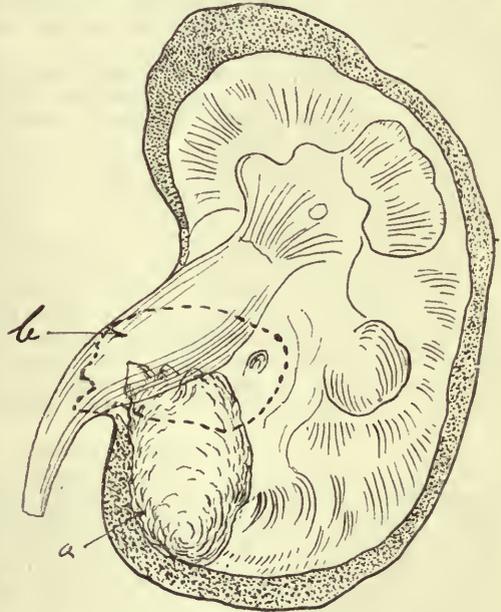


Fig. 3.—a, Stone at rest; b, stone impacted in ureter as found at operation.

complain of severe pain in the left loin. No tumor was demonstrable at this time, but a diagnosis of ureteral obstruction was made. The pain was relieved by large doses of morphia. The second night after the appearance of pain a large amount of urine escaped through the external wound, affording immediate relief.

During this period of obstruction the temperature rose to 101° F. The wound remained firmly healed except at three points, where a few drops of urine could be expressed.

Urine discharged from the fistula was examined and found to contain leukocytes, red blood corpuscles, and epithelial cells. Urine passed per urethrum during the existence of fistula was normal. The fistula closed about one week after its appearance and patient began to feel better.

Two months after operation patient had gained some, but complained of polyuria and dimness of vision.

A twenty-four hour specimen examined at this time showed total quantity 54 ounces; specific gravity, 1.018; albumin present; urea, 1%; large amount of sediment. Five months after operation patient had gained 12 pounds in weight. Wound remained clean and firmly healed. Urinalysis practically the same as at last examination. There was still occasional pain in the left kidney region.

This patient has steadily improved up to the present time. I have been unable to secure his consent to another segregation of the urine to determine the present functional activity of the kidney operated upon.

This case suggests several points which I wish to emphasize further:

1. It is usually possible to make an accurate diagnosis of renal calculus with the means now at hand. It is no longer excusable to pronounce every kidney complaint "Bright's disease," as had been done in this case, simply because there is a trace of albumin in the urine.

2. Proper preparation of the patient is an important adjunct in every kidney operation. This preparation consists in the following:

(1) Increasing the functional activity of the kidneys until the total output for 24 hours equals or exceeds the average for a normal individual. This may be done by the free ingestion of fluids and by the giving of enemas of normal salt solution for several days preceding operation. During and immediately following operation salt solution should be given subcutaneously in large amounts.

(2) The administration of urinary antiseptics, especially urotropin and salol. Before every operation attacking the parenchyma of the kidney the following factors should be carefully estimated:

(a) Quantity of urea excreted by either kidney for a definite period of time.

(b) The amount of sugar excreted by either kidney for a definite period of time after the injection of phloridzin.

(c) Cryoscopy or the freezing point of the urine, as compared with the freezing point of the blood in the individual under observation.

The normal freezing point of urine, as determined by Koranyi, is .9° C. below zero. Diminished solids in the urine raise the freezing point. Increased solids in the blood lower its freezing point.

When the freezing point of the blood approaches .6° C. below zero and that of the urine rises above .8° C. below zero, it is dangerous to operate.

In my case the freezing point of the urine was 1° C. below zero and that of the blood .6° C. below.

Kümmel, a German surgeon, reported 24 cases to the congress of German surgeons in April, 1901, showing the value of this method in estimating the safety of kidney operations. Of these cases 17 were for hydronephrosis and pyonephrosis, 7 for tuberculosis. Of the 24 patients, 22 recovered and 2 died, but the deaths were not due to renal insufficiency.

The relative value of the different methods of estimating the functional activity of one or both kidneys can not be definitely stated at this time, as too few observations have been made to justify definite conclusions.

Casper and Richter lay greatest stress upon careful estimation of the following factors: (1) Quantity of urea excretion; (2) amount of sugar excretion after the injection of phloridzin; (3) cryoscopy.

They express the utmost confidence in conclusions based upon these findings. I have found the phloridzin test a very reliable index to renal activity.

I have employed this agent in 12 cases to determine functional activity. The results have been remarkably uniform, and my confidence has grown with each trial.

One half-hour before ureteral catheterization or segregation is begun, 2 mg. of phloridzin is injected deeply into the lumbar muscles.

I have found in my experiments that the normal kidney, after the injection of the quantity named excretes sugar for from one to two hours at the rate of about .42%. The diseased kidney will vary from this standard in proportion to the pathologic changes in it.

The permeability of the kidneys to methylene-blue is also of some value as pointed out by Le Pine and Patoir, French investigators. It is not to be relied upon as an index to the permeability of the kidneys to normal constituents, although it bears a fairly constant relation to renal elimination.

The mortality of kidney operations will be reduced in proportion to the care with which surgeons estimate the foregoing factors before attempting surgical interference. The mortality from uncomplicated nephrolithotomies is low. E. H. Fenwick reports 33 successive cases with no deaths. Israel records 61 operations for nephrolithiasis with 9 deaths, a mortality of 15%. Of these 29 were uncomplicated, with 1 death; 12 for removal of ureteral stones, with 4 deaths; 5 for calculus anuria, with 2 deaths; and 15 nephrectomies for infected kidney, with 2 deaths. Ureteral calculi are now found much more often than formerly, and a perfected technic for the localization of renal stones will doubtless show about 33% lodged in some portion of the ureter.

Of 6 cases of nephrolithiasis seen by me in the last year, 3 have been located in the pelvis, and 3 in some portion of the ureter. Schenck reports 3 cases of ureteral stone operated upon in Kelly's clinic; and at the time of his report, less than a year ago, but 90 cases of ureteral stone had been reported. Leonard, of Philadelphia, to whom we owe so much for his work in this field of diagnosis, found over half, of 47 calculi photographed by him, to be in the ureter.

A very important part of every operation upon the kidney is the passage of a ureteral bougie from the pelvis of the kidney to the bladder, to establish freedom from obstruction.

ORBITAL CELLULITIS AS A SEQUEL OF SCARLATINA: THE REPORT OF TWO CASES.¹

BY

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Serous infiltration of the orbital tissues occurring in the course or at the end of scarlatina is a rare affection. Notwithstanding the common references in the treatises as to the causal relations existing between the two diseases, a careful search through the literature has failed to reveal the details of a single case. I desire, therefore, to record two instances of it that have come under my own observation and care.

In February, 1900, in consultation with Dr. William M. Welch, I saw a youth of about 17, who was in the midst of a protracted convalescence from scarlatina. In early life the patient had suffered from vertebral caries, and although the infectious fever had profoundly depressed his vitality there had been no serious complication until in his right orbit there suddenly developed with increasing severity a diffuse cellulitis. This unusual complication commenced with violent pains in the orbit and neighboring parts. It was accompanied by a chill, succeeded by marked elevation of temperature, and soon followed by an effusion of fluid into the areolar tissue with protrusion of the globe.

The eyelids were red, and excessively edematous. Digital examination showed great tenderness of the orbital tissues, which were hard and tense. For several days the protruding eyeball presented no inflammatory changes except a moderate degree of chemosis. The media remained clear and thus afforded ample opportunity for the study of the interior of the eye. At first there was transitory blanching of the fundus;

¹Read before the Philadelphia County Medical Society, May 27 1903.

this was followed by intense redness, and scattered throughout the fundus were fine hemorrhages. There was marked swelling of the disc, an overdistention of the veins and contraction of the arteries. The orbital pressure rapidly increased and obstructed the lymphatic and venous circulation. There was excessive edema of the conjunctiva and lids, followed by an intense livid redness, due to the distention of the vessels and hemorrhages from the conjunctival capillaries. A day or two before death the surface of the exposed cornea became dry and insensitive, and as its nutrition was interfered with necrosis speedily followed and the eye was lost. Until this took place no evidence of purulent effusion into the choroid and retina was apparent.

In spite of the use of external applications the intensity of the swelling was not relieved until after repeated incisions had been made deep into the orbit, allowing the escape of a thick sanious fluid. No purulent foci were found. The local and general symptoms failed to abate although every effort was made to support the system by the administration of tonics and forced nourishment. The patient became septicemic although the temperature curve was not hectic in character; a short period of delirium and coma was relieved by death, a week after the onset of the local symptoms. The examination of the orbital structures after death revealed only a diffuse serous infiltration; there was no evidence of intraocular suppuration.

In February of the following year I was called to attend a boy of 10 who, like the case just cited, was convalescing from scarlatina, and in whose right orbit there had developed an acute congestion with infiltration of the tissues, producing proptosis between the intensely edematous lids. The localized symptoms were in general similar to those present in the first case. Throughout the course of the process the cornea remained unaffected; the media continued clear and no evidence of intraocular exudation was at any time apparent, although the disc was swollen and intensely congested, as was the choroid.

The local alternate applications of hot and cold compresses and the administration of antiphlogistic remedies failed to reduce the swelling or relieve the tissues from the effects of the pressure. Accordingly, wide and deep incisions were made into the periocular tissues. These allowed the escape of a quantity of blood-tinged serum. Suppuration had not taken place. The boy was of active disposition and robust physique. It had been thought wise to keep him quiet and in bed, because his heart's action had recently become somewhat irregular and weak, although it had not presented demonstrable evidences of endocarditis. An hour or so after my last visit, on the eighth day after the onset of the local affection, without premonitory symptoms the patient was seized with a general convulsion, probably of cerebral origin, and died. Permission to make a postmortem examination was refused.

The records of the daily routine have been mislaid. The onset of the localized symptoms was sudden and there was a decided depression of the general constitutional vigor. The course in each case was rapid, death taking place within ten days after the appearance of the special symptoms. In neither case after repeated careful examinations was there disclosed evidence of any affection of the surrounding cavities or contiguous sinuses. The orbital borders were not diseased. The vision, however, was impaired and later altogether lost by the changes produced by the pressure on the optic nerve. The muscles were no longer capable of contracting, so that the globes could not be rotated, but remained displaced outwardly. The pressure upon the ciliary nerves blocked off the channels of reflex communication between the retina and the iris, so that the pupils remained dilated; and the iris failed to act in unison with its fellow when the eyes were exposed to bright light. The left eye and orbit in each case remained unaffected.

In the first case the short time allowed in which to examine the body and the limitations of the privileges granted made it quite impossible to study the subject with any degree of satisfaction. The refusal of the privilege to make a postmortem examination in the second case was indeed most disappointing, for this child had only suffered from scarlatina, and therefore the condition of his body was apparently dependent upon the pathologic changes occasioned by specific toxins.

In spite of my interest in the study of these cases I can only theorize as to the possible causes for this additional malady. The individuals were apparently progressing favorably toward recovery, yet death occurred soon after the onset of the local disease. To what was death due? Was the orbital affection a part of a general process in a profoundly toxemic subject or

had there become concentrated in the orbital tissues poisonous matters of sufficient virulence as to affect the economy with a fatal result?

In each instance there was satisfactory evidence that the orbital affection was not due to an extension of inflammation already existing in adjoining or communicating sinuses. My first supposition was that I should find suppuration in the orbit and thus assign the cause to the inflammation of these surrounding regions. No bacteriologic examination of the discharge was made, yet the matter was not apparently purulent.

It is not unreasonable to suppose that the morbid elements circulating in the blood of scarlatinal patients have properties which excite changes in that medium and tend to its decomposition; and moreover, the coats of the vessels may become so altered as to favor the formation of a thrombus. These changes doubtless take place more readily when the enfeebled heart is incapable of driving the blood current onward at the accustomed speed.

Thrombotic processes in other infectious diseases frequently present serous or suppurative infiltrations specifically localized in other portions of the body. When the present cases are compared with these others the analogy is quite apparent, for here the effects of such a process were most manifest in the orbital region.

In conclusion, therefore, it is not unreasonable to advance the hypothesis that there had been so great a massing together of the morbid hemic elements as to produce a phlegmon of the orbit which need not necessarily have undergone degeneration or have given rise to suppuration. Consistent with this is the fact that the materies morbi of scarlatina is not essentially saprophytic in its action. In the case of the older boy, it is probable that the local affection had produced a fatal septicemia; while in that of the younger, death may have been due to the sudden passage of an embolus, detached from a heart-clot or from fragments of an unsuspected lymph deposit on one of the cardiac valves, which had become lodged in a vital area in the brain. Again, death may have followed the formation of a thrombus passing either from the ophthalmic vein to one of the communicating vascular sinuses or in the connections between the cervical veins.

When we consider the histories of these cases and note that in each individual the general strength became markedly affected upon the development of the special symptoms, and that in each instance death speedily ensued, there comes to us the thought of the possible good that might have been gained had the eyeball been enucleated. The orbit could thus have been persistently drained of the materials which were rapidly being absorbed by the lymphatics, and which were apparently of such virulence as to cause the death of the individuals. Assuredly it is our duty to establish the drainage of the orbit as early and as completely as possible by elaborate incisions into the periocular tissues, because in these cases whatever relief there was we gained by that means; and it is at least fair to suppose that a more complete drainage might have evacuated the poison which apparently caused death.

Pure Milk and Increased Deathrate Among Children.

—The greatly increased deathrate in Chicago among children last week is attributed to impure milk. During the week there were 184 deaths of children under 5 years of age as against 138 deaths during the previous week, or an increase of 33%; compared with the corresponding week of last year the increase was 43.7%. The complaint comes especially from the Jewish quarter where the inferior milk supply has aroused great indignation. This supply is furnished by small dealers in the quarter, and much of it is skimmed and sour before it is delivered. Another serious trouble has arisen from the fact that milk drivers have resolved that only one delivery a day should be made instead of two deliveries as formerly. The health officials of the city are taking active steps to correct the present evil and to punish those guilty of furnishing impure, skimmed, and putrid milk.

ARTERIOVENOUS ANEURYSM OF THE FEMORAL VESSELS: LIGATION OF THE EXTERNAL ILIAC ARTERY; FAILURE OF COLLATERAL CIRCULATION; AMPUTATION; DEATH.¹

BY

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of Grand Rapids, Mich.

The question of issue in our surgical cases should have no bearing whatever upon the matter of reporting the same or not in the columns of the medical press. The real question is the establishment or accentuation of surgical principles which in their practical application save or prolong the lives of our fellows.

Our obligation to the State as well as the desire to serve our fellows in time of distress should urge us to contribute anything which will add an item of value in the treatment of subsequent patients. Hence the following report:

U. D., aged 21, a young man of Holland Dutch extraction, about six years ago (then a lad of 15) was investigating a gaspipe dynamite bomb held between his thighs when, for some reason or other, it exploded, tearing several irregular openings in the center of the internal aspect of the right thigh. The physician sent for (since deceased) put a simple dressing upon the wound and gave no other treatment. When seen by me the patient stated that a thrill was noticeable almost immediately after the receipt of the injury. Of course a traumatic aneurysm speedily developed and from that time until I saw him it underwent gradual and progressive development.

About the middle of December, 1902, an abscess formed in the tissues overlying the aneurysm, and on December 28 spontaneous evacuation of pus took place. The next morning Dr. George H. Baert, of this city, was called to attend the patient. He found a ragged opening over the aneurysmal sac from which pus and a little blood was oozing. Realizing the extreme gravity of the situation he applied an aseptic dressing snugly about the parts and returned in an hour. Upon the cautious removal of the dressing a stream of blood seemingly as large as his little finger shot out of the abscess opening. Dr. Baert thereupon placed a firm compress over the aneurysm and telephoned for me. I found the young man pale and weak, not from loss of blood, but from general debility and recent illness and pain incident to the development of the abscess. Under the bloodstained compress applied by Dr. Baert and occupying the center of the internal aspect of the right thigh lay an aneurysm as large apparently as two adult fists. Expansile impulse and bruit were very noticeable from the region of Hunter's canal to a point two inches above Poupart's ligament.

The boy was moved to the U. B. A. Hospital where, under anesthesia, the blood current was controlled by a rubber constrictor at the upper limit of thigh, held *in situ* by the Wyeth mattress needless passed through the inner and outer edges of the limb, and the diseased condition carefully investigated.

It was then ascertained that the entire middle third of the thigh surrounding the aneurysm was indurated and brawny from inveterate exudation, thus rendering any thought of attacking the disease at its site simply out of the question. The old surgical rule of treating a traumatic aneurysm by the method of Antyllus, or local proximal and distal ligation plus excision of the sac or not, could not be entertained. When it became evident that distant, proximal ligation was the thing to do the question arose as to the prospective site of that ligation. Right here the principle of John Hunter came in for application, viz., ligation of the vessel where its walls are sound. The artery in the upper confines of Scarpa's triangle and for two inches above Poupart's ligament, as noted before, was thinned, dilated, sacculated and evidently diseased. It was pulsating violently and manifested the expansile dilation and bruit characteristic of aneurysms. It was determined to seek the iliac artery for a safe ligation site.

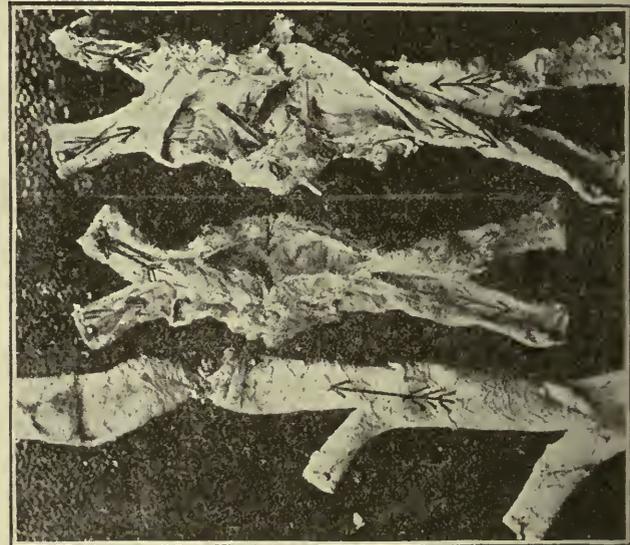
This vessel was accordingly exposed through a curved incision mainly parallel to Poupart's ligament. After splitting the aponeurosis, severing the anterior (Poupart) attachment of the internal oblique muscle, and, following this, the transversalis fascia, the pouch of peritoneum was exposed. This was gently lifted from the pelvic floor and successfully held out of the way by a broad metallic retractor. The iliacus muscle, the psoas magnus, psoas parvus, and iliac vessels were readily exposed. The vessels, both artery and vein, were dilated to a size larger than an adult thumb and were thin and evidently diseased. At a point about 2½ inches above Poupart's ligament the vessels rather abruptly regained their normal size. At this point the vein, which had lain on the inner side of the artery, passed beneath it and here, by means of a Cleveland ligature carrier cautiously passed, a loop of stout kangaroo tendon ligature was

drawn between the vessels. Two ligatures were tied about the artery, the proximal one first, shutting off the stream, and the distal one about ½ inch from its fellow in order to bring about kindly and definitive healing by serous approximation.

All tumult ceased in the limb and the tissues, especially the toes, became waxy. The limb, except the toes, was buried in thick, warm cotton and the body of the patient as soon as possible after the anesthesia propped in bed for the purpose of stimulating the collateral flow.

Considering the anastomoses between the deep and the superior epigastric arteries, the deep circumflex iliac and the lumbar, the internal and the external pudics, the obturator and the profunda, hope of successful collateral supply had a good basis. In 24 hours this hope seemed about to be realized, for the toes, which after an hour or two of the waxy look grew mottled and suspicious looking and in which sensibility was abolished, took on a pinkish cast and sensation returned to such a degree as to enable patient to detect pin-pricks and to determine which toe was pricked. At least 6 or 8 medical men beside myself who saw the patient that morning thought the collateral supply quite well established, but after 24 hours more gangrene developed rapidly to the aneurysmal site. Amputation, with but slight hope of saving the boy, was done just below the trochanter major. Death, in spite of stimulants and subcutaneous salt infusions, ensued six hours later.

I have been asked why I did not recommend amputation primarily and have replied that high amputation in this case primarily would have been immediately more dangerous to life, as the sequel shows, while the operation chosen offered the boy the best chances all



Distal.

Proximal.

around—the saving of life, the preservation of the limb, and the probable cure of the aneurysm. Amputation naturally would have meant sacrifice of the limb and in the case of this boy would have been more quickly fatal than was the operation done. The deligation plan was the conservative one and the one in my opinion to be elected in such cases.

As to the issue, had death been caused by the hemorrhage the operator might be considered culpable; but for lack of sufficient collateral nourishment no surgeon can be held responsible. This failure I deem due to the infiltrated and solidified condition of the middle area of the thigh.

After amputation I examined the limb and found present two pieces of rough and irregular gaspiping about an inch square. One of the pieces evidently wounded both artery and vein, as an opening one-third inch by one-fourth inch existed directly between the vessels with no intervening sac, thus giving rise to an aneurysmal varix and not a varicose aneurysm.

Fig. 1 shows this opening from the venous side and also shows the opening from the vein into the sac (as indicated by the match). Over the venous side of the arteriovenous fenestra lay a curious, shelf-like fold of

¹ Reported at the annual meeting of the Kent County Medical Society (official branch of the Michigan State Medical Society), Grand Rapids, Mich., January 13, 1903.

tunica intima (indicated by cross) by means of which a large proportion of the return venous flow passed above the stream of arterial blood, a large share of the latter proceeding below the shelf mostly into the sac, although some must have mingled directly with the venous blood.

Fig. 2 exhibits the arterial side of the abnormal opening and also a section of the arterial system, showing point of ligation. This section is composed, as can be understood, of abdominal aorta, stump of left common iliac, whole of right common iliac, stump of right internal iliac, and whole of external iliac (to plane of Poupart's ligament). The ligatures can still be seen about two and one-half inches above the ligament site.

The size of the dilated portions of the arteries and veins is not evident because of the contracting quality of the preservative fluid.

The aneurysm itself, as is the case with all aneurysms of traumatic origin, had no intrinsic sac-wall, its periphery being the condensed surrounding tissue.

In conclusion, the lesson to be learned from this case is that such injuries should always be subjected to radical treatment at the time they are received, or shortly thereafter, and that the procedure to be adopted at such time is the operation of Antyllus.

A CASE OF POSTOPERATIVE TETANUS, WITH SPECIAL REFERENCE TO THE FOCUS OF INFECTION.¹

BY

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of Philadelphia.

To me it has always been a source of great satisfaction when able to satisfy my own mind that nothing I have done, nor left undone, can be held responsible for post-operative fatalities. Unfortunately we are not, or at least I am not always able to place myself beyond this pale of uncertainty. In the following case, however, I do feel that at least the source of infection can be satisfactorily accounted for, and its particular focus of concealment.

The patient was a young woman of 22, the daughter of a farmer, whose duties, in addition to household work, included milking cows, feeding pigs, and attending to chickens. With the exception of measles and chickenpox, both of which she had in very early childhood, she had never been confined to bed from illness. A contusion of the back caused by a fall from a horse about three years previous was the only ailment from which she remembered suffering. She was sent to me from a distant State by her physician, Dr. Enoch George, with the history of having been confined to bed five weeks with peritonitis, said to be of gonorrhoeal origin. During the early weeks of this attack the suffering had been most intense, but had become less acute by the time I first saw her. There had been through the entire period of her confinement to bed a free purulent discharge from the vagina, which during the early weeks was blood-mixed. She still complained greatly of pain on urination.

She was admitted to my hospital September 30, 1902. The journey to the city, which necessitated a number of hours, was the cause of a renewal, to a great extent, of the intense abdominal pain, and on admission the abdomen was so tender that satisfactory examination could not be made without an anesthetic. Twenty-four hours after admission she was anesthetized, and examination disclosed the presence of a mass in the culdesac, and firm fixation of the uterus posteriorly; there was also very marked thickening of the entire vault of the vagina; the lips of the urinary meatus were everted and eroded; there was a free purulent discharge from the body of the uterus. The pulse, which ranged from 110 to 120, clearly indicated undoubted presence of pus in the pelvic cavity.

As pus was noticed flowing freely from the cervix, an intra-uterine douche of saturated boracic acid solution was given, in conjunction with free irrigation of the vagina, every third hour, with the idea of cleansing, so far as possible, a very likely source of infection at the time of operation, as well as during the period of convalescence.

On the morning of the third day, being the morning following examination under ether, the patient complained of toothache and swelling in the left cheek. Examination of the mouth at this time showed the presence of eleven extensively carious teeth; indeed, most of them were hollow roots. The

inflammation in the alveolar process went on to the stage of suppuration, and on the third day was freely excised and cleansed of a considerable quantity of pus.

On account of the development of this alveolar abscess the abdominal operation was of course postponed; treatment by irrigation of the uterus and vagina being continued, the former once daily, the latter every third hour. By the eighth day after admission, which was two days after all traces of suppuration had disappeared from the alveolar abscess, the uterovaginal discharge had greatly lessened, dysuria also had entirely disappeared, and the patient's general condition had decidedly improved, except the pulse, which continued 100 to 105. It was therefore decided to remove the intraabdominal lesions.

The pathologic condition found consisted of large bilateral pus-tubes with an ovarian abscess on the left side, while the right ovary was the seat of multiple cysts. The difficulties in the operation were no greater than those always encountered when extensive adhesions are present, not only in the structures that are to be removed, but when the body of the uterus is anchored by adhesions. Operation was completed within 40 minutes with no loss of blood, excepting that caused by separation of adhesions, which in this case was extremely slight. Only two pedicle ligatures, one on either side, were left within the abdomen, and these, together with the silk used for closing the abdominal incision were taken from a skein from which I had been using for more than a year, and have since used. Care was taken in this case, as in all of my operations, to pack off thoroughly the viscera from the field of operation before beginning the work of separating adhesions, to avoid the well-known dangers of escape of infective material. In this case the abscesses were removed without breaking the walls, and the uterine end of the tube was thoroughly curetted on both sides, touched with carbolic acid and a cuff of the serous membrane was whipped over the stump, this being the precaution I invariably take against possible infection when there is undoubtedly an infective endometritis. The abdominal wound was closed with five through-and-through sutures without drainage.

The patient reacted in a perfectly natural way, neither pulse nor temperature indicating anything unusual, pulse never going beyond 100; urine was voided five hours after operation, and she complained in no way of pain or suffering from the operation more than the usual amount of distress that is complained of, especially during the first 12 or 14 hours, this being principally a stinging, referred to the abdominal wound. On the morning of the third day after operation the bowels were open twice after administration of a saline (sulfate of magnesia).

From this time on, as is my custom, she was given a semi-solid diet, and progressed as satisfactorily as I have ever known a patient to progress after laparotomy, with the single exception of the pulse, which ranged between 100 and 105 until 1 o'clock on the morning of the sixth day after operation, when she reported to the nurse a strange feeling about her eyes, describing it as a pulling in all directions. As it seemed a trifling complaint the nurse paid little attention to it other than to try to pacify the patient, and within a half hour had succeeded in getting her to sleep again. At 5 o'clock she again awoke with these primary symptoms decidedly increased, and in addition complained that her jaws were stiff. The matter was then immediately reported to me, and I saw the patient within an hour, or between 6 and 7 o'clock. I noticed at once a peculiar expression, also a noticeable standing out of the muscles of mastication; there was not, however, at this time any rigidity of the muscles of the neck. The peculiar smiling expression (risus sardonius) was decidedly noticeable. Though I had never before seen a case of postoperative tetanus my suspicions were aroused. Without delay I undressed and inspected the abdominal incision and found it perfectly dry, without the least erythema about it, and entirely united, with the exception of possibly one-eighth of an inch where there had not been perfect approximation of the skin. There was not a particle of secretion about the wound nor soiling of the dressing. However, the stitches were removed; the abdomen was perfectly flaccid; there was no pain nor tenderness on palpation or percussion, and everything within and without the abdomen seemed perfectly normal. She was given at once sulfate of magnesia, and within a half hour 1.3 grams (20 grains) of chloral and 2.6 grams (40 grains) of potassium bromid. Trismus from this time grew rapidly worse, and by 10 o'clock it was impossible to separate the teeth. The sternocleido mastoid was the next muscle that became the seat of spasm; by 12 o'clock the muscles of the neck were all completely spastic with paroxysms of increased spasm at intervals of three or four minutes. At no time was there any spasm of the muscles of the arms, abdomen, or lower extremities until about four hours before death, when there was noticeable contraction of the muscles of the back and abdomen during the paroxysms only.

At 12 o'clock the patient was given subcutaneously a million units (20 cc.) of tetanus antitoxin, and by enema 4 grams (1 dram) of chloral and 31 drams (1 ounce) of potassium bromid; morphia was given hypodermically in 16 mg. ($\frac{1}{4}$ grain) doses; eserine was injected directly into the spasmodic muscles. A second injection of antitoxin was given at 2 o'clock; at 9 o'clock 500,000 units (10 cc.) were again injected into the spinal canal, and at 11 o'clock another million units were used subcutaneously. The patient died at 4 o'clock the following morning, or 27 hours after the first symptoms developed.

¹Read before the Philadelphia Obstetrical Society, February 5, 1903.

The absence of the germ in the one stitch that was examined, the others having been burned with the dressings through mistake of the nurse, and my inability, owing to the tightly closed mouth, to secure a satisfactory culture from the teeth cavities, robs us of the positive proof that it was concealed therein, and compels me to rely for my decision as to the seat of infection on the knowledge possessed of the specific germ of tetanus, whose habitat is known to be in the earth, especially in manure; also that it is not transmitted by the air. It seems reasonable, in view of these facts and with the environment of this particular patient, to consider her specially liable to have become infected with the tetanus germ at her home, and that the extensive caries of the teeth should furnish a most vulnerable storehouse for its concealment. Coupled with this, her long illness so reduced her resisting powers as to require only a further step in the way of operative intervention to enable the germ to develop rapidly. Certain it is that the germ could not have been admitted at the time of operation, for all modern observers (these being mostly among the French, German, and Italian) show that the period of invasion is between 9 and 21 days, and as the patient developed the symptoms on the morning of the sixth day after operation, the evidence is in favor of its having been already within the system. We are further supported in the belief that the germ was hidden within the mouth by the onset of the disease; that is, that the muscular contraction begins in the muscles nearest the point of infection. This view is accepted by such modern observers as W. Fleimer, Leyden and Blumenthal, and Ver Haagen; also by several cases more or less recently reported in support of it, notably one by N. J. Conklin,¹ who cited a case in which an injury to the thumb developed tetanus, the twitching in the hand and rigidity of the muscles of the hand and arm occurring 16 days after the injury was received. Next followed the body and legs, trismus coming on 7 days after contraction of the hand and fingers, or 30 days after receiving the injury.

Morgan, in "Home System of Surgery," states that it is a remarkable fact that the spasm attacks primarily the muscles of the part injured instead of the muscles of the jaw, and relates two cases, one that of a sailor admitted to Guy's Hospital with an injury of the thumb. The first symptom developed two months after injury was received, and consisted of a painful neuralgic affection of the muscles of the ball of the thumb without any appearance of inflammation of the part. The second case was that of a child who had received a blow from a schoolmaster. Both pain and spasm in this instance commenced in the injured part, and the first true symptom of tetanus was gradual spasmodic contraction of the flexor muscles of the hand, drawing all the fingers into the palm. The cramps subsequently extended to the arm and eventually to the muscles of the back.

It is also a fact that the degree of local injury bears no relation to the severity of the symptoms, indeed it is much less frequently met in the severer forms of injury than in less severe forms. Statistics show that in 1,364 operations, both major and minor, only one case of tetanus was observed. In this case, as noted by description given by Dr. Morgan, there was a feeling of stiffness in the tongue as well as marked rigidity of the muscles of mastication.

Alfred Poland says that the first evidence of tetanus but too truly portrays the unmistakable nature of the disease. All observers seem to agree that however great and severe muscular spasms may be, the muscles of the hand and fingers are rarely affected unless the infection is admitted through injury of them.

Prognosis.—As to prognosis the same observers also state that it is the gravest when trismus is the earliest symptom noted.

SPECIAL ARTICLES

ECHOES FROM THE MADRID INTERNATIONAL MEDICAL CONGRESS.

BY

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of Chicago.

The Madrid International Medical Congress has passed into history. The members who attended will relate their experiences and observations in their respective medical circles in near and remote parts of the world, and the profession at large will pass final judgment upon its scientific merits after perusal and study of its published transactions. Like in all similar events praise will not be unmingled with criticism. The attendance was larger than was expected. The register contained the names of 6,961 members, of which number 3,530 were credited to Spain, and 3,431 to foreign countries. The foreigners were represented by the following countries: Germany, 776; Australia, 7; Argentine Republic, 45; Austria, 258; United States of Colombia, 2; Cuba, 13; Denmark, 35; Belgium, 98; Bosnia, 3; Brazil, 252; Bulgaria, 4; Egypt, 12; United States, 195; France, 826; England, 238; Greece, 9; Hayti, 1; Italy, 238; Japan, 4; Luxemburg, 4; Mexico, 25; Norway, 51; Holland, 16; Peru, 4; Portugal, 33; Roumania, 21; Russia, 297; San Domingo, 2; Servia, 9; Sweden, 21; Switzerland, 35; Turkey, 11; Uruguay, 3; Venezuela, 18. The government, or as they were designated here, official delegates, numbered 474. Many of the members who registered by mail did not attend. The tedious railway travel in Spain and the limited hotel accommodations of Madrid did their share in limiting the attendance; the many places of great historic events and the boundless treasures of art in which the country abounds attracted others who were not prompted by a sense of hunger or thirst for additional medical knowledge. The figures quoted above indicate plainly that the Congress was overwhelmingly Latin in its make-up. The euphonious Latin languages—Spanish, Portuguese, and Italian—were most in use in conversation, reading of papers and discussions. The French occupied the second place in the scale of frequency. The average Spaniard has but little desire to acquire foreign languages. Nearly all of the educated classes speak French, very few English or German. Among the medical men German is a rare accomplishment and only a limited number of naval surgeons have acquired a speaking knowledge of English. In the section meetings English was seldom heard and German even less frequently. A fair estimate of the number of delegates in actual attendance would be about 5,000. The delegates were divided into three classes: (1) Official or government delegates, who received a gold badge with a ribbon of the national colors; (2) delegates from medical societies or scientific institutions, who wore a silver badge with ribbon; and (3) members of the Congress by subscription, who were labeled with a plain gold badge. These badges played an important role in the selection for a number of the most important social features, the official delegates being shown a decided preference.

Opening Exercises.—Long before the time set for the opening of the Congress, at 3 p.m. Thursday, April 23, the Royal Opera House was packed with a brilliant audience. On the floor every inch of available standing room was occupied by a seething mass of humanity. The boxes were filled by distinguished government officials, prominent citizens, military and naval officers in full-dress uniforms, and invited guests. When the young King entered the royal box accompanied by his mother, Infanta Maria Theresa, and Infanta Isabel, the immense audience rose as a body and the band played the royal march. The royal party was not cheered so vociferously as is the case when one of our Presidents makes his appearance on a similar occasion, but the greeting was a well-meant one, and was participated in heartily by the foreign delegates from all parts of the world. The youthful potentate and his august mother made a very favorable impression upon every one present. The King listened attentively for two hours to the addresses of welcome and the numerous long and short

¹ Ohio Medical Journal, October, 1881.

responses. An incident occurred here which excited some newspaper and public comment. When our country was called upon to respond a profound and at the time a painful silence was the only reply. The call was repeated with the same result. What was interpreted by some as an intentional slight to Spain on part of our delegation was simply due to a lack of organization of our delegates at this as well as subsequent occasions, for which no individual delegate was to blame, but something which should be studiously avoided in the future. As it was no one felt authorized to respond, when our country was called upon, through its scattered delegates. The matter was subsequently explained to the proper authorities, and on leaving Madrid I was informed by a Spanish naval officer of high rank that this incident created rather a favorable impression than otherwise among his countrymen. The King wore the uniform of a field marshal. He did not speak. I was informed that "in public the King never speaks." The Royal Theater is a large and magnificent structure, but its interior proved entirely inadequate to afford even standing room for the immense throng desirous of witnessing the opening ceremonies, the most attractive feature of every International Medical Congress.

General Sessions.—The last session of the Congress was held in the large amphitheater of the Central University. At this meeting it was announced that the Moscow and Paris prizes for the best scientific work had been awarded to Grassi, of Rome, and Metschnikoff, of Paris, and that Lisbon, Portugal, had been selected for the next place of meeting.

By what motives and manner of reasoning the committee on nominations decided upon Lisbon as the next place for the Congress is difficult to comprehend. This action necessarily means two consecutive Latin congresses and will inevitably cut down the attendance to a minimum. Lisbon is a much smaller city than Madrid, its hotel accommodations more limited, and it is also less accessible. All serious objections against this selection, to say nothing of the fact that the Latin languages will again rule the deliberations of the Congress. Portugal is an interesting country to visit. Lisbon is a charming little city, but the next Congress should have met in a more central place and in a large city with ample hotel accommodations and in a country where the English and German languages carry more weight. If a general criticism of the Congress just ended is permissible it is the fact that the hotel facilities of Madrid were inadequate to the requirements of so large an attendance, and this difficulty will be greatly increased at the next place of meeting. I am confident the United States will send the usual large contingent of delegates, who will represent in a creditable manner the scientific work of our profession notwithstanding the inconveniences they will meet in finding accommodations, and the difficulties they will have to encounter in making themselves understood.

During the intervening days the general sessions were held in the aula of the San Carlos College of Medicine. Sixteen speakers were on the program, among them Dr. Howard A. Kelly. The title of the address of this speaker was a significant one: "The Passing of a Specialty." The time of the general sessions, called here conferences, interfered seriously with the work of the sections, and it was probably for this reason that the attendance was small. Among the more distinguished speakers may be mentioned Waldeyer, of Germany; Politzer, of Austria; Arthur Thomson, of Oxford; Brouardel and Robin, of Paris; Maragliano, of Italy, and Pawloff, of Russia.

Section Work.—There was at this as well as all previous meetings of the International Medical Congress no lack of papers for all of the sections. The furore of the pen of the present generation of medical men is made obvious at all gatherings from the smallest county and city medical societies up to the International Medical Congress. The average attendant is no longer content to listen and learn; he is imbued with a sense of duty that compels him to produce, to write, to teach. The result of such a crowded program was here the same as elsewhere on similar occasions. The limited time allotted to each paper made the reader anxious to go over as much ground as possible, hence he felt it his duty to read rapidly, which only too often meant unintelligibly, followed, if by any, a short and imperfect discussion of the subject presented. The scientific

work of such a large assemblage of medical men must of necessity be done in the different sections. The section program of the Madrid Congress was an unusually prolific one, comprising the titles of nearly 2,000 papers on every possible subject pertaining to medicine and surgery and allied sciences. These papers were distributed among 16 sections and several subsections. Many of the authors of papers announced on the program were conspicuous for their absence, an evil by no means limited to the International Congress and one which should receive the earnest attention of the committee on program. It is not at all unusual for authors to send in the titles of papers they never intended to prepare, much less to present them in person. Such deception deserves censure and should be made impossible by more stringent regulations. Another quite noticeable irregularity is the presentation of papers after they have done service at some previous medical society meeting and after they have found space in some medical journal months and years before their resurrection on such an important occasion. In looking over the general program I had no difficulty in detecting a number of very familiar titles. The friendly spirit of the Spaniards toward the Americans became manifest when it came to the distribution of section honors. The following delegates were made honorary presidents of sections: Dr. Howard A. Kelly, Gynecology; Professor Stuart, Chicago, Physiology; Dr. Reginald Sayre, Diseases of Children; Dr. C. H. Hughes, Neurology; Dr. R. H. Reed, General Surgery; Dr. Harlan, Dentistry; Surgeon-General O'Reilly and Dr. N. Senn, Military Surgery. All of the sections held their meetings in the National Art Gallery and Museum, a spacious and imposing structure, a lasting monument to Spain's perpetual interest in the preservation and promulgation of art. This centralization of section work had many advantages, but was not without objection. This magnificent building is centrally located and easily accessible, but the proximity of the sections and the many priceless art treasures afforded too many diversions from continuous hard section work. The "congressiste" could not resist the temptation in passing through the building to note what was going on in the different sections and to study and admire the wonderful paintings, illustrating modern Spanish art. Then, too, the picture galleries were open to the public, a circumstance which contributed its share in aggravating the confusion. The section meetings were held from 9 o'clock a.m. until noon and often the time was extended for another hour or two. As a rule, the man who spoke loudest and was most liberal in making gesticulations enjoyed the largest attendance. As indicated by the titles of the papers presented most of the modern subjects which are at this time agitating the progressive professional minds were ably presented and thoroughly discussed. Some of the most valuable papers were presented by Spanish authors. The Spaniards are fluent speakers and delight in debate. Spain is keeping pace with her European neighbors in the advancement of the science and art of medicine. The forthcoming transactions of the Congress will bear ample testimony to the correctness and force of this statement. We must come in closer touch with Spanish medical literature if we wish to keep pace with the newest and some of the best work that is being done in unraveling the mysteries of disease and in search of new and more effective therapeutic resources.

Spain can no longer afford to hide what she has done toward the advancement of modern medicine within her own boundaries; her excellent work in this direction must become common property wherever scientific medicine is taught and practised. One of the striking defects of the section work in most, if not all, of the sections was the limited number of demonstrations—the teaching by the kindergarten method. This lack of practical demonstration was keenly felt by those who were not familiar with the languages in most common use. The too numerous and often quite lengthy papers undoubtedly constituted a bar to more satisfactory and extended demonstrative teaching and if so this obstruction should be eliminated at the next meeting of the Congress. What the seeker for knowledge on an occasion like this desires most and looks for are ocular demonstrations illustrative of the ideas the speaker desires to convey to his audience. The section meetings were not so well attended as one would expect after looking over the subjects scheduled in the general program. Too

many of the delegates had come with the intention of doing sightseeing instead of attending to the legitimate duties of the mission on which they had been sent. This kind of dereliction of a voluntarily assumed duty is only too common, and merits, to say the least, a sharp criticism. The confusion of languages that prevailed throughout the entire Congress found its way into the general program. I will give only a few instances of title mutilation as it appeared in the general program for the authors who presented papers in English and German.

My friend, Dr. C. H. Hughes, of St. Louis, was announced to read a paper in the Neurological Section on "Eew Vievos of the Virile Reffiese." I wonder what Lindsay Steven, of Glasgow, thought when he saw printed under his name "A Case of Ocute Lymphatic Leukalmnia urt Minde vous Lymphatic Medules in the Skin." Dr. R. H. Harvey Reed, of de Rock Springo Hugo, was expected to discuss "Metral d'implantation duto the Rectum." I was registered in the Military Section, and drew a long breath when called upon to present my paper on "The First Dirping en the Battlefired."

The German language fared no better than the English in the program.

I am sure the patriotic feelings of Korbitz, of Berlin, received a shock when he saw his name coupled with the title of his paper on "Das Schmelzen des leichtflussigen Forzellans una cin hener electrisher ofen." I do not know the fate of the paper by Grunmach, of Berlin, in the Section of Internal Medicine, but the title as printed was certainly a strange one—"Uibu dis Fortschritte in des Diagnostik dirrili dis X Strahlen."

It would certainly not be in good taste to criticise too severely the orthography of the English and German language in a product of the Spanish press, and I have quoted these illustrations only as a hint to the committee on program for the next meeting of the Congress, to which I desire to add the well-meant suggestion to consult some one who has a fair knowledge of the two languages, which are too widespread and important to be ignored, before they deliver the program to the printer, and then engage the services of a competent proof-reader.

Exhibits.—One of the great attractions at the meetings of the American Medical Association is the exhibition hall. It is here where the country and village practitioners replenish their stock of proprietary medicines without depleting their bank accounts and collect current medical literature for their libraries without diminishing the contents of their pocket-books. It is here where he can quench his thirst with sparkling waters of all kinds and satisfy his sense of hunger with predigested bread, milk and meat without augmenting the size of his boarding-house bill. If he is so inclined he can satisfy his desire for alcoholic stimulants without invading the precincts of saloons on his way to and from the meetings, and all that is asked by the exhibitors for his indulgences is the goodwill of the patrons after their return to their respective fields of activity. It is here where he can learn the names and uses of new instruments, apparatuses and splints minutely described and illustrated in catalogs which are distributed with a liberality bordering on actual extravagance. If any of the delegates came to Madrid with any such expectations and intentions they were certainly disappointed. The Madrid merchants and manufacturers either failed to grasp the opportunity or persisted in conducting their business in the usual everyday routine manner notwithstanding the streets of the city were thronged with 5,000 strange doctors from all parts of the world. The only exhibits and efforts at advertisement that I saw were by a Paris firm which dispensed Vichy water and distributed literature pertaining to its health-preserving and health-restoring qualities with laudable liberality, and a small stand where a sorrowful looking individual distributed circulars of a de luxe edition of Don Quixote. No books, no instruments, no proprietary medicines in sight. In speaking of the section work I emphasized the fact that demonstration teaching was not done to the extent it deserves. I must refer here to an exhibit in the surgical section of plaster models by Doctors Bockenheimer and Frohse, of Berlin, which represented the different steps of Bassini's operation for inguinal hernia as performed in Professor von Bergmann's clinic. A study of

these models imparted a full and detailed knowledge of the technic of the operation and demonstrated clearly the value of such object lessons in the teaching of operative surgery. Let me express the hope that this kind of section work will attain greater popularity at future meetings of medical societies, large and small, and more especially of the International Medical Congress.

Social Entertainments.—Spanish hospitality has become almost proverbial throughout the entire world. This national virtue is characteristic of all classes of society—high and low, rich and poor, educated and ignorant. The hospitality practised is of a charming kind, it is not a hospitality of the head but of the heart. The Spaniard makes you feel that the house you visit is your own, that the things you enjoy are furnished by you, in fact that you are the host and he the guest. The Spaniard is an ideal entertainer, a polished gentleman, refined in manners, whose pleasure it is to serve his friends. The spirit of the knighthood days lives in spite of time and great national and family reverses. It makes itself felt on the streets, in the mansions of the rich and the hovels of the poor, in places of public amusement, the market, shops, and especially in educational and charitable institutions. The members of the Congress regardless of nationality were made to feel that they were the guests of the nation. The royal family made its appearance on three different occasions for the benefit of the visitors. Few, if any, crowned heads would condescend to receive in his own palace several thousand people in one afternoon as was done by King Alfonso. The reception at the palace at three o'clock in the afternoon on the second day was a brilliant affair. The military men appeared in gala uniform, the ambassadors in court and citizens in full dress. At the entrance to the palace the visitors had to show the card of invitation. The delegates were grouped in different rooms according to nationality. The Americans were assigned to the dining-room, where they were met by Minister Hardy, who introduced the King to a number of delegates who occupied the front row, at the head of which stood Surgeon-General O'Reilly. The King was followed by his mother and Infanta Maria Theresa, both of them dressed in black, while the King wore a handsome uniform. He as well as his mother speak English and German fluently, and conversed in these languages with the members of the American delegation. We were all deeply impressed with the modest and genial manners of the young ruler of the old nation that has played such an important role in the drama of the Old World and made it possible for Columbus to find the new one. We Americans must never forget what Spain has done for us, we must ever keep in mind the jewels of Isabella, the Catholic. After the reception we were invited to visit different apartments and look at the wonderful collection of tapestry. In the afternoon at 4 o'clock, Wednesday, April 29, all of the delegates and ladies in attendance were given a garden party by the royal family. The spacious garden behind the palace was at its best. The soft green of the well-kept lawns, the new headdress of the giants of the forest, the flowers in all colors, the many fountains in action and the throng of at least 5,000 people in their best attire, made a picture that time will never efface from the memories of those who were privileged to witness it. Six bands stationed in different parts of the park-like garden played alternately while the people strolled about leisurely in the full enjoyment of a lovely spring day, made memorable by the environments and the hospitality of the King that prompted the occasion. The King entered the garden in a carriage accompanied by his mother and the two infantas. After leaving the carriage the royal party made its way through the dense crowd, addressing a few words to those standing near by as they passed along the principal avenues of the garden.

A splendid buffet lunch, including champagne, was served at a long table, around which several hundred people could be seated and help themselves at the same time. This garden party was one of the most pleasing features of the Congress and I am sure that every one who was present will remember with gratitude the royal host who, by his dignified manner and charming hospitality, added so much to the success and pleasures of the Congress. Of the section entertainments I can only speak of the military section. The afternoon was devoted to the

visiting of government institutions, notably the Military Hospital and the Laboratory of the Army and Navy. These visits always ended with a most excellent lunch, including the native wines and champagne. The section dinner was given in one of the dining-rooms of the Inglaterra Hotel. The Minister of War and a number of military and naval officers of the highest rank were present. The dinner was one which it would be difficult to duplicate in America. The parting speeches were numerous, in many languages, and most of them eloquent. Contrary to what we were made to believe before we entered Spain, after ample experience we had to come to the conclusion that the Spanish kitchen is a most excellent one. The rooms in the hotels are large and the beds not only comfortable but luxurious. Receptions by the mayor of the city and the Minister of the Interior and an opera party completed the list of entertainments.

The Committee on Entertainments very wisely excluded from the program the national sport—bullfighting. It is needless to say, however, that most of the delegates, including their wives, secured admission tickets in time and were in their seats at 4 o'clock Sunday afternoon when the first bull made his attack on the poor blindfolded horses, who looked in vain for protection from their stupid riders. The bull in turn was teased, worried and tired out when the gaudily dressed bullfighter (butcher) entered the ring to put an end to the misery of the half dead brute. This brutal sport was repeated six times before the program was finished. The Madrid bullfight is a tame affair compared with that of the City of Mexico, and it is safe to say that no foreign "congressiste" will ever care to witness another one. The royal family neither attends nor encourages this sport. For years repeated efforts have been made to suppress it and its days are evidently numbered. It is a relic of former days and so far as brutality is concerned it is no worse than the cockfights and football games so well patronized in our own country.

Reflections.—It is much easier to criticize mistakes than to avoid them. The local committees of the Congress did much creditable, hard work. The medical profession of Madrid and Spain at large was anxious to make the Congress a great success. In many things the efforts succeeded, in others they fell short of expectations. The government officials from the King down to the employes of the lowest grade did their duty. The railroads and steamship companies offered sufficient inducements by reduction of rates to secure a large attendance. Looking backward, it is not difficult to ascertain where better arrangements could have been made. The system of registration was very defective. No reliable bureau of information. Only two persons were in charge of the mail; it required both patience and perseverance to call for letters. The "Bureau de logement" assumed a difficult task when it undertook to secure desirable accommodations for the visitors. Many bitter complaints were made by members who were assigned to quarters outside of the hotels. The hotel guests had no reason for well-grounded dissatisfaction. The general program did not give the desired information. The titles of the papers for the sections were thrown together without any reference to the time when the papers were to be presented in the respective sections. The *Diario Oficial*, under the editorship of Dr. Enrique Salcedo, contributed something toward the remedying of this defect, but failed in doing away entirely with the existing confusion. The *Suplemento Diario Oficial*, containing the names and local addresses of the members, made its appearance on the day the Congress adjourned. Hence there was no way by which we could ascertain the addresses of friends we were anxious to meet and visit. Nine numbers of the *Diario* were issued, the last number the day after the Congress adjourned. The foregoing are some of the shortcomings of the Arrangement and Program Committees which should be remembered, and, if possible, avoided by those who will be placed in charge of the management of the next Congress. On the whole, however, we fared much better than we had reason to anticipate. The merits of the Congress overshadow the demerits, the pleasures, the disappointments. We can say with the editor of the *Diario Oficial* (Numero 8): "Le lien n'est pas opportun pour parler des fruits du Congrès, ils sont consignés dans les *Actes* qui seront comme un livre d'or, dans le

vaste champ des sciences médicales, mais nous pouvons bien dire que le XIV^{ème} Congrès de Médecine, continue la glorieuse tradition des antérieurs et qu' il est l'honneur de notre Faculté."

Two evils threaten the future successes of the International Medical Congress. They are: 1. Too great laxity in the admission to membership. 2. Too large attendance. The elimination of the first evil will correct the second. The Congress should be strictly a delegated body. The appointment or selection of delegates should be restricted so that at no time the attendance would exceed 2,000. The selection of the delegates should be made by a committee of the National Medical Association of the countries seeking for representation, or in the absence of such by the governments. The doors of the Congress should be closed to laymen so far as membership is concerned. So far each Congress has had its full share of camp followers, who take advantage of reduced transportation rates, crowd the hotels, and never fail in taking in all the entertainments which are always given as a compliment to the doctors in attendance, as the present requirements for membership in the Congress are such that any one, professional and layman, who pays the stated subscription fee is admitted and is entitled to all the privileges accorded the delegates. There are few cities large enough to secure desirable accommodations for more than 2,000 to 3,000, hence the desirability of restricting the attendance. A change in this direction cannot be made too soon, and it is to be hoped that the authorities of the next Congress will consider this matter and formulate the regulations accordingly, inasmuch as the hotel accommodations of Lisbon are greatly inferior to those of Madrid and the other cities in which the Congress has met in the past.

The delegates returning from Madrid have much to be grateful for. We have seen Spain, her antiquities and works of art. We have seen her rugged mountains and fertile plains. We have seen the royal family, and have come in touch with her chivalrous, hospitable people. We have become familiar with her excellent charitable institutions, her schools and universities, and more than all this, we have established, I trust, a bond of permanent friendship between the Spanish and American medical profession.

In conclusion, I desire to extend my sincere thanks to Captain Juan Redondo, of the Spanish Navy, who was my constant companion from the time I arrived at Madrid until my departure, and through whose influence I received many courtesies and much valuable information, which, without his friendly intervention, would not have been obtainable.

MADRID, April 30, 1903.

Roof Garden for Consumptives.—Director Martin has recommended that a portion of the roof of the Philadelphia Hospital be converted into a roof garden where consumptives may sleep during the summer months in the open air. Not only will the roof serve as a sleeping place, but a portion will be set aside where work may be planned and done by the inmates. Flowers and shrubbery will be scattered on the roof and everything will be made as attractive for the afflicted patients as may be. It is believed that this is the first attempt to inaugurate this plan of open-air treatment on a large scale in the United States. Dr. Martin's plan will be watched with interest.

Preparatory Course for Nurses' Training School.—Beginning September 17, the Drexel Institute of Philadelphia will inaugurate a course of study and training for young women, which is designed to serve as a preparatory course for hospital training schools for nurses. The announcement says that the conviction among those who have given the matter special attention appears to be that this scientific knowledge could be more advantageously acquired if given independently of the professional work, and the general conclusion has been reached that if a preparatory course of training in the scientific branches, a knowledge of which is essential to a fully equipped nurse, should be provided, relief from the pressure upon the women in the first year of the training school can be obtained, while the standard for the education of nurses would be raised along the whole line. Instruction will be given in the following branches: Anatomy and physiology, medical chemistry, materia medica, domestic science and economics, English language, vocal expression, physical training. Among candidates for places in the various training schools of the city, preference will be given to those holding certificates of this institute. James McAlister, president of the Institute, and Dr. S. Weir Mitchell have been active in promulgating this course.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

June 6, 1903. [Vol. XL, No. 23.]

1. Development and Care of Children: Chairman's Address Before the Section on Diseases of Children. JOHN C. COOK.
2. The Diagnosis of Cutaneous Syphilis. ISADORE DYER.
3. An Interesting Case of Lupus Vulgaris. R. R. CAMPBELL.
4. The Study of Pediatrics: Is It Worth the Attention It Gets, and Does It Get the Attention It Deserves? C. P. WAHNER.
5. A Case of Probable Gummata of the Liver in a Child of Six. MAURICE OSTHEIMER.
6. Is the Realization of Reasonable Ideals in Dental Education Near at Hand? CHARLES C. CHITTENDEN.
7. The Abuses and Uses of Venesection in the Practice of Medicine. ROBERT REYBURN.
8. A Diagnostic Examination of 150 Cases of Leprosy. JONATHAN T. McDONALD.
9. The Chemistry of Cerebrospinal Fluids. TORALD SOLLMANN.
10. Clinical Observations in Stomach Surgery. A. J. OCHSNER.
11. Results in Radiotherapy. H. R. VARNEY.
12. Clamp Forceps for Removal of Nasopharyngeal Tumors. E. FLETCHER INGALLS.

1, 4.—See *American Medicine*, Vol. V, No. 20, p. 777.2, 3.—See *American Medicine*, Vol. V, No. 22, p. 864.5.—See *American Medicine*, Vol. V, No. 22, p. 861.

6.—**Ideals in Dental Education.**—C. C. Chittenden calls attention to the freedom of the schools in this country from domination by the medical profession. In Europe dentistry is treated as a mechanical art and tacked onto a background of medical didactics. Dental literature now demands high school graduation and four years of special training as the minimum standard. The fourth year is to be added to the curriculum during the present year. The schools should be relieved of the commercial handicap by union with properly endowed universities. Notwithstanding the raising of requirements there has been unprecedented prosperity. The writer deplors flagrant attempts on the part of schools in the N. A. D. F. to evade the rules. [H.M.]

7.—**Venesection.**—R. Reyburn points out that the class of cases benefited are chiefly those in which there is abnormal blood-pressure in the body which threatens the rupture of a cerebral bloodvessel or causes a stasis of blood in some vital organ. He specially considers its applicability in threatened apoplexy, in pneumonia and in uremia. [H.M.]

8.—**Leprosy.**—J. T. McDonald believes as the result of his experience that the microscope is the supreme agent in the final diagnosis of leprosy. No patient should be committed to a colony without this. Maculas, chiefly leukodermic spots, are found in 89% of all cases. The lepra nodule is found in 74% and is the chief distinguishing lesion of skin leprosy. Thinning or complete loss of eyebrows and lashes is present in 63%. Atrophic changes in hands and forearms with retraction and contraction of the fingers and enlarged ulnar nerve in 32% are leading features in nerve epilepsy. The plantar ulcer found in 26% is usually on the ball of the foot. Absorption of phalanges occurs in 16%, with occasional spontaneous amputation. Elephantiasis of hands and feet occurs in 16% and facial paralysis in 11%. The entire body should be tested for anesthetic areas. Several of the above symptoms can be found in some slight degree at least in every leprosy subject. [H.M.]

9.—**Chemistry of Cerebrospinal Fluids.**—T. Sollmann gives a table of his own findings and those of other investigators. The molecular concentration in three of his specimens was that of normal serum. There seems to be something in the fluid that protects the corpuscles against laking. The specific gravity is in all animals lower than that of serum on account of the small proteid content. The reaction is always slightly alkaline. Inorganic salts are in about the same amount as in serum and consist mainly of chlorid. Foreign salts can pass from the circulation into the cerebrospinal fluid, but the passage is slower than into other fluids. The reducing substance in the fluid gives all the tests of dextrose. The sugar disappears on standing. The proteid which it contains is globulin. The normal absence of albumin in a fluid containing globulin is apparently a unique phenomenon. The presence of albumin might be due to admixture of inflammatory exudate and have a diagnostic value. The proteid varies between wide limits, but $\frac{1}{3}$ of the analyses show less than 2%. Diastatic ferment may be

present, although in less amount than in lymph or serum. [H.M.]

10.—See *American Medicine*, Vol. V, No. 20, p. 774.11.—See *American Medicine*, Vol. V, No. 20, p. 782.

12.—See *American Medicine* report of Congress of American Physicians and Surgeons, Washington, D. C., May, 1903, Section on Laryngology.

Boston Medical and Surgical Journal.

June 4, 1903. [Vol. CXLVIII, No. 23.]

1. The Symptomatology and Diagnosis of Diseases of the Pancreas. REGINALD H. FITZ.
2. Small Contributions to the Surgery of the Intestinal Tract. JOH. VON MIKULICZ.
3. The Surgery of the Simple Diseases of the Stomach. B. G. A. MOYNIHAN.

1.—See *American Medicine*, Vol. V, No. 21, p. 810.2.—See *American Medicine*, Vol. V, No. 23, p. 895.

3.—See *American Medicine* report of Sixth Triennial Congress, Washington, May, 1903, American Surgical Association.

Medical Record.

June 6, 1903. [Vol. 63, No. 23.]

1. Perforating Gastric and Duodenal Ulcers: Unilateral Exclusion of Duodenum for Perforating Ulcers of Its Posterior Wall. ALBERT A. BERG.
2. Results of Preventive Medicine in Providence, R. I., 1885-1902. FREDERICK S. CRUM.
3. Fatal Gastric Hemorrhage, with Autopsy. MARSHALL LANGTON PRICE.
4. The Local Treatment of Acute and Chronic Gonorrhoea. R. O. KEVIN.
5. Preliminary Report of a Successful Operation for the Radical Cure of Complete Prolapse of the Rectum of Sixteen Years' Duration in a Case of Primary Dementia. JOHN RUDOLPH KNAPP.
6. A Hint in Urinary Analysis for General Practitioners. LOUIS FAUGERES BISHOP.

1.—**Perforating Gastric and Duodenal Ulcers.**—A. A. Berg says the results of perforation depend on two factors: (a) rapidity with which the ulcerative process extends through the visceral wall; and (b) the site of the ulcer. A slow ulcerative process permits adhesions to form in advance. If ulceration is through the anterior wall of the stomach, extravasation takes place into the general peritoneal cavity with a resulting general peritonitis; if on the lesser curvature, or on the posterior gastric wall, there follows extravasation into the lesser peritoneal cavity, and no obliteration of liver-dulness, unless gas escape through foramen of Winslow, which is unusual; if on the posterior duodenal wall the extravasation will be most likely into the cellular tissue posterior to the viscus, the ascending colon, and the perinephritic space. In reference to symptomatology, the writer says perforation may be preceded by no symptoms, and it may not be attended by collapse, for the latter is dependent entirely upon extravasation, and not upon ulceration *per se*. The upper half of the abdominal wall is rigid and does not enter into the respiratory movement; at the time of perforation there is tearing pain in the gastric region; obliteration of liver-dulness depends on the site of perforation. Several hours after perforation the symptoms of septic peritonitis mask all the other symptoms. Abscess formation will result if extravasation takes place into the lesser peritoneal cavity or into retrovesical cellular tissue. The writer reports a series of four cases operated upon, two of the patients recovering. He says surgery has accomplished much in perforating ulcers, and promises more with earlier diagnoses and improved methods. Bolton Carter collected 59 published cases of perforating duodenal ulcers. Of these 27 died without operation, the lesion being found postmortem; of 32 subjected to operation, 11 recovered (34%); Lenander states that the statistics so far published (1898) show that one-fourth to one-third of the perforating ulcers of the stomach and duodenum are saved by operation, and that prognosis depends on the length of time that elapses before operation is undertaken, and on the extent and character of the peritonitis. [A.B.C.]

2.—**Preventive Medicine in Providence.**—The statistics from 1885 to 1902, presented by F. S. Crum, appear as evidence that improved methods of diagnosis and medical treatment have had more to do with improved mortality than sanitary science. In typhoid fever the ratio of deaths to cases has declined from 35.4% to 23.8%, while in the middle period of this

decline the number of cases per 10,000 of population increased. In diphtheria the average of deaths has decreased from 32.9% to 12%, while the number of cases has increased absolutely and relatively. The increase, however, may be partly accounted for by greater certainty of diagnosis and the greater vigilance of the health officials. In scarlet fever the decrease has been from 15.7% to 2.9%, while the number of cases during the middle period of the decline was double that in the first period. The ratio of deaths to cases has been uniformly highest for typhoid fever and lowest for scarlet fever. [H.M.]

3.—Fatal Gastric Hemorrhage.—M. L. Price reports the case. A man of 50 entered the hospital, and within a few minutes, in spite of stimulants and saline infusion, died, having had the cardinal symptoms of internal hemorrhage. Necropsy showed abundant blood in the stomach and intestines. The report, with reference to the stomach, is as follows: It is markedly distended, and on section fluid and partly clotted blood exudes to the amount of about two gallons. Near the cardiac end on the posterior surface is a large sloughing mass about 8 cm. long, 5 cm. wide. The entire mucosa in the neighborhood has sloughed away. Numerous foul-smelling granulations arise. The ulcer has perforated the stomach and is firmly adherent to the left lobe of the liver. This adhesion is firm and can be separated only by considerable force. On the outer surface of the stomach where adherent to the liver there is present an ulcerated area about 4 cm. by 3 cm. The base of the ulcer contains a mass of cauliflower granulations. The ulcer begins about 1 cm. from the esophageal opening, but does not involve the esophagus. Microscopic examination of the ulcerated tissue showed it to be due to colloid cancer. [A.B.C.]

4.—Treatment of Acute and Chronic Gonorrhea with Argyrol.—R. O. Kevin has during the past year had experience with some 2,500 cases of acute and chronic gonorrhea in the dispensary service of the Jefferson Hospital of Philadelphia. In the treatment of these he has used argyrol to the exclusion of the other silver salts. His several methods of using the drug, depending on the time, condition, complications, etc., are given in full. He closes with the conclusion that argyrol for both acute and chronic gonorrheal infection is the best and safest of the silver preparations. [A.B.C.]

5.—Radical Cure of Complete Prolapse of the Rectum.—J. R. Knapp reports the case. A man of 35, suffering from primary dementia and confined in the asylum for 16 years, had most of this time been confined to bed from a complete prolapse of the rectum. The prolapse could until recently be reduced by manipulation, but it recurred when the patient was in the erect posture, or had diarrhea, which was frequent. Since the bowel could of late not be reduced operation was deemed justified. Laparotomy was performed by an incision through the left rectus. The sigmoid was grasped, traction made, and the prolapse reduced without serious difficulty. The bowel was drawn fairly tense and anchored by several sutures to the abdominal wall near the lower angle of the wound. After-treatment consisted in liquid diet, elevation of the foot of the bed, binding up the bowels for several days, then evacuation by oft repeated small doses of salines, and rectal injections of oil. Within 24 days after the operation the patient was partaking of usual house diet, and somewhat later was going freely about the wards, having natural movements of the bowel without any sign of prolapse. Recovery seems complete and the general condition of the patient is much improved. [A.B.C.]

6.—Urinary Analysis for General Practitioners.—L. F. Bishop says in the physician's office laboratory two of the petty annoyances in testing for albumin are dirty test-tubes and specimens that need filtration. He says: Obtain a clean test-tube and a clear specimen; take an ordinary cotton tampon on a string, such as is used in gynecologic work, push it to the bottom of a test-tube with a stick or glass rod and pack it in firmly. Then pour the urine into the test-tube and pull the tampon out very slowly. This, on account of the atmospheric pressure, causes the urine to pass through the tampon and remain in the tube. The tampon carries out with it any particles that can be removed by filtration and at the same time cleans the inside of the test-tube. If there are several specimens to be filtered, the tampon can be rinsed under the faucet and used over again. The process can be repeated quickly two

or three times if the first filtration is not satisfactory. In detecting very small traces of albumin, a perfectly clean test-tube is of great importance. [A.B.C.]

New York Medical Journal.

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1. Clinical Observations on Backache. ROBERT W. LOVETT.
2. Cocain Herniotomy. ALEXANDER SYER.
3. The Essentials for Aseptic Labor. A. ERNEST GALLANT.
4. The Eye in Its Relation to General Disease. NATHAN D. McDOWELL.
5. A Supposed Sarcoma of the Kidney Cured by X-ray Treatment. CHARLES H. RICHMOND.
6. Notes on Two Cases of Urogenital Tuberculosis. CHARLES GREENE CUMSTON.
7. Heredity and Tuberculosis. MAURICE PACKARD and LESTER LAURENS ROOS.
8. Chronic Pneumonia. E. PALIER.

1.—Backache.—R. W. Lovett considers this condition from the standpoint of an orthopedic surgeon and divides the cases into two groups: (1) Those due to causes existing in the spine itself, and (2) those due to causes existing outside of the spine, as in the feet. The causes existing in the spine itself are either mechanical, or static, to be classed as faulty attitude; or occurring as the result of injury or inflammation. The pain which is the result of faulty spinal attitude is generally localized at one or more points in the spine; it is apt to be very severe and to be aggravated by exertion. In cases of long standing the diagnosis from such conditions as Pott's disease and arthritis deformans of the spine may be very difficult; an injury may be, and often is, the starting point of the affection. Treatment consists in improvement of the general condition, and in the severer cases, at first rest on the back most of the day is imperative; and when the patients are erect, some form of light elastic brace, to hold the spine extended, is advisable for a time. In cases of slight lateral deviation of the whole spine, due oftenest to a short leg, pain in the back or to one side of it is not uncommon. The correction of the short leg, by increasing the thickness of the sole, will, in many cases, do away with the backache. Sprains of the back are best treated by recumbency or at least by restricted use, the spinal movements being limited by a light brace. Gymnastics, massage and douching tend to restore the circulation. A plaster jacket should be used for a "chronic sprain" of the spine. The cases in which some mechanical difficulty in the foot is the cause of persistent and obscure backache are those of real flatfoot, pronated foot and contracted foot. The first two conditions should be treated by flatfoot plates. The third condition is characterized by a shortness of the muscles at the back of the calf. The pain is generally in the small of the back, and is aggravated by standing or stooping forward, although it also results from walking. It shoots down into the pelvis and thighs in some cases. It is essential in these cases to support the arch of the foot and to stretch the calf muscles. The contraction usually yields readily and a few stretchings give relief to the symptoms in most cases. [C.A.O.]

2.—Cocain Herniotomy.—Alexander Syer considers the various steps in the radical cure of inguinal hernia by substituting cocain anesthesia for general narcosis. Fifteen such operations have been performed by the author with good results. Twelve of these cases were simple inguinal hernia, one was congenital, and two were irreducible epiploceles, in which it became necessary, after freeing the attachment between the omentum and the sac, to tie off and remove, in one case 6 ounces, and in the other 8 ounces of omentum. One-half of 1% solution of cocain was used for the skin. The nerve-trunks were picked up in most cases and a few minims of one-quarter of 1% cocain solution injected into the sheath. In no case had $\frac{1}{2}$ grain of cocain been exceeded in the whole operation. The author uses the Bassini method in all respects excepting the treatment of the sac, in this he uses the Macewen method. [C.A.O.]

3.—The Essentials for Aseptic Labor.—A. E. Gallant says the absolute essentials for aseptic labor are: (a) A good-sized handbag, to be used for this purpose and no other; (b) stocked with the necessary drugs; (c) steam-sterilized gauze, gown, and cotton ball sponges; (d) hand brushes, silk-wormgut, rubber gloves, and catheter, ready to be boiled in plain water; and (e) a set of metallic instruments to be boiled

in soda solution when needed. The hand cleaning can best be accomplished (without antiseptics) by the liberal application of the tincture of green soap, rubbed thoroughly into the dry hands and arms (two or three coats); then, when they are thoroughly coated and dry, scrubbing with a stiff brush, in running water, until all traces of soap have been scrubbed away. Before applying forceps or making a vaginal examination the parts must be cleansed as thoroughly as the hands. [C.A.O.]

4.—The Eye and General Disease.—N. D. McDowell discusses briefly the diseases of the eye which occur during the progress of the general diseases. Paralysis of the ocular muscles and those of the lids are not uncommon in diabetes mellitus. Keratitis and iritis are also met with. Cataract occurs in about 15% of all cases of diabetes. The anemias are a fruitful source of asthenopia, and hemorrhages in the retina as a result of the anemia present in many general diseases are not uncommonly met with. One of the most frequent eye complications of the disorders of the digestive tract in children is phlyctenular inflammation of the conjunctiva and cornea. Constipation and consequent straining at stool has led to hemorrhages in the conjunctiva and retina, and, according to Berger, has brought on an attack of acute glaucoma. Gonorrhoeal ophthalmia with a destructive keratitis resulting is a frequent complication of gonorrhoea, and iritis often accompanies gonorrhoeal rheumatism and gonorrhoeal inflammations of the joints. Magnus alleges that about 2% of blindness is due to syphilis. In both the congenital and acquired forms of syphilis the uveal tract is usually the part attacked. About 50% of our cases of iritis are due to this disease, and usually the attack occurs during the secondary stage. Interstitial keratitis is the most common eye complication of congenital syphilis. Edema of the lids, conjunctivitis, keratitis, and paralysis of the ocular muscles occur in parotiditis, and like the testicle, the lacrimal gland may be the seat of inflammation. Before the introduction of vaccination it was asserted in Germany that 35% of all cases of blindness was due to variola; now, according to Fuchs, only about 2% may be assigned to this cause. The ocular lesion most frequently met with in diphtheria is the partial or rarely complete paralysis of accommodation. After typhoid and other exhausting fevers there is sometimes marked weakness of accommodation. [C.A.O.]

5.—Röntgen Ray Treatment of Sarcoma of the Kidney.—C. H. Richmond reports a case of supposed sarcoma of the left kidney in a woman of 40 apparently cured by Röntgen ray treatment. She received daily treatments of 15 minutes each for 19 consecutive days. At the end of this time the temperature was nearly normal, night sweats had lessened, the tumor had apparently ceased to grow and seemed softer, her appetite was good, she slept well, and the pulse had improved. She was then removed to a hospital and treatment continued for nine weeks, when the growth had entirely disappeared, so far as could be determined, and the patient had apparently recovered perfectly. [C.A.O.]

6.—Urogenital Tuberculosis.—Two cases are reported by C. G. Cumston to demonstrate the pathogenesis of ascending and descending urogenital tuberculosis. The first case is that of a man of 30, who had been a sufferer from pulmonary tuberculosis for years. The seminal gland became involved, but the process appeared to remain stationary there for some time and then it extended slowly up the spermatic cord. The seminal vesicle then became involved. The next organ attacked seemed to be the prostate, and from this point it would appear that the infection traveled toward the ureter directly by the lymphatic system, and more especially concentrated its attack upon the right kidney by direct extension of the process. At the autopsy the right kidney was found enlarged, with an adherent capsule and important destructive ulcerative changes. The ulceration found in the bladder appeared to have occurred after the kidney became involved. The second case is that of a woman of 27, who gave the history and presented the signs of a cured tuberculous process in both pulmonary apices. A large bunch of tuberculous glands in the axilla were removed by extensive dissection, and an uninterrupted recovery followed. Two years and a half later the urinary apparatus became involved. She lost considerable blood from the bladder, and complained of

pain both before and after passing urine, and a constant desire to urinate. Palpation of the left kidney showed that it was involved. At this time a gland in the axilla that had not been removed was found to be involved. Nephrectomy was done and the typical macroscopic lesions of advanced chronic tuberculous nephritis found. Twelve days later the patient died. [C.A.O.]

7.—Hereditry and Tuberculosis.—Maurice Packard and L. L. Roos have reviewed the literature of this subject thoroughly and from the cases reported by different authors and experimental researches they conclude that tuberculosis can be hereditarily transmitted both by way of the placenta and the spermatic fluid. [C.A.O.]

8.—Chronic Pneumonia.—E. Palier reports such a case in a girl of 19. When first seen she had a temperature of 103° F., pulse 130, headache and lassitude with some sore throat. Scattered rales were heard in the lungs. The case was then considered one of grip. One month later the temperature was about normal, but the pulse was 130. On examining the lungs there was found dulness and bronchial breathing on the left side, from under the scapula to the base of the lung and as far anteriorly under the axilla and under the nipple as the lung tissue extends. Two months later there was scarcely any change in her condition. Sodium benzoate with guaiacol carbonate was prescribed for the lung trouble, and nux vomica and iron was given as a tonic. Fresh air but not much exercise was advised. Recovery gradually followed. Her sickness lasted about five months. Palier believes that this affection is frequently mistaken by physicians for tuberculosis. [C.A.O.]

Medical News.

June 6, 1903. [Vol. 82, No. 23.]

1. The Surgery of the Simple Diseases of the Stomach. B. G. A. MOYNIHAN.
2. Professional Discretion: The Medical Secret. (Concluded.) PRINCE A. MORROW.
3. A Case of Bacteriuria Resembling Weil's Disease. G. REESE SATTERLEE.
4. Pelvic Suppuration in the Female. ABRAM BROTHERS.

1.—See *American Medicine* report of American Medical Association, New Orleans, May, 1903, Section on Surgery.

2.—See *American Medicine*, Vol. V, No. 23, p. 898.

3.—**Bacteriuria Resembling Weil's Disease.**—G. R. Satterlee presents a case in which the original picture was that of acute febrile jaundice. There was a severe general infection which must have caused degenerative changes in the liver as well as the kidney cells and which showed itself in prolonged weakness and general muscular pains during convalescence. Experiments with a bacillus isolated from the urine showed it to be toxic to guineapigs and in a lesser degree to rabbits. Acute hepatitis was marked in all cases that came to autopsy. Acute nephritis was also found. In the animal which survived the inoculation the urine showed bacteriuria with albumin and casts. [H.M.]

4.—**Pelvic Suppuration in the Female.**—A. Brothers divides pelvic suppuration into adnexal and connective tissue. Pelvic inflammation precedes suppuration, and only in a small proportion of cases produces pus. In the course of 18 years, experience he has seen hundreds of cases of pelvic exudates disappear without operation. He has seen only 5 cases of pelvic suppuration under 20 years of age, and 5 beyond 40 years. Of 91 cases studied on the operating table, there were of gonorrhoeal origin alone 33; the same associated with abortion, 4; puerperal origin, 25; traumatic, 25; appendicular, 3; tuberculous, 1. Twelve cases of pyosalpinx were due to manipulation in office practice, such as violent examination of diseased women, use of sound for diagnostic purposes, and use of cervical dilators to cure sterility. Although small pus collections may undergo spontaneous absorption, lose their virulence and remain innocuous, or may occasionally discharge themselves into the uterine cavity, still there is only one legitimate method of treatment for pelvic suppuration, and that is surgical. As a rule Brothers prefers the abdominal route for pelvic suppuration, though a pelvic abscess bulging through the vaginal vault, no matter what its origin, is clearly a case for vaginal section and drainage. As the result of his experience he lays down these rules: 1. To prevent suppuration, examina-

tions in patients suffering from any variety of pelvic inflammation should be made gently and infrequently. 2. The use of sounds and cervical dilators, under ordinary circumstances, should be restricted to the operating-room where the parts can be thoroughly prepared and the operator, nurse, and instruments thoroughly asepticized. 3. After a gonorrhoeal pus-tube has been removed, the woman must be warned of the possibility of the invasion of the opposite side, if she takes the chance of reinfection from the diseased male. 4. Abscesses, irrespective of their origin, when pointing above or below, should be treated by simple incision and drainage. 5. Sacculated abscesses presenting the characteristics of intraperitoneal tumors should be treated by laparotomy, without unnecessary delay. [w.k.]

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Papers of importance appearing in this journal hereafter will be noticed under the appropriate departmental heads.

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

EDITORIAL COMMENT

The Etiology and Pathology of Beriberi.—The literature of this obscure affection is so voluminous and the multiplicity of supposed etiologic factors so great that new communications anent the subject are apt to be regarded with suspicion. Very suggestive, however, is the recent report of the Institute for Medical Research of the Federated Malay States. The report is an exceedingly lucid summary, arranged in terse numbered paragraphs, of a geographic study of beriberi extending over nearly a year, and includes an enormous number of tabulated statistics. An exceptional opportunity for studying the disease was afforded by the gaol at Kwala Lumpur, which contains from 400 to 500 prisoners, and furnishes 100 cases of beriberi yearly. Certain blocks in the gaol were isolated in order to determine if the disease was brought by recently entered convicts or arose within the gaol. The result of eleven months' observation has convinced Director Wright that beriberi is independent of diet considered as diet; that the gaol itself is a focus in which the virus of beriberi is generated; and that beriberi is an infectious disease. A concise statement of Wright's views is best given in his own words: "The theory of the causation of beriberi that fits the above facts and all others observed in British Malaya is that beriberi is due to a specific organism which gains entrance to the body via the mouth; that it develops and produces a toxin chiefly in the pyloric end of the stomach and duodenum, and that the toxin being absorbed acts atrophically on the peripheral terminations of the afferent and efferent neurons. Further, that the specific organism escapes in the feces and lodges in confined places through accident or careless personal habits of those affected by this disorder, and that in the presence of congenial meteorologic, climatic and artificial conditions of close association from overcrowding, the organism becomes virulent and gaining entrance to the healthy body in food, etc., contaminated by it, gives rise to an attack of the disease." Wright classifies the disease as acute pernicious beriberi, which is always fatal; acute beriberi, which lasts from three to six weeks and leaves the patient paralyzed, and beriberic residual paralysis, which persists after the specific virus has ceased to act. The entire report, which is preliminary in nature, bears evidence of being a genuine research instead of an attempt to prove a preconceived theory. As such it is a valuable contribution to the recent literature of a subject about which much is written and comparatively little known.

REVIEW OF LITERATURE

Cancer and Heredity.—The interesting problem of hereditary transmission of cancer has been studied by W. N. Geinatz.¹ This question has more than a merely theoretical importance in view of the prevailing tendency among laity and certain physicians to admit hereditary cancer. As a result we not infrequently see persons who have had the misfortune to lose a near relative from carcinoma become mentally unbalanced by the fear of imminent danger to themselves. The number of such cancerous neurasthenics appears to be quite large, and while some of them really succumb to the dreaded disease the majority make themselves and their friends miserable and spend their time in waiting for the sword of Damocles to fall. This state of affairs makes a study of the question very desirable and our author from his own investigations into literature asserts that there is no evidence in support of the hereditary theory, at least in a great majority of cases. Exceptions may be disregarded in formulating a general rule. The percentage of cancer among individuals having no cancerous antecedents is even greater than among descendants of cancerous individuals. Hence the fears of such descendants are entirely unreasonable. Cancer may be acquired by intercourse with its victim, that is, a contagiousness cannot altogether be denied, but no disposition to the disease is inherited. The sooner we annihilate the hereditary belief the better, since new lines and fresh encouragement will then be offered to prophylaxis. Whatever the cause of cancer, whether microorganisms or chronic irritation or unsuitable food, an intelligent struggle with the disease must gain additional zest from the conviction that it is not a hereditary affection. [L.J.]

Diverticulum of the Esophagus.—J. McFarland and J. M. Swan² report a case of diverticulum of the esophagus, of the pulsion variety. The patient had been under observation for about six years, but the diverticulum was not diagnosed until at the postmortem. It was situated on a level with the cricoid cartilage, and when in the relaxed condition measured 5 cm. by 3 cm. (2 in. by 1 in.). The points of greatest interest in the case are (1) the existence of a diverticulum of the esophagus, which gave rise to recurrent attacks characterized by the symptoms of an acute infection, in the intervals of which, except for regurgitation of food, the patient was fairly comfortable; (2) the existence of all the evidences of dilation of the stomach during life, with the finding at autopsy of a small and contracted organ. [A.G.E.]

Prurigo Lymphatica.—Buschke³ reports the case histories of three patients, all of whom complained with violent itching of the skin; had enlarged lymph-glands, pruriginous and urticarial eruption over the extensor surfaces of the skin, many pigmented scars, enlarged spleen, slight albuminuria, small petechial hemorrhages in different parts of the body, no anemia, leukocytosis or lymphocytosis. The author is inclined to consider these cases related to Hebra's prurigo, from which it differs by the greater diffuseness of the eruptions, although it limits itself to the extensor surface, and the onset occurring late in life; but neither he nor other observers have been able with positiveness to exclude pseudoleukemia and tuberculosis of lymph-glands. The prognosis of the condition is unfavorable as regards recovery, the best which has been attained thus far being temporary improvement. [E.L.]

Action of Morphin on Gastric Secretion.—H. Holsti's⁴ method of investigating this question was to administer $\frac{1}{2}$ to $\frac{1}{4}$ grain of morphin with a test-meal, then obtain the gastric contents at various intervals of time, and determine the amount of free HCl. The results were compared with the normal amount, of HCl previously determined for each person experimented upon. The first effect of the morphin was to diminish the gastric secretion, the degree of diminution varying greatly. In most cases this primary decrease was quickly followed by a variable increase in secretion. In some cases morphin was administered without food and on an empty stomach, the results showing a stimulation of gastric secretion. Continuous

¹ Russki Vrach, March 1 and 8, 1903.

² Medicine, May, 1903.

³ Deutsche medicinische Wochenschrift, November 20, 1902.

⁴ Zeitsch. für klin. Med., Bd. xlix, p. 1.

use of morphin was found to diminish the acidity of the gastric contents, and also to disturb gastric motility. [B.K.]

Seventy-one Attacks of Acute Psychic Disturbance in Alcoholics (50 Individuals).—Feldman's¹ paper is a statistical report of 71 attacks of delirium tremens during acute alcoholism, observed in the insane department of the municipal hospital at Stuttgart. He has found but few complications, and notes only one death. He states that delirium tremens patients should be treated in hospitals instead of insane asylums, inasmuch as the disease is usually of short duration, and the treatment in hospitals promises to be more appropriate. [E.L.]

GENERAL SURGERY

MARTIN B. TINKER

A. B. CRAIG

C. A. ORR

EDITORIAL COMMENT

Popular Confidence in Surgery Increasing.—As before announced in the columns of this journal we have no sympathy with the faddists who claim that intractable neurasthenia, hysteria, confirmed gastric irritability and dyspepsia will soon be recognized as affections for surgical treatment. Popular confidence in the efficacy of surgery within its proper limits is, however, quite another matter. It is not many years since every patient was wont to approach the operating table only as a last means of saving life, and only then when death was imminent. The modern introduction of comparatively safe anesthesia; the more recent introduction of methods having to do with asepsis and antisepsis; a vast array of lives saved, and much suffering relieved, almost without pain, by surgical means, have had a wonderfully transforming effect upon the popular mind. That Sir Frederick Treves alone can report many more than 1,000 *interval* operations for chronic appendicitis; that Kocher can report *thousands* of operations for the extirpation of goiter, many of which would doubtless never have proved fatal; that many other surgeons can report operations by hundreds for gallstones, in many instances of which the patients had not suffered from nerve-racking gallstone colic—all serve as a sufficient commentary upon the change in the popular mind with reference to the dangers of surgical procedure. When the late President McKinley died in spite of able surgical treatment those were not wanting, even in the profession, who gloomily predicted that in the eyes of the public surgery would suffer as a consequence. If the popular mind was at all influenced by this unfortunate termination, confidence was more than restored by the more brilliant results in a comparatively simple operation upon King Edward. Recently a prominent New York financier suspended all business operations, called a surgeon and with perfect confidence in the result asked to have his appendix removed. The case was notable not because of the request but because of the prominence of the individual. Such requests are by no means curiosities to those connected with hospital practice. The equanimity and almost absolute trust with which patients often submit to the advice of the surgeon is remarkable. In fact, among women there is what might almost be called a condition of "over confidence," in that they frequently seek operative treatment for conditions, fancied or real, which surgery cannot remedy. Summing the matter up, it is plainly evident that popular confidence in the efficacy of surgery and in the surgeon has greatly increased within the past few years; that persons afflicted with probable surgical maladies are coming more and more to be guided entirely by the judgment of the surgeon; that these facts have among others this advantage, that malignant and other diseases in which time is an important factor will meet with more prompt and efficacious treatment. Let the conduct of surgeons, however, be such that this increasing confidence shall be warranted—shall increase, not diminish.

¹ Deutsche medicinische Wochenschrift, December 4, 1902.

REVIEW OF LITERATURE

Traumatic Cyst of the Pancreas, with Recovery; Traumatic Diabetes.—K. Pichler¹ reports the case of a cyst of the pancreas in a man of 37. He based his diagnosis upon the history of a violent blunt injury to the upper part of abdomen, followed by collapse; the development within a few weeks of a large resistant dull mass between stomach and transverse colon; and the physical appearance of fluid withdrawn from the mass by puncture. At the operation the cyst wall was sutured to abdominal wall and punctured. It contained 10 pints of a dark-red fluid. The cyst cavity was packed with iodoform gauze. During his convalescence the patient developed glycosuria, which lasted fully a month, and was most likely due to inflammatory irritations of other parts of the pancreas. Convalescence was protracted, but recovery was ultimately complete. [E.L.]

Angioneurotic Erythema and Its Surgical Treatment by Neurectomy.—Three cases of this somewhat rare disease are detailed by J. C. Bloodgood.² Case I is summarized as follows: Angioneurotic edema of both cheeks, secondary to drainage of the antrum cavities, relieved by neurectomy of the infra-orbital nerves. A second area, on the left side of the abdomen, relieved by the division of the intercostal nerves. A third area, in the lower abdominal zone, still under observation. Case II, angioneurotic edema of the mastoid. Case III, angioneurotic edema of the elbow-joint has been reported previously. In the first case the areas of erythema differed from the usual cases of angioneurotic edema, first described by Quincke, in the persistence of the vasomotor dilation. The case is considered remarkable in its multiple areas and in the persistency of the erythema. It is of interest surgically because of the thus far permanent relief after neurectomy. [A.G.E.]

A Case of Tumor of the Prostate.—G. Kapsammer³ reports the case of a man of 40 suffering from sarcoma of the prostate, whose first symptom was complete urinary retention four weeks before digital and systoscopic examination revealed any change in the size of the gland; as first symptom of the tumor this retention is, therefore, very curious. During the life of the patient many pieces of the tumor were discharged by urethra. The tumor was found to be a round-cell sarcoma, with islands of hyalin cartilage. [E.L.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

EDITORIAL COMMENT

The Dangers of the Curet.—The apparent simplicity of the operation of curetage makes it often dangerously attractive to the tyro in gynecologic surgery. It is hard for him to realize that this procedure is one of the most important in the treatment of pelvic disease, that there are certain indications and also positive contraindications as to its performance. To be able to say whether curetage is indicated is to be able to run the entire gamut of pelvic diagnosis, to estimate uterine mobility, to ascertain the presence or absence of tubal disease, and to handle instruments with precision and delicacy. The number of reported accidents and the far greater number of unreported ones from the curet, plainly indicate that its use is fraught with danger to the patient. In the presence of pelvic inflammation or puerperal infection without the retention of secundines, its use may render acute a chronic inflammatory process, or open avenues for reinfection in a quiescent or subsiding infection. Opie mixed his paint "with brains" and brains are required in using the curet. The use of the instrument is therapeutic, to remove diseased endometrium; and diagnostic, to determine after thorough dilation of the uterus the presence of intrauterine growths, or in cases of supposed suspected malignancy of the body of the uterus to remove scrapings of tissue for

¹ Wiener klinische Wochenschrift, December 25, 1902.

² Johns Hopkins Hospital Bulletin, May, 1903.

³ Wiener klinische Wochenschrift, January 29, 1903.

examination. In cases of puerperal infection following labor, it is better to use the finger to explore the interior of the uterus and remove fragments of retained tissue; and after the organ has once been thoroughly emptied, the physician should refrain from meddlesome intra-uterine manipulation. We firmly believe that the unwise use of the curet increases the morbidity and the mortality in puerperal sepsis.

REVIEW OF LITERATURE

Heredity in Syphilis.—R. Matzenauer¹ treats in the first part of his article of hereditary syphilis as acquired from the mother. The portals of infection may be a syphilitic ovum, or through the placental circulation. The fetus may be infected at any stage of gestation as late as the eighth month, but the earlier this occurs the graver the result for the child. Infection before the fifth month usually terminates in abortion, premature labor, death of child, etc., while those infected late may even be apparently healthy at birth. He denies that infection directly through the father has ever been demonstrated, and after opposing the arguments for and against such a possibility, comes to the conclusion that no exception to Colles' law has ever been reported. All the cases for which such an exception is claimed rest upon easily demonstrated errors. Therefore, every mother of a congenitally syphilitic child is without exception immune, because she already has syphilis, if not in a demonstrable, at least in a latent form. There being, therefore, no congenital syphilis from nonluetic mothers, it follows that every such mother, although she may present no symptoms at all, must be given antisiphilitic treatment; she may nurse her child without fear of infection. Syphilitic parents may bring about infection of a previously healthy child. A syphilitic man should, to prevent his wife's infection, undergo repeated courses of treatment during several years. [E.L.]

Vulvovaginitis in Children.—W. J. Dukelsky² distinguishes two kinds of vulvovaginitis in childhood—the infectious and the noninfectious. The infectious variety is in 80% of all cases produced by gonococci, while diplococci and other as yet unknown bacteria are responsible for the remaining 20%. There are certain characteristic features in the symptoms and course of these types. Thus the gonorrheal variety is invariably chronic though beginning acutely; it is furthermore apt to be complicated with Bartholinitis, which does not occur in the other varieties. The form of vulvovaginitis due to diplococci and the unspecified bacteria is characterized by an acute course and rapid recovery. Finally, the noninfectious form is always catarrhal and chronic. The disease is, according to the author, most frequently given to the children by their mothers, and it seems that the little ones are susceptible irrespectively of their general health. Infection may even take place during labor. Whenever the transmission is direct, as in sexual abuse, the resulting disease is usually very severe and apt to present serious complications. [L.J.]

Certain Forms of Menstrual Suffering and the Action of Potassium Permanganate Therein.—W. Stephenson³ describes conditions in which there is a disturbance of the balance normally maintained between the venous and arterial systems. In some venous distention may show itself in the legs which before a period become full and heavy, the veins standing out, occasionally becoming varicose. In others there is entire suppression of the flow, or the latter is doubled or it may come in black stringy clots. Headaches occurring once a week or oftener sometimes have been due in the beginning to vascular changes associated with the mensal cycle. The writer uses potassium permanganate in 2-grain doses three times daily in such conditions for both diagnosis and treatment. This restores function, regulates the periodicity, checks the flow when excessive, and affords relief to pain. It is necessary in some cases to administer the drug continuously for six months. [H.M.]

¹ Wiener klinische Wochenschrift, February 12, 1903.

² Russki Vrach, April 12 and 19, 1903.

³ Scottish Medical and Surgical Journal, January and February, 1903.

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

REVIEW OF LITERATURE

Serotherapeutic Treatment of Basedow's Disease.—O. Lanz¹ reports four other cases of exophthalmic goiter in which the milk of goats from which the thyroid gland had been removed was used with considerable advantage and improvement. He acts upon the theory that exophthalmic goiter being due to a hypersecretion and absorption of thyroid juice the disease should be materially improved if an excess of poison neutralized by this secretion is given the Basedow patient. He therefore produces cachexia strumipriva in goats and feeds their milk to patients with exophthalmic goiter. [E.L.]

Voluntary Respiratory Ventilation in Convalescents from Pulmonary Disease.—Tissier (Pneumotherapy: Cohen's System of Physiologic Therapeutics, Vol. x) contends that there is always an indication to ventilate the lungs, to stimulate their circulation, and to strengthen their resistance, whenever the latter has been impaired by any cause, such as a sedentary mode of life, or certain diseases of the lungs. During convalescence from bronchopulmonary affections, the need of increasing the amplitude of the respiration by inducing a more vigorous action of the respiratory muscles is imperative. For when these muscles have been maintained in a state of relative inactivity by an affection that causes shortened respiration, they tend to fall into a state of atrophy, in the same way as do the muscles in the vicinity of a diseased joint. The patient, at first compelled by his disease to restrain the respiratory movements, sometimes keeps up this habit of lessened functional activity after every physical obstruction to the expansion of the lungs has disappeared. Convalescence from pneumonia might often be materially shortened if the patient could be made to practise deep respiration from the beginning, thus inducing in the pulmonary vesicles the activity necessary for their nutrition. At first every organ the seat of an inflammatory disease is functionally at rest; in fact, it is to a certain degree in a condition of paresis, of inactivity, which diminishes its functional capacity, apart from any structural condition capable of inhibiting its activity. This functional inactivity is always observed in the respiratory organs; but, in addition, the disease, whatever its nature, almost always leaves behind some anatomic traces that can be made to disappear only by exercise. The lung invaded by pneumonia must resume the full measure of its normal function as early as possible, in order that the nutrition of the vesicles may recover its previous activity, which is the best preventive of chronic pneumonia and the best protection against the tubercle bacillus. In pleurisy, prompt return to deep and vigorous respiratory movements is the only means of preventing the formation of adhesions that threaten to bind down the lung. It also effectively prevents the thoracic walls from falling in as the effusion is absorbed. Finally, after all inflammatory diseases, there persist disorders in the pulmonary circulation, a tendency to stasis, to passive congestion, against which no means is known to be more efficacious than extensive and profound respiratory movements. These movements act upon the contents of the capillary vessels of the lungs like the piston of a suction-pump in accelerating the flow of blood. But exercise in disorders of the respiratory apparatus influences not only the contents of the chest; it often has the effect of modifying the shape of the thoracic cage by mobilizing the osseous parts that compose it. The indication to restore the normal shape of the thorax is often present when a chronic pulmonary affection has habituated the lung to greatly restricted movement. These habits of restricted respiration have permitted the costovertebral and costosternal articulations to fall into a certain degree of ankylosis, which, at the end of a number of years, renders extensive respiratory movements impossible. The functional insufficiency of the thoracic bellows is also frequently observed in the old, as age is accompanied by stiffening of the ligaments, disappearance of the synovial fluid, and ossification of the articular cartilages.

¹ Münchener medicinische Wochenschrift, January 27, 1903.

There is an indication in all these cases to induce movements in the costal articulations, just as one does in the case of an ankylosed joint.

FORMULAS, ORIGINAL AND SELECTED.

Two Prescriptions for Enuresis.—Sheffield¹ has found the following combination useful in incontinence of urine due to atony:

- Fluid extract of ergot 12 cc. (3 drams)
- Fluid extract of rhus toxicodendron. 4 cc. (1 dram)
- Five to ten drops every four to six hours for a child of 6.

In incontinence due to hyperesthesia of the neck of the bladder he recommends the avoidance of irritating foods, the use of the sitzbath, and antispasmodic treatment, as:

- Fluid extract of hyoscyamus 2 cc. (30 minims)
- Sodium bromid 4 grams (1 dram)
- Anise water 30 cc. (1 ounce)
- Syrup enough to make 60 cc. (2 ounces)
- Teaspoonful every four to six hours for a child of 6.

Counterirritation (mustard plasters) over the lumbosacral region is also useful. [H.C.W.]

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended June 6, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
Alabama:	Mobile May 23-30	6	
California:	Los Angeles May 16-23	1	
	San Francisco May 17-24	1	
	Jacksonville May 24-31	3	
Florida:	Pensacola May 16-23	2	
	Baker County May 16-23	1	
	Columbia County May 16-23	3	
	Levy County May 16-23	5	
	Washington Co. May 16-23	1	
Illinois:	Belleville May 23-30	4	
Indiana:	Evansville May 23-30	1	
	Indianapolis May 23-30	4	1
	Des Moines May 21-30	1	
Iowa:	New Orleans May 23-30	8	
Louisiana:	Paiten May 27	1	
Maine:	Baltimore May 23-30	1	
Maryland:	Fall River May 23-30	16	
Massachusetts:	Holyoke May 23-30	1	
	Detroit May 23-30	9	
Michigan:	Grand Rapids May 23-30	3	
	Winona May 23-30	2	2
Minnesota:	St. Louis May 24-31	3	
Missouri:	Helena May 1-31	3	
Montana:	Omaha May 23-30	1	
Nebraska:	Nashua May 23-30	8	
New Hampshire:	New York May 23-30	3	
New York:	Cleveland May 23-30	1	
Ohio:	Hamilton May 23-30	3	
	McKeesport May 23-30	3	1
Pennsylvania:	Philadelphia May 23-30	41	7
	Pittsburg May 23-30	19	3
		Four cases imported.	
South Carolina:	Charleston May 23-30	1	
Tennessee:	Memphis May 16-30	4	
Utah:	Salt Lake City May 23-30	6	
Washington:	Tacoma May 25-June 1	2	
		One case imported.	

SMALLPOX—FOREIGN.

Austria:	Prague May 2-16	14	
Belgium:	Antwerp May 9-16	7	
	Brussels May 2-16		4
	Ghent May 2-16		*2
Canary Islands:	Las Palmas May 2-9	18	
	Santa Cruz de Tenerife May 9-16	2	
Colombia:	Bocas del Toro May 12-19		1
France:	Marseilles Apr. 1-30		36
Germany:	Hamburg May 9-16	1	
Great Britain:	Bristol May 9-16	11	
	Cardiff Apr. 4-May 2	11	1
	Dublin May 9-16	17	4
	Leeds May 16-23	25	1
	London May 9-16	7	
	Manchester May 9-16	10	1
	Nottingham May 9-16	5	
	Sheffield May 2-9	1	1
	Sunderland May 9-16	1	
India:	Bombay Apr. 23-May 5		83
Mexico:	City of Mexico May 3-10	16	6
Russia:	Moscow May 2-9	3	
	Odessa May 2-16	6	
Turkey:	Smyrna Mar. 23-Apr. 5		1

¹ Postgrad., xvii, No. 12.

YELLOW FEVER.

Costa Rica:	Limon May 14-21	4	1
Mexico:	Tampico May 16-23		5

CHOLERA.

India:	Calcutta Apr. 28-May 2	65	
	Madras Apr. 25-May 1		1

PLAGUE.

India:	Bombay Apr. 28-May 5	704	
	Calcutta Apr. 28-May 5		228
	Karachi Apr. 26-May 3	187	156

Changes in the Medical Corps of the U. S. Army for the week ended June 6, 1903:

BROWN, IRA C., contract surgeon, is granted leave for twenty-five days, from about May 25.

APPEL, Major DANIEL M., surgeon, now at San Francisco, Cal., will proceed to Denver, Colo., and report to the commanding general, department of the Colorado, for further orders.

DUVAL, First Lieutenant DOUGLAS F., assistant surgeon, is granted leave for two months on surgeon's certificate.

HART, JAS. W., contract surgeon, will proceed from Fort Washington to the artillery district of Portland and report to the district commander for assignment to a station where his services may be needed. At the close of the maneuvers he will return to Fort Washington with the 37th company.

DAYWALT, GEO. W., contract surgeon, will, upon the arrival at Fort Schuyler of Assistant Surgeon Chas. N. Barney, proceed to the artillery district of Portland and report to the district commander at Fort Preble for temporary duty at Fort Levett. When his services are no longer required in connection with the army and navy maneuvers, he will, when relieved by the district commander, return to his station.

MAUS, Lieutenant-Colonel LOUIS M., deputy surgeon-general, extension of leave granted April 24, is further extended twenty days.

STRAUB, Captain PAUL F., assistant surgeon, leave granted January 29 is extended fifteen days.

GREENLEAF, First Lieutenant HENRY S., assistant surgeon, leave granted May 12 is extended one month.

JUENEMANN, GEO. F., contract surgeon, now in Washington, D. C., will proceed to Fort Columbus for duty.

CHAFFEE, First Lieutenant JEROME S., assistant surgeon, resignation accepted to take effect July 1, 1903. Leave to include July 1, 1903, is granted, to take effect upon his relief from duty at Fort Porter.

DE WITT, First Lieutenant WALLACE, assistant surgeon, now under treatment and observation at Fort McPherson, will proceed to Fort Porter for duty, to relieve First Lieutenant Jerome S. Chaffee, assistant surgeon.

COLLINS, First Lieutenant G. L., assistant surgeon, is granted leave for ten days, from about June 14, 1903.

Changes in the Medical Corps of the U. S. Navy for the week ended June 6, 1903:

BAKER, M. W., assistant surgeon, detached from the Naval Academy and ordered to the Brooklyn—May 29.

GROVE, W. B., passed assistant surgeon, detached from the Naval Dispensary and ordered to the Naval Hospital, Philadelphia, Pa.—May 29.

FARENHOLT, A., passed assistant surgeon, detached from the Independence and ordered to the Boston—May 29.

PICKRELL, G., surgeon, detached from the Naval Academy and ordered to the Texas—June 2.

AMES, H. E., surgeon, detached from the Texas and ordered to the Naval Academy—June 2.

LUNG, G. A., surgeon, detached from the Naval Hospital, Philadelphia, Pa., and granted sick leave for three months—June 3.

DUNCAN, G. F., acting assistant surgeon, ordered to duty with Recruiting Party No. 3—June 3.

KEENE, W. P., acting assistant surgeon, ordered home to wait orders—June 3.

Changes in the Public Health and Marine-Hospital Service for the week ended June 4, 1903:

BROWN, B. W., passed assistant surgeon, to proceed to Memphis, Tenn., for special temporary duty—June 1, 1903.

WICKES, H. W., passed assistant surgeon, granted leave of absence for one day June 10—June 4, 1903.

GREENE, J. B., passed assistant surgeon, granted leave of absence for eight days from June 10—June 2, 1903.

LUMSDEN, L. L., passed assistant surgeon, bureau order of May 26, 1903, directing him to proceed to San Juan, P. R., for temporary duty, amended so that he shall be relieved from duty at New Orleans, La.—May 29, 1903.

KING, W. W., assistant surgeon, granted leave of absence for two months from June 10—June 2, 1903.

ROBERTSON, H. MCG., assistant surgeon, granted leave of absence for seven days from May 29, 1903, under paragraph 191 of the regulations.

GOLDSBOROUGH, B. W., acting assistant surgeon, granted leave of absence for seven days from June 3—May 29, 1903.

SINCLAIR, A. N., acting assistant surgeon, granted leave of absence for twenty-five days from June 24—June 3, 1903.

TAPPAN, J. W., acting assistant surgeon, granted leave of absence for one month from May 25—June 3, 1903.

ALLEN, G. C., pharmacist, granted leave of absence for seven days from May 29, 1903 under paragraph 210 of the regulations.

MASON, M. R., pharmacist, relieved from duty at San Francisco, Cal., and directed to proceed to Dutch Harbor, Alaska, for special temporary duty; thence to Nome, Alaska, and report to acting assistant surgeon in charge for temporary duty—May 29, 1903.

American Medicine ⁹⁷⁵

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Waterborne Infection and the Chicago Drainage Canal.—It is said that even angels have pleasure in saying "I told you so," and Dr. Reynolds may certainly be pardoned a just degree of self-satisfaction in sending out to friends and critics the "Report of Streams Examination" of the sanitary district of Chicago. It is a pity he could not have secured the cooperation of the St. Louis governmental and health authorities. The regret is tempered by the thought that if the results had been as convincing and as fully stated as those of the published reports of the laboratory of the city of Chicago and of the University of Chicago, the printer's bill would have been higher and the reviewer's duties harder to bear. In a word, the present reports may be summarized in Professor Burrill's words, that "the studies in detail and as a whole tend strongly to show that neither before nor after the opening of the Sanitary Canal had the drainage waters from the city of Chicago for the period covered by this report any appreciable effect bacteriologically upon the waters of the Mississippi river. Even if the waters of the Illinois river at its mouth were proved to be a source of contamination to those of the Mississippi, the above statement would still seem to hold good, because of the conditions shown to exist at Averyville and Pekin. It is still more clearly apparent that Chicago sewage cannot be held responsible for the contaminations existing in the commingled waters of the Mississippi and Missouri rivers."

Pathogenic Bacilli and the Chicago Drainage Canal.—We are not of those who think the drainage of city sewers should be into the streams. There are better methods, and far more economical, of disposing of the most valuable and most wasted nitrogen, as has been fully demonstrated. And even if the present problem of contamination and spread of disease is temporarily disposed of, it is only postponed by using the rivers as sewers. The growth of the population of the country will surely bring the question up again. In the meantime Dr. Reynolds' thorough-going report certainly seems to answer the contention of the Mississippi river cities in a convincing manner. Professor Jordan concludes as follows:

Considering the problem as a whole, it must be remembered that it is not so much the history of the nitrogen compounds that is significant, especially where conditions are so

intricate as in the present instance, as the story of bacterial life. If the question be plainly put as to whether typhoid bacteria or similar pathogenic microbes are likely to pass from Chicago to Grafton in the water of the Illinois river under any of the conditions prevailing during our investigation, it must be plainly answered that all the evidence that we have been able to secure is against such an occurrence. A study of the deathrate among the colon bacteria added to the river water in sewage lends no countenance to the view that typhoid bacteria will survive passage down river. The facts indicate that the colon bacteria, which are present in such large numbers in Chicago sewage—undoubtedly in much larger numbers than typhoid bacilli—disappear almost completely in less than 150 miles' flow. Since all investigators are agreed that the colon bacillus is more hardy than its relative, the typhoid bacillus, and can live in water for a longer time, there is every reason for supposing that the latter microbe dies out with at least the same rapidity. Even were typhoid bacteria found in the water at the mouth of the Illinois, there are scores of communities to which they might certainly be more plausibly traced than to Chicago.

Deaths from Plague of Laboratory Workers.—

As a result of accidental infection the death of Dr. Sachs, of Berlin, a worker in the Koch laboratory, is reported. In 1898 Professor Nothnagel and his assistant, Dr. Barisch, contracted the disease in Vienna in the same way. The latter died, as did also his attending physician, Dr. Müller. In studying the disease in 1899 Professor Pestana, of the Bacteriologic Institute of Lisbon, was infected during an autopsy conducted at Oporto. Two days after returning to Lisbon he experienced symptoms of the dreaded disease. He ordered his own isolation in a special ward of the hospital, and made a record of every detail of his illness that could be useful to his assistants. Foreseeing the end, he left instructions for a postmortem examination, the disinfection and burial of his body, and for the transmission of various data to the Pasteur Institute in Paris. He died giving an imperfect lecture on his own case. Other cases, though not ending fatally, have occurred. It is said that the German government has stopped further laboratory investigation of plague, but the report may be doubted. The deadliness of the disease makes it all the more a duty to carry on experimental study, and men with the scientific instinct and moral courage to do so should at least not be prevented from risking their lives, of course under rigid rules as to dissemination of the germs, in a work of such great importance to civilization.

The annual Fourth of July noise and slaughter is beginning earlier, continuing longer, and growing more frightful each year. Officers, and especially the health officers of cities, should ponder well the article published on "Fourth of July Tetanus" by Dr. Wells in *American Medicine*, June 13, 1903. In Chicago the health commissioner a month before the craze should begin, already reports during the five preceding weeks 7 deaths from tetanus due to firearms, toy pistols, etc. In last year's entire season there were only 12, and in 1901 when the Mayor's proclamation was enforced the number was reduced to 4. It had been 24 in 1900. Health officers should issue popular directions how to treat such wounds, as Dr. Reynolds has done. The *Journal of the American Medical Association* says that the greater number of cases follow bad treatment of physicians, who do not act with scientific thoroughness. "The responsibility lies with the physician who first sees the wound." The selling or use of the deadly and misnamed toy pistol should be punished. And one day is enough! If mayors cannot be made to do their duty as to this single day let them rigorously prevent criminal folly from beginning a month or two before and dragging on for a month after the fatal day of "celebration."

The Suppression of the Truth as to Plague in California.—The report on this subject of the Oregon State Board of Health, by its secretary, Dr. Woods Hutchinson, has reached us too late for publication synchronously with that of the society. The history of the shameless suppression of the truth by the previous State officers of California is retold without fear or favor, and confirms a useful lesson that should prevent any repetition of the experience. Dr. Hutchinson describes the beginning of the suppression of the truth as follows:

As soon as the first plague case was clearly identified by autopsy and cultures, the United States Marine-Hospital inspector at San Francisco sent a telegram to the then secretary of the State Board of Health of California, Dr. Matthews; he promptly came down in person, saw the specimens, slides, and cultures, accepted the diagnosis, and said that it was just what he had been expecting. A joint meeting of the Marine-Hospital inspector, the City Board of Health of San Francisco, and the State Board of Health, as represented by the secretary, was held that same evening. The existence of plague was unanimously conceded, and a set of resolutions drawn up for publication announcing the fact, and the usual notification ordered to be sent to the other State Boards and inspectors. To the astonishment of the mover and seconder of the resolutions these appeared in the San Francisco papers the next morning just as passed, with the trifling exception that in every affirming clause a negative was inserted, making them state that the plague did *not* exist in San Francisco, and that it was *not* necessary to notify the other boards of health of any danger from infection.

How similar methods were used until the present administration came into power are described in the body of the report, and these, in a general way, are familiar to our readers. In another column we give Dr. Hutchinson's recommendation as to the sterilization of Chinatown.

Of Poisons and Poisoning.—The repeated occurrence of murder in some of its most revolting forms has within the present year but too prominently engaged

the attention of the public of Great Britain, both lay and medical. And the number as well as the variety tends, unhappily, to show that the extension of liberty and the widespread distribution of education and general intelligence leave still a full share of employment for the criminal lawyer as well as for the moral and the religious teacher. The fact that the struggle for life is increasing in intensity, while the limitations of individual action have been lessened and the facilities for mischief and the knowledge of the methods by which it can be effected have been made more easily attainable, tend to maintain the uniformity of the statistical record of some of the most atrocious forms of crime, even in presence of all the philanthropy and altruism of our advanced civilization. Throughout the cosmopolitan arena of human emulation there has, at all times, necessarily existed the universal endeavor of each individual to disable or disarm his antagonist. At every period of history force has been the usual weapon of the strong and fraud of the weak. Before the development of civilization bloodshed was always and everywhere freely resorted to. As communities increased in numbers and life became more settled, mutual concession and adaptation became absolutely necessary. Accordingly, more subtle methods of mutual injury and destruction were discovered and adopted. Poisoning was, therefore, of later practice than the destruction of life by the shedding of blood. It was also a weapon of the weak rather than of the strong; of the subtle and intellectual rather than of the violent and the coarsely energetic. For these reasons it became a method of the Oriental and subtropical resident rather than of the inhabitants of the northern and western countries; and of the female rather than of the male; of the oppressed rather than of the conqueror. Instances of the utilization of the destructive powers of certain preparations of antimony against human life have of recent years been brought very prominently under the notice of the English-speaking world, notably in the medicolegal investigations of the celebrated "Bravo case," and of the still more gruesome Chapman atrocities, which were revealed in London a short time ago. The very existence of poisons forms, indeed, one of the specially mysterious items in the methods and purposes of an inscrutable Providence. We know that every powerful medicinal agent is a "poison." Even common table salt has proved a fatal poison when taken in large quantities on an empty stomach. And the properties of every one of the more deadly poisons present, in each individual instance, something weirdly interesting in their characteristic peculiarities. If we turn to the products of the vegetable kingdom we there find the active crystalline principles of the aconite ("monkshood") digitalis ("fox-glove") and belladonna ("deadly nightshade") occupying the foremost rank by right of their deadly destructiveness. The "alkaloids" which modern chemistry has extracted from those plants are the most fatal to animal life of any (merely chemic) agents known to modern science. Those of the two former are, even in the present state of experimental knowledge, decidedly difficult to trace in the body after death when present in but small quantities and not sought for till after complete absorption.

from the gastrointestinal surface has taken place. In the latter years of his life Sir Robert Christison, professor of medical jurisprudence in the University of Edinburgh, used to relate to his class at lecture certain of his medicolegal experiences as an "expert witness" in this connection. He was *the* great toxicologic authority of his generation. Accordingly his skilled evidence was frequently in requisition. On one of those occasions, when undergoing cross-examination regarding the possibility of satisfactorily recognizing poisonous substances sought for in the dead body, he turned to the judge and said: "My Lord, there is but one deadly agent of this kind which we cannot satisfactorily trace in the human body after death; and that is—," when the judge at once interrupted him with: "Stop! stop! Mr. Christison, please; it is much better that the public should not know it." It was afterward remarked by more than one of his then student class that Lamson, who was afterward executed for the poisoning of his nephew by aconitin, was a member of his audience, and was exceptionally careful in taking notes on one of those occasions when Professor Christison was explaining to his class that aconitin was the poison which he had been prevented by the court from naming.

Indecent and fraudulent advertisements in newspapers are expressly disapproved of by the grand jury of Buffalo, which says that "by lending their influence to fleecing the credulous and unwary instead of protecting the interests of the public by exposing such frauds or refusing such advertisements" the newspapers are abettors of the crimes of their advertisers. In all large cities and many small ones there are daily appearing invitations to the most degraded rotteness and immorality. In a majority of country newspapers throughout the United States, and in a multitude of crank journals, these vile notices of abortifacients, obscene literature, self-confessed frauds, etc., make up a large part of the disgusting advertising columns, freely placed in the hands of every woman and child. The alcoholic nostrums constitute another portion. Without the money derived from these criminal practices these good-for-nothing periodicals could not live. But just as plainly they are mostly illegal. The difficulty is to get the law enforced by prosecution of the offenders. Remonstrance will usually prove unavailing, but not always, and self-respecting editors and publishers should be persistently appealed to by physicians and their friends. The more thorough-going reform will come from the action, if it can be aroused, of medical societies, and by appeals to the Postmaster-General. One-half the periodicals now issued have no right to the use of the United States mails.

The Doctor's Vacation.—By common consent this season of the year has become the vacation period for nearly all classes of society and the number who take vacations is yearly becoming greater. For one reason or another the practitioner of medicine and surgery often feels that he cannot take advantage of this important means of storing up strength for a year's work. Some members of the profession would make the excuse that they can not afford it, more would say that they find it

impossible to get away from their practice. In most cases neither of these excuses is really adequate. While few of us ever accumulate very much money, physicians as a class are in comfortable circumstances and could, without great sacrifice, spare a few extra dollars for a short season of rest and recuperation. And as to getting away from practice, few men are so situated that they could not turn over their practice to a friendly neighboring practitioner, to some recent graduate, or even to an advanced student of medicine. Fortunately the early summer season is usually a healthy one and the average doctor would find less occasion for conscientious scruples about turning his practice over into the hands of another for this reason. Thirty or forty years ago vacations were not considered essential by any considerable portion of the people of this country, but this period has long gone by. Life is becoming more strenuous, competition greater in all lines of work, and men generally are coming to realize the necessity for shorter hours of labor, for occasional periods in which to build up a supply of energy for a hard year's work. The medical profession is no exception to the general rule, in fact, men in few occupations are probably so generally overworked or in as great need of a change. The vacation is a good investment of time and money, and every member of the profession should take advantage of the first opportunity when practice is a little slack to get away for a few weeks' holiday.

"Expectorate" and "Spit."—Commissioner Lederle has received letters objecting to the use of the word "spit," in the ordinances and advising the word, "expectorate." When President Roosevelt was police commissioner he strenuously urged the use of "spit," and called "expectorate" "a vile word." One must side with the President in this matter, in a general way, although it might be permissible to add that etymologically speaking "sputum" and "expectoration" may designate two different excreta. The sputum (allied to *splatter*) may be from the chest or may not be, although this is not the question in mind when framing the ordinances. The sanitarian does not aim at a differentiation. People who "expectorate" will probably "perspire" instead of "sweat." That some officials do find a distinction where others do not is shown by the fact that in an eastern city the following notice is displayed in the street cars: "Passengers must not expectorate nor spit on the floor of this car." "Expectorate" is morbid alike in a medical, a philologic, and a social sense, but no charge can be made by philology against "spit." According to the editor of "Literary Notes" of the *British Medical Journal* the only advantage "expectorate" can claim is that it once incited a good pun: "Some one speaking to a lady of a friend of whom it might have been said that he had no manners and his customs were beastly, gave an example that he would not hesitate to expectorate in her presence. She at once replied, 'Then he cannot expect to rate as a gentleman.'" Nowadays, even the spitter must expect berating.

The relation of sunshine and the deathrate is more than suggested by the last report of the bulletin of

the Chicago Department of Health, which says that there has been a drop of more than 21% in one week, and of 9.8% under the average June deathrate of the previous ten years. In Chicago since the first of the year there has been but a little more than one-half (55.8%) of "possible" sunshine. In January there was only 45%; in February, 55%; in March, 52%; in April, 60%; and in May, 67%. The increasing amount in the last two months, with the certainty of a continuing increase during the next two months, strengthens the hope and belief that there will be a diminishing deathrate and an improving condition of the public health for some time.

"An honest pensioner" is thus described by the *Baltimore Sun* and the *Chicago Tribune*: When requested by the Pension Bureau to explain how he incurred physical disabilities, he sent in the following minutely graphic statement:

The way I got my war ingyry was a ketchin of a hog. The Hog war a sow hog and ur captain wanted her for forege. We was chasin the sow, and she crawled threw a hoal in a rale fence. It war a big hoal, and I thot I war about the sis of the hog, and tried to crawl threw, but I stuk and trin' to wigle out I throve the rales off and one hit me on my hed and noked me senseless. I do not think the sow pig had nothing to do with my line of duty, for I did not kech the hog. Wich she never war caut.

Napoleon is reported to have said that "an army travels upon its belly," and if the commissary department is a prime necessity in war then one may hope this frank and honest old soldier may get his pension. In spite of himself he was "acting in the line of his duty," "he done the State some service," or would have done it. It is a pity "she never war caut."

EDITORIAL ECHOES

Combined effort appears to be a distinguishing feature of this new twentieth century. This is seen in nearly all forms of civic and commercial life, and even scientific and professional effort. It would seem that when the history of the twentieth century is written there will be lacking those great and single characters looming way above the average, leading, directing, or dictating; instead there will be an elevation of the average, the best individual effort will neither in purpose nor effect aggrandize the individual, but will be exerted in connection with other effort of like nature for the establishment of a parity of well being among all. This, I take it, will be the keynote of our action, bearing constantly in mind the actual results to be attained and being determined to attain them.—[Dr. Walter Wyman.]

Limits the Spread of Diphtheria.—What the Pasteur Institute considers the most effective blow yet dealt diphtheria consists in a discovery just formally announced to the Academy of Medicine by Dr. L. Martin, with the collaboration of Dr. Roux. Martin has found that Roux's famous antidiphtheric serum can be administered to patients in the form of pastilles or bonbons as well as by means of subcutaneous injection. Dr. Martin explained to the Academy that the serum is useless for the destruction of the bacilli during the convalescent stage of the disease. Throughout that period the throats of patients are still full of contagion—a condition which is responsible for the fearful spread of the disease. By direct contact of the pastilles with the throat the bacilli are destroyed—an effect obtainable in no other way. The Academy passed a vote of honor to the discoverer, whose experiments have left no doubt of the validity of his theory.

AMERICAN NEWS AND NOTES.

GENERAL.

Tired of the Experiment.—The experiments which Dr. Wiley, chief of the Chemical Division of the Agricultural Department, has been conducting on a number of volunteers for the purpose of testing the effects of borax and other preservatives in food will be suspended on June 30. The list of volunteers has fallen from 12 to 7, and there have been many complaints since warm weather began from the government boarders, who want a change of diet.

Married Woman's Liability.—The *New York Times* says: "A judgment recovered by Herbert Hazard on an assigned claim of Drs. Emory M. Wadsworth and Stuart H. Benton against Mrs. Caroline Potts for medical services has been reversed by the Appellate Term. The court holds that a married woman is not liable for medical attendance rendered to her husband and his family unless in the first instance she pledged her personal credit to the attending physician."

Plague Increase in Manila.—From Manila comes the following: Assistant-Surgeon Heiser says the number of cases of plague has been steadily increasing of late. With the view to preventing its spread to other parts of the islands and to the United States, it has been deemed necessary to fumigate with sulfur in order to kill rats and vermin, the entire shipping which enters and leaves this port. This is a very large undertaking, and taxes the station force to its utmost limit. The Board of Health is cooperating on land in this matter. They have employed a number of rat-catchers, and pay a five-cent bonus for every rat delivered to them. In addition they contemplate inoculating every Chinese with Shiga antiseptic serum.

EASTERN STATES.

Trenton's Attack on Mosquitos.—Trenton has begun a crusade against the mosquito along lines laid down by Professor Smith, State Entomologist, who made an inspection of the city at the request of the Board of Health. Professor Smith said he had no doubt that the malaria prevalent in Trenton could be traced to the mosquitos that breed in the swamps around the Florence Mission.

Massachusetts Medical Society.—The one hundred and twenty-second anniversary of the Massachusetts Medical Society was celebrated in Boston on June 10, a large number of medical men being in attendance. Since the last meeting, 42 members have died, and 173 members have been admitted. A number of well-known physicians contributed important articles and the meeting was a decided success.

Mortality in Connecticut.—From the report of Dr. Charles P. Linsley, secretary of the State Board of Health in Connecticut, it appears that pneumonia is the cause of more deaths in the State of Connecticut than is tuberculosis. His report says that there were 1,264 deaths in Connecticut during May, 1903, being 164 more than in the same month last year, and 156 more than the average number of deaths in May for the five years previous. Dr. Linsley said that pneumonia is now the cause of a larger mortality than tuberculosis in Connecticut. During the past five months there were 570 deaths from tuberculosis to 845 from pneumonia.

NEW YORK.

Summer Rest for Sick Girls.—A New York exchange states that St. Andrew's Convalescent Hospital for Women and Girls has been closed for the summer, but the managers have opened a summer rest at Woodcliff, Bergen county, N. J., where patients will be received for two weeks, or a longer period if necessary.

The Gudsell-Bedell Bill.—*Charities* for the week ended May 23 severely criticises Governor Odell, of New York, for approving the Gudsell-Bedell bill. It appears that the Governor's explanation of his signature is weak in some particulars. He is quoted as saying "It (the bill) seeks to prevent the erection of such hospitals without the consent of the Board of Supervisors of the county or the board of the town in which the hospital is to be erected." *Charities* says "By substituting or for and, the Governor has taken away much more than half the iniquity of the measure." Unfortunately, the act as approved requires the consent of both county and town authorities. The law before the enactment of the present measure required the consent of the local Board of Health and the approval of the State Commissioner of Health. According to the Governor's explanation, this bill substitutes for the State Commissioner of Health, the local Board of Supervisors of the county, and for the local Board of Health the town board. The journal just quoted states that the bill makes no such substitution. It does not substitute one set of consents for another, but adds new ones. The act does not repeal earlier provisions of the health law, but clearly adds others. The measure is considered very inimical to the interests of New York City, and it is virtually prohibiting the erection of hospitals for tuberculosis outside of the city limits."

PHILADELPHIA, PENNSYLVANIA, ETC.

Discontinuance of the Philadelphia Medical Journal.

—In its issue for June 13 the *Philadelphia Medical Journal* announces its consolidation with the *New York Medical Journal* and its removal to New York. The statement is made that "the reasons for this change are entirely administrative."

Pupils Must be Physically Sound.—It is stated that all children hereafter entering the public schools in Camden will be required to undergo a physical examination; at least a recommendation to this effect has been made to the Board of Education by the instructor in physical training in that city. Those found unfit to enter school will be recommended for treatment.

The Board of Education Committee on Hygiene has adopted a resolution that all applicants for admission to the Philadelphia Normal school or the school of pedagogy and applicants for examination for certificates to teach or for positions as teachers in the public schools of Philadelphia shall be required to furnish certificates of physical fitness, each certificate to be signed by a physician appointed by the Committee on Hygiene.

Vaccination.—Concerning those in the city who refuse to be vaccinated, Dr. Martin is quoted as saying: "The names and addresses of those whom the physicians find out and who have not been and will not allow themselves to be vaccinated will be sent to the department. Should the disease continue to spread the entire square in which the persons live who refuse to be vaccinated will be placed and kept under quarantine until the disease leaves the ward."

Smallpox in the Twenty-eighth Ward.—A house to house vaccination in the Twenty-eighth ward has been ordered by Dr. Edward Martin, Director of Public Health, to check the spread of smallpox, which lately has increased to an alarming extent in that ward. Dr. Martin said that he did not consider a wholesale fumigation of residences in the locality necessary, but felt that the application of extraordinary precaution in the houses where diseases of that class are now under treatment would suffice and stop the contagion spreading.

SOUTHERN STATES.

The LaGrange Sanatorium opened March 25. The building is of three stories and there are accommodations for 12 patients. An able corps of consultants are in attendance.

Rabies.—The Georgia Pasteur Institute, in Atlanta, now has 17 patients under treatment, which is the largest at any one time since its establishment. Rabies is asserted to be much more prevalent than usual in the South.

Health Conditions in New Orleans.—Dr. Kohnke, chairman of the Board of Health of New Orleans, has submitted his report, which in part is as follows: "That the health conditions of New Orleans are progressively and persistently improving is again shown by the mortality statistics for the last month. During May of the present year there occurred 614 deaths as against 656 for May of 1902. The total mortality during the five months of this year shows a decrease as compared with the record of last year of 152. A decreasing mortality in the face of an increasing population means, of course, much more than the mere figures given imply."

WESTERN STATES.

Deathrate in Chicago.—The mortality rate in Chicago during the first week of June took a sudden turn for the better. The decline amounted to a little more than 21% from the previous week, making the rate for the past seven days 9.8% less than the average June deathrate of the previous 10 years, and 5.7% less than that of the corresponding week of 1902.

Pneumonia in Chicago.—The Chicago Bulletin of the Health Department for the week ended May 31 says: "Since the first of January there have been 2,891 deaths from pneumonia, as compared with 1,321 from tuberculosis and 1,238 from all other communicable, contagious, or infectious diseases, including diphtheria, erysipelas, influenza, measles, puerperal fever, scarlet fever, smallpox, typhoid fever, and whooping-cough. This is an excess of 382 pneumonia deaths over the deaths from all the other preventable diseases—1,570, or 118.8% more than the deaths from tuberculosis, and 1,653, or 133.5% more than those from the other specified diseases."

Notice to Milk Dealers.—The Bulletin of the Chicago Health Department, week ended June 6, gives the following as a notice placarded on milk platforms from Dr. Reynolds, Commissioner of the Health Department, to milk dealers: "Shippers' cans must be returned to farmers clean and dry. All vessels used in handling milk should be scalded or sterilized daily. All milk bottles should be washed with hot soap suds, rinsed in clean water, and then sterilized in boiling water or live steam before milk is put in them. No dealer can expect to hold his bottle trade unless he does this. If possible every dealer should visit the farm where his milk is produced, so he can assure his customers that it is produced under clean and healthy conditions."

FOREIGN NEWS AND NOTES

GENERAL.

Slot Machines for Patent Medicines.—It is said that in Paris patent medicines are to be dispensed by means of slot machines. The physicians are making a vigorous protest against the innovation, claiming that it will be attended with much danger, since the wrong drug may be easily dispensed.

Government Prohibition Against Plague Germs.—From Berlin comes the following news: In consequence of the death from plague at the Berlin hospital of Dr. Milan Sachs, the young Viennese physician, the government has decided to issue a decree forbidding further experiments with plague germs, the risk of spreading infection being considered more dangerous to the public health than the knowledge gained in studying the deadly microbe justifies. Dr. Sachs caught the plague in Dr. Koch's bacteriologic laboratory for infectious diseases. The laboratory is isolated, and the most minute precautions are taken at the doors and windows to prevent the escape of the germs. No one is allowed to approach or enter the building except the investigators.

Motor Intoxication.—The *St. James Gazette* says: "The opinion of Dr. Forbes Winslow, the eminent specialist on brain disorders, that the racing motor has outdistanced the powers of the man who drives it, is borne out by the fact that a new disease called 'motor intoxication' has been discovered by the savants of Paris. It is the temporary mental disorder of speeding automobilists. M. Hachet Souplet, at the last meeting of the Société d'Hypnologie et de Psychologie, spoke of the intoxicating effect of rapid motor locomotion. The mental and moral states of the driver become abnormal. He grows vindictive, furiously aggressive, and lets himself be carried away by the angry impulse of the moment. The high rate of speed works him up into the very same state of mind which makes the habitual drinker of alcohol regardless of consequences."

Plague in Bombay.—From an exchange we take the following: "Captain Harris, master of the British steamer, 'Queen Alexandra,' which lately arrived from Bombay, said that 2,009 deaths were reported in that city in the week ended April 21, from the bubonic plague and smallpox. On the following week the deaths numbered 1,747. Although deaths as the result of the plague have always occurred in Bombay, the disease first began to rage as an epidemic about January 1. Since then the health authorities have waged a constant battle against it. The number of deaths is gradually becoming less as the season advances, the warm weather aiding the efforts of the physicians in checking its progress. Most of the bodies are burned in accordance with the provisions of the natives' religion, and for this reason little trouble is experienced in disposing of the dead. Captain Harris said that the sanitary regulations in Bombay could not be surpassed. The natives, however, huddle together and are not particular about their personal cleanliness. The disease is confined to them almost exclusively."

OBITUARIES.

John N. D. Shinkel, in Friar Point, Miss., May 26. He was graduated from the Rush Medical College, Chicago, in 1885. He was a member of the American Medical Association, Mississippi State Medical Association, Mississippi State Board of Health, Tri-State Medical Association, and he had also served as vice-president of the International Association of Railway Surgeons.

John F. Golding, in Brooklyn, N. Y., June 7, aged 49. He was graduated from the College of Physicians and Surgeons, New York City, in 1875. He was professor of osteology, and also held the chair of theory and practice of pharmacy in the College of Pharmacy. He was a member of the Kings County Medical Society and of the Kings County Pharmaceutical Society.

Edward P. Luce, at Bayonne, N. J., June 12, aged 75. He was graduated from the Cincinnati College of Medicine and Surgery in 1862, and afterward served as surgeon in the United States army during the Civil War.

Charles F. Hamlin, in Medway, Mass., May 16, aged 34. He was graduated from Medical School of Maine, Bowdoin College, Brunswick, in 1892, and was a member of the American Medical Association.

Leon H. Armstrong, formerly an acting assistant surgeon in the United States navy, died at Atlantic City, N. J., June 11. He was graduated from the Jefferson Medical College, Philadelphia, in 1871.

Samuel S. Scott, in Erlanger, Ky., May 22, aged 77. He was graduated from the Medical College of Ohio, Cincinnati, in 1854, and served as surgeon in the Confederate service during the Civil War.

Mark T. Loope, at Spokane, Wash., May 22, aged 46. He was graduated from the Baltimore Medical College, in 1893, and was a surgeon of the Northern Pacific Railway.

William Caldwell, at Rockville, Md., June 6, aged 41. He at one time occupied the chair of anatomy and physiology in the West Virginia University at Morgantown.

Edward M. Kanouse, of Wausau, Wis., died at Three Rivers,

Wis., May 25, aged 60. He was graduated from the Hahnemann Medical College, Chicago, in 1880.

Bernard C. Nunez de Villavicencio, in New Orleans, La., May 21, aged 64. He was graduated from the University of Pennsylvania, Philadelphia, in 1865.

Nicholas Pfelfer, in Lindenhurst, Long Island, N. Y., May 24, aged 83. He was graduated from the Penn Medical University, Philadelphia, in 1883.

John R. Van Horn, in Clay City, Ind., May 23, aged 42. He was graduated from the Georgia School of Eclectic Medicine and Surgery, Atlanta, in 1894.

Augustin Thompson, of Lowell, Mass., June 8, aged 67. He was graduated from the Hahnemann Homeopathic College, Philadelphia, in 1867.

Joseph B. Cutts, in St. Louis, Mo., May 18, aged 83. He was graduated from the Medical School of Maine, Bowdoin College, Brunswick, in 1842.

Max J. Reingold, in Williamsport, Pa., May 12, aged 47. He was graduated from the Hahnemann Medical College, Philadelphia, in 1879.

W. O. Bullock, in Lexington, Ky., May 18, aged 61. He was graduated from the Bellevue Hospital Medical College, New York City, in 1869.

Asa E. Hoskinson, in Columbus, Ohio, May 19, aged 45. He was graduated from the Starling Medical College, Columbus, Ohio, in 1883.

John A. Bitting, in Sherman, Texas, May 14, aged 50. He was graduated from the Jefferson Medical College, Philadelphia, in 1874.

Edgar T. Schmidt, in St. Paul, Minn., May 17, aged 48. He was graduated from the Jefferson Medical College, Philadelphia, in 1876.

William R. Irons, in Allegheny, Pa., May 24, aged 42. He was graduated from the Jefferson Medical College, Philadelphia, in 1890.

R. B. McCants, in Demopolis, Ala., May 28, aged 45. He was graduated from the Southern Medical College, Atlanta, Ga., in 1882.

Gustave Boncher, of South Brooklyn, N. Y., May 21, aged 57. He was graduated from the Royal University of Naples, Italy, in 1864.

Henry Klemm, in St. Louis, Mo., May 24, aged 61. He was graduated from the St. Louis College of Physicians and Surgeons, in 1882.

James M. Park, of Little Rock, Ark., May 15, aged 51. He was graduated from the Eclectic Medical Institute, Cincinnati, in 1871.

Joseph T. Moreland, of Atlanta, Ga., May 22, aged 56. He was graduated from the Chattanooga (Tenn.) Medical College in 1901.

James I. Lamar, in Deatsville, Ala., May 11, aged 73. He was graduated from the Medical College of Georgia, Augusta, in 1851.

S. E. Farnsworth, in Minneapolis, Minn., May 21, aged 65. He was graduated from the University of Vermont, Burlington, in 1867.

Tyson Smith, at Kalamazoo, Mich., May 11, aged 55. He was graduated from the Homeopathic Hospital College, Cleveland, in 1881.

Samuel H. Thompson, of Arlington, Texas, May 20. He was graduated from the University of Tennessee, Nashville, in 1892.

James F. Rawlings, in Eldorado, Ill., May 13, aged 34. He was graduated from the Medical College of Ohio, Cincinnati, in 1891.

Charles Cochran, in Los Gatos, Cal., May 25, aged 86. He was graduated from the Willoughby (Ohio) University, in 1848.

Andrew L. Chapman, in Kansas City, Mo., May 15, aged 77. He was graduated from the St. Louis Medical College, in 1857.

A. M. Gontner, of York, Pa., May 17, aged 47. He was graduated from the Jefferson Medical College, Philadelphia, in 1878.

E. M. Flne, in Veedersburg, Ind., May 17, aged 59. He was graduated from the Medical College of Ohio, Cincinnati, in 1872.

H. D. Belden, in St. Albans, Vt., May 21, aged 57. He was graduated from the University of Vermont, Burlington, in 1877.

Charles H. Blair, at Beloit, Wis., May 17, aged 46. He was graduated from the Bennett Medical College, Chicago, in 1895.

John A. Robinson, in Due West, S. C., May 25. He was graduated from the Jefferson Medical College, Philadelphia, in 1868.

Henry M. Beer, in Valparaiso, Ind., May 26, aged 65. He was graduated from the Cleveland Medical College, in 1868.

John N. McCune, in McKeesport, Pa., May 17, aged 52. He was graduated from the Cleveland Medical College, in 1878.

Thomas H. Rye, in Turbine, Tenn., May 26, aged 74. He was graduated from the University of Nashville in 1859.

Charles T. Hudson, in Yazoo City, Miss., May 21. He was graduated from Tulane University, New Orleans, in 1882.

John F. Cronin, at Daytona, Fla., May 23. He was graduated from the Medical College of Georgia, Augusta, in 1890.

Sterling Loomis, at Springfield, Mass., June 5, aged 30. He was graduated from the Yale Medical School, in 1898.

W. M. Willingham, of Crawford, Ga., May 12. He was graduated from the Atlanta (Ga.) Medical College, in 1874.

J. K. Ruffin, in Wilson, N. C., May 23. He was graduated from the University of Pennsylvania, in 1837.

Joseph Lee Carr, of Clarksburg, W. Va., June 9, aged 85.

Edmund B. Myers, in York, Pa., May 13, aged 73.

B. F. Klugh, of Florin, Pa., May 16, aged 61.

SOCIETY REPORTS

SIXTH TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Held in Washington, May 12, 13 and 14, 1903.

ASSOCIATION OF AMERICAN PHYSICIANS.

[Specially reported for *American Medicine*.]

SECOND SESSION (CONTINUED).

Chronic Cyanosis with Polycythemia and Enlarged Spleen, a New Clinical Entity.—**WM. OSLER** (Baltimore) reported a group of cases of obscure etiology, the symptoms being chronic cyanosis, polycythemia, constipation, enlarged spleen, a trace of albumin in the urine, without signs of disease of the heart, lungs, or kidneys, and with no emphysema.

Discussion.—**CABOT** (Boston) referred to two cases of polycythemia previously reported by him, one with and one without splenic enlargement, giving details of these cases. **SHATTUCK** (Boston) had seen several cases, in one of which the urine showed the characteristics of interstitial nephritis. There was great cyanosis and congestion of the mucous membranes, with a blood count of 10,000,000 or 12,000,000. **STOCKTON** (Buffalo) reported a similar case, followed for two successive years, in which there was striking cyanosis, a trace of albumin, and a red blood count of 10,000,000. **MCPHEDRAN** (Toronto) had such a patient with extreme cyanosis, and in addition a bronzing or pigmentation of the skin. He referred also to cases of anemia with high color, and considered such more frequent in northern countries and high altitudes. **HARE** (Philadelphia) had had a case corresponding to those described by Osler with polycythemia, enlargement of the spleen, albuminuria and constant cyanosis. As to the polycythemia of high altitudes, he did not consider that view universally accepted. Experiments in that direction had been very contradictory. **BIGGS** (New York) had a patient under his observation, a man deeply cyanotic constantly, with protrusion of the eyes and a blood count of 8,000,000. **STENGEL** (Philadelphia) reported a similar case which had been under observation for some time, with nephritis and protrusion of the eyes. **EDSALL** (Philadelphia) had had a case identical with Osler's description in which there was no emphysema nor cardiac disease; the blood count between 10,000,000 and 12,000,000. **JOSLYN** spoke of a case of cyanosis due to acetanilid, and referred to a second case which he had reason to believe was due to the same cause. **COHEN** (Philadelphia) considered that cyanosis and a large hemoglobin count were rather contradictory, and asked if the count of the blood taken from the vein was the same as that taken from the peripheral circulation. **OSLER**, closing the discussion, said the protrusion of the eyes had suggested ophthalmic goiter, but the condition lasted for many years with no enlargement of the thyroid. **CABOT** said that in one of his cases the spectroscope was used and the ordinary oxyhemoglobin bands found. Hemoglobin was in excess.

Officers Elected.—President, **W. T. Councilman**, Boston; vice-president, **Edward L. Trudeau**, Saranac Lake; secretary, **Henry Hun**, Albany; recorder, **S. Solis Cohen**, Philadelphia; treasurer, **J. P. Crozer Griffith**, Philadelphia; councillors, **Victor C. Vaughan**, Ann Arbor, and **George M. Kober**, Washington.

THIRD SESSION.

Gonococcal Peritonitis in Children Simulating Appendicitis.—**W. P. NORTHRUP** (New York) reported several cases of gonococcal peritonitis with symptoms like those of appendicitis, with operation upon one case.

Discussion.—**KINNICUTT** (New York) thought a decidedly favorable prognosis could be given in these cases without operation. **JACOBI** (New York) thought these cases rather frequent. The prognosis was good without operation if one had patience to wait. There was a good opportunity for the development of chronic salpingitis when these cases occurred before the age of puberty.

A Preliminary Report on the Influence of Alcohol in Infectious Diseases.—**H. A. HARE** (Philadelphia) had conducted experiments to determine whether it was possible for alcohol to act favorably in infectious disease by increasing the bacteriolytic power of the blood. It seemed to be pretty conclusively shown that alcohol did increase the bacteriolytic power of the blood very materially. The author concluded that the use of alcohol combated infectious disease by increasing the bacteria-destroying power of the blood, and the effect seemed to be due to an increase in the complement.

Infantile Scorbutus.—**THOMAS R. ROTHE** (Boston) reported a case of a peculiarly grave type, illustrating the necessity of careful differential examination, with reference to osteosarcoma and osteomyelitis. In one case there had been subperiosteal hemorrhage along the right tibia, causing the case strongly to simulate osteomyelitis. Large sequestrums were removed by surgical procedure, and rapid improvement followed the administration of orange juice. In the other case, that of a child nine months old, swelling and extreme hardness of both femurs rendered diagnosis from osteosarcoma very

difficult. Recovery in this case also followed the use of orange juice.

Sudden Death and Unexpected Death in Infancy and Childhood, with Special Reference to the So-called Thymus Death.—J. P. CROZER GRIFFITH (Philadelphia). This paper will appear in a future issue of *American Medicine*.

Discussion.—BLUMER (Albany) has seen nine cases of the so-called thymus death in the last four or five years and divided the cases into two classes; those in which the organs were practically sterile at autopsy, and those in which infection existed. Some cases simply predisposed the individual to infection. JACOBI (New York) said a number of sudden deaths in infancy were caused by pressure of the thymus. It might in other cases be due to general disintegration, or atrophic disorder. The deaths sometimes occurred in the first stage of laryngismus stridulus, the child not living long enough to develop the cooing respiration.

[To be continued.]

AMERICAN SURGICAL ASSOCIATION.

[Specially reported for *American Medicine*.]

SECOND SESSION (CONTINUED).

Further Observations on the Influence of the Röntgen Ray Upon Sarcoma.—WILLIAM B. COLEY (New York) stated that from February 1, 1902, to May 11, 1903, he had treated at the General Memorial Hospital 36 cases of inoperable sarcoma, the pathologic classification of which was as follows:

Round-celled	21 cases
Spindle-celled.....	6 "
Mixed-celled.....	2 "
Melanotic sarcoma	1 "
Osteosarcoma, round-celled.....	1 "
Type of cell doubtful.....	5 "

He stated that in four cases which he had reported to the society last year the tumors had entirely disappeared, and in every case there has since been a recurrence. He then gave a brief history of the physical condition and treatment of several cases, and expressed the opinion that the x-ray has a much more powerful effect upon sarcoma than carcinoma. In regard to the relative merits of the toxins and x-rays in inoperable sarcoma, he felt that the time had been too short and experience too limited thus far to definitely decide this question. He had noted, however, in several cases of inoperable round-celled sarcomas in which the toxins had been tried and failed the x-ray had caused entire disappearance of the tumors, but there had been a speedy recurrence in every case. On the other hand, in a much larger number of cases of inoperable sarcoma the tumors have entirely disappeared under the toxin treatment and remained well from three to ten years after the treatment. The dangers from this method of treatment are burns, toxemia, and metastases resulting from the cells being broken down and carried to other parts of the body. He did not believe that the x-ray method should be employed in operable cases of sarcoma, with the possible exception of carcinoma of the extremities, in which operation would necessitate amputation. In such cases he recommended a brief course of the combined x-ray and toxin treatment, reporting a case of sarcoma of the fibula which had been treated by this method which had been treated six years ago by the toxin method and has remained perfectly well ever since.

Experiences in the Treatment of Inoperable Malignant Growths by the X-rays.—ALEXANDER B. JOHNSON (New York) reported 10 cases, 9 of carcinoma and 1 of sarcoma; 8 died under treatment and 2 are still alive and have apparently improved, one of them being the case of sarcoma. After a considerable time severe dermatitis was produced in each of these cases, and it was advised the treatment be discontinued at intervals for at least six months. The source of the current was 110 volts, direct commercial current; fifteen-inch spark length, Willyoung induction coil. The distance was at first 12 inches, which was gradually diminished to six as tolerance at that distance became evident on the part of the patient. The surrounding parts were protected by sheets of lead foil weighing 10 ounces per square foot.

Results of 1,000 Operations for the Radical Cure of Inguinal and Femoral Hernia Performed Between 1891 and 1902.—WILLIAM B. COLEY (New York) stated that out of 1,003 cases which he had operated upon between August, 1891, and December, 1902, there 937 cases of inguinal hernia, 756 of which occurred in males and 181 in females; and 66 cases of femoral hernia, all males. In the 66 cases of femoral hernia there was no mortality, and the primary union was obtained in all but one case, which formed the only recurrence, the balance having remained well from 6 months to 11 years. The Bassini method for femoral hernia was employed in 16 cases, and the pursestring suture (with kangaroo tendon) in 50 cases. Out of 181 operations upon the female for inguinal hernia there was no recurrence and no relapse, the method employed being practically Bassini's method for the male. There were no mortalities in any of the 1,003 cases. In children operation should seldom be advised under 4 years, the reasons being that many of the cases at this age are cured by a truss, but after that age in which a truss has been tried and failed, or cases in which the presence of reducible hydrocele prevents a truss from holding the rup-

ture, operation is advised. In all adult cases under the age of 50 years operation is advised unless there are strong contraindications. Between the ages of 50 and 70 years operation is advised in patients in good health in cases in which the rupture is held with difficulty by a truss. Six hundred and fifty of these cases were found well from 1 to 11 years; 708 cases were found well from 6 months to 11 years, and 467 from 2 to 11 years. A careful review of the literature on the subject and a comparison of the results obtained by other operators was given.

Report of a Case of Gangrene of Fifteen Inches of Cecum and Ileum After an Operation for Appendicitis: Relief of Artificial Anus After Repeated Operations.—N. P. DANDRIDGE (Cincinnati, Ohio) stated that on opening the abdominal cavity for the purpose of removing the appendix it was impossible to locate it, but there was discovered a mass on the inner side of the colon above the ileocecal valve, beneath the peritoneum and lying on the psoas muscle and overlapping its inner edge. The tumor was removed after ligating an artery which ran through it and subsequent examination proved it to be enlarged mesenteric glands. This, together with the appendix which was found behind the cecum, was removed, and the wound closed without drainage, after which the patient progressed well until the evening of the eighth day, when the dressings suddenly became saturated with a thin fecal fluid, and were changed, and the same condition was found again the next morning, and on opening the wound gangrenous tissue was exposed, which increased in extent until a day or two later a section of the ileum, nine inches long, was washed out, entirely gangrenous. A complete artificial anus was established, a drainage tube inserted and with this drainage the pus and fever disappeared. At the end of seven weeks a lateral anastomosis between the small intestine and colon was done, in order to partially relieve the artificial anus, but proved to be a complete failure so far as this was concerned. Some months later an end-to-end anastomosis of the ileum and colon was made by the Murphy button, a small fecal fistula remaining in the side. Two attempts were made to close this fistula and a colostomy had added much to the patient's comfort and diminished still more the size of the opening, which was finally closed by means of pressure from an elastic sponge held in place by an elastic bandage around the body.

[To be continued.]

AMERICAN ORTHOPEDIC ASSOCIATION.

[Specially reported for *American Medicine*.]

SECOND SESSION (CONCLUDED).

Bone-wiring for Recent and Ununited Fractures.—S. L. McCURDY (Pittsburg). The frequency of location for delayed union occurs in the humerus, tibia, fibula, radius, and ulna respectively. The causes are: Lack of rest, meddlesome attendants, etc.; too light or too loose bandages; nonapproximation of ends; want of blood supply; defective innervation; bone disease. Treatment: 1. Bone ends freshened (don't saw off ends unless too long) and wire while the ends remain in their normal position, thus preserving the nutrition, preventing necrosis, and guaranteeing union. 2. The use of iron (broom wire) instead of silver wire, because iron is a normal constituent of the body; is therefore less irritating, does not bleach as does silver by absorbing sulfur, is stronger and cannot be twisted, thus never coming loose as does silver. Do not pass the wires directly through the bone, but pass them obliquely in order to prevent injury to the medullary canal. 3. Anchor bone fragments to external bridge work to hold them in position during the process of repair.

An Unusual Case of Pott's Abscess.—S. L. McCURDY (Pittsburg). The case was that of a boy aged 18; abscess of maxillary bone; a secondary infection resulted, destroying the lower cervical vertebrae. A cough developed and soon pus was expectorated. An abdominal abscess pointed and was opened below Poupart's ligament. Repeated irrigations into this cavity with a solution of methylene-blue caused the expectorated pus to be colored upon every occasion.

Discussion.—H. AUGUSTUS WILSON (Philadelphia) recommended a hollow bone-needle constructed by J. Torrance Rugh, of Philadelphia, which overcomes the difficulty experienced by all in passing wires.

A Treatment of Osteitis Deformans and Osteoarthritis.—FRANK E. PECKHAM (Providence). The literature on this subject seems to be largely on the pathology and physiology of the disease, and this paper was written to offer a plan of treatment. Case I occurred in an overseer in a mill. He had a history of a slightly stiff knee for three years, which always became aggravated on exposure to cold. Had been treated for rheumatism. There was good motion, though some atrophy and shortening of 1½ inches. Treatment: Tuberculin was tried twice with no reaction. Actual cautery was then used once a month for a period of one year and in the middle of the month a small cantharidal blister was applied over the spine corresponding to the nerve center for the particular area involved. Prior to treatment the patient had been in bed, but upon beginning treatment he was sent to work, rapidly improved from the start, and is now well. Case II was that of a male clerk, aged 50, with a history of previous good health,

except spraining his knee 12 years ago. In 1898 an inflammation of the periosteum developed. The first symptoms were noticed by his friends, who called his attention to his limping. A slight pain soon began, the trochanter thickened, and there was some shortening. Diagnosis of osteitis deformans was made with the aid of the x-ray. Treatment: Same as Case I, with equal success. Case III was in a motorman, aged 42. In 1902 pain began in knee; one month later patient suddenly fell on the street and was unable to walk without crutches since the accident. There was $1\frac{1}{2}$ inches shortening and a squeaking sound was elicited upon motion. Treatment: Same, and in four months patient was at work apparently well. Case IV occurred in a male, aged 37. Symptoms began with pain in knee in 1898. The legs became bowed; night-sweats developed in 1902; patient lost 14 pounds in weight and was compelled to cross his legs in order to sleep. Treatment: Same. After first application patient said the treatment was too severe and did not return. Case V was that of a male, aged 50. The patient was unable to sleep in dorsal position on account of pain in his shoulder. In 1901 the arm was held rigid and any motion caused great pain. Treatment: Similar for one year. The patient is now recovered, motion being free, except when the arm is raised to over a right angle.

Discussion.—J. E. GOLDTHWAIT (Boston) said it is well known that any counterirritant relieves these conditions and permits motion, but no such treatment changes the course of the disease. He did not believe the cases were osteitis of the hip or rotation would have been impossible. The symptoms resembled those of iliopectineal bursa. In the shoulder case, a change of position with pillow in axilla relieves the condition.

Officers Elected.—President, Reginald H. Sayre, New York; vice-presidents, J. E. Goldthwait, Boston, Gwilym G. Davis, Philadelphia; treasurer, E. G. Brackett; secretary, John Ridlon, Chicago.

AMERICAN DERMATOLOGICAL ASSOCIATION.

[Specially reported for *American Medicine*.]

THIRD SESSION (CONTINUED).

The Present Status of Phototherapy.—F. H. MONTGOMERY (Chicago) said that in the Finsen Institute of 800 cases of lupus vulgaris treated by the Finsen light, marked improvement in 90%, with a cure of 70%, and reappearance in 20%. The recurrence was generally on mucous membrane. Lupus erythematosus and epithelioma have been benefited in nearly all cases with a cure in one-third of them. In alopecia areata, a good result was obtained in 90% of the cases. In acne but a small percent was benefited, as was also true in chronic eczema. One case of lupus erythematosus grew worse under the treatment in the author's own cases. The apparatus has been greatly improved, the light has been increased fourfold, the time and expense has been reduced one-half to what it was in 1900. There are several new lamps now. The lamp most widely used is the London hospital lamp; it is cheaper and requires but 15 minutes' exposure, and an attendant is not necessary, thus reducing the cost. It is most useful for small superficial lesions. In the deeper seated lesions it is not so effective as the regular Finsen lamp. It is ineffective in ringworm, while some good results have been obtained in lupus vulgaris or other tuberculous affections of the face. The crusts should be removed by curet before the light is used. Where old scars exist, thickening or much pigment, the light treatment is not beneficial.

Discussion.—G. T. JACKSON (New York) said that the lenses must be made of rock crystal to be beneficial. He said he had treated two cases of lupus erythematosus, using on one side of the face the London hospital lamp and on the other side used tincture of iodine with quinin internally; the latter has given the best result. He had also used the London hospital lamp in three old cases of lupus vulgaris in which other remedies had been used before, in which there was thickening and cicatricial tissue, with no results. He said he had also used it on three cases of superficial epithelioma with good results. In one case there was entire disappearance on three applications. W. A. PUSEY thought that the rays at the middle of the spectrum were most beneficial while most observers thought the ultra violet rays were best. He said he found best results in treating flat nevi by phototherapy; it is undoubtedly the safest. E. B. BRONSON said he did not think that the ultra violet rays alone were effective, as only one-third of ultra violet rays penetrate the skin, while two-thirds of them are absorbed. This is one reason why the Finsen original light is better than the later lamps, as they are built on the ultra violet light plan almost entirely. He thought adrenalin as used by Farre, to produce ischemia before using the light, was beneficial. G. W. WENDE said that he had used the red light in the treatment of both erysipelas and measles without good result.

Some Precancerous Affections of the Skin.—M. B. HARTZELL (Philadelphia) says that eczema and psoriasis have been known in several cases to terminate in carcinoma. Workers in tar and paraffin very often suffer from a multiform dermatitis, which begins acutely, afterward becoming dry and fissured with a superficial ulceration, a marked hyperplasia of the epiderm. This condition differs in individuals as

some workers are immune and cleanliness plays an important part. Several cases of carcinoma have been reported as a result of this condition. Lupus vulgaris is sometimes followed by epithelioma either in the scar tissue or in the lupus tissue itself. Other tuberculous skin lesions are sometimes followed by carcinoma. Lupus erythematosus is also followed by epithelioma. Tertiary syphilitic lesions have been known to be followed by carcinoma, also many congenital growths, especially warts and pigmented nevi. It is very often in these difficult to determine if they are not carcinomatous from the beginning. About 10% of chronic leg ulcers become cancerous. Cicatrices, especially from burns, are liable to carcinoma. Circumscribed keratoses predispose very much. Arsenic poisoning cases are the most interesting, most begin as a disturbance of the palms about the mouths of sweat ducts. Mackenzie has seen it occur in an individual 15 days after taking arsenic. In chronic arsenic poisoning, warts are very liable to become carcinomatous. Senile seborrhea is the most common of the keratoses which become epitheliomas, pinhead in size, with crust formation, skin under crust moist and red, no subjective sensations, and is most common in those who do manual labor; more frequent in men than in women. They may become superficial papillomatous epithelioma. In three cases of senile keratoses the greatest thickening was at the mouths of the sweat-glands, a disappearance of the granular layer; except about the sweat-glands increase of the rete mucosa. The corium was but little altered, glandular changes were not noticed. The corigrams and ducts showed pathologic changes, a slight increase in the corium layer. X-ray dermatitis as well as psoriasis will be followed in a certain number of cases of cancer.

Discussion.—W. A. PUSEY said that he had seen cases of chronic x-ray dermatitis resembling precancerous keratoses result in epithelioma which developed on the hand and required the amputation of the hand. Xeroderma pigmentosum is also a precancerous affection. In his experience carcinoma was more common after lupus vulgaris than after lupus erythematosus.

THE AMERICAN CLIMATOLOGICAL ASSOCIATION.

Twentieth Annual Meeting, Held in Washington, D. C., May 12, 13 and 14, 1903.

[Specially reported for *American Medicine*.]

Tent Life for Consumptives.—J. EDWARD STUBBERT (New York). After noting the revolution with reference to the out-of-door treatment of consumptives as compared with the former dread of air, and especially cold air and night air, said that this treatment stood alone in therapeutics in that the larger the dose the better for the patient. He advocated sleeping out of doors. This has been very successful in the cure of tuberculosis, as was shown by the history of cases cited. A camp for consumptives is to be established at Liberty, New York, under Dr. Stubbert's direction. In Pennsylvania the Forestry Commission has made experiments on a State reservation at Monte Alto to determine the efficacy of the outdoor treatment, and they have issued a circular letter in which it is stated that any reputable citizen of the State, who is seeking health, may establish himself on any of the State's reservations, so long as he violates no law. Mention was made of the practice of arranging the beds of patients in the Rutland Sanatorium so that they can be extended into the outer air at night. In this practice a curtain is dropped from the lower sash of the window about the neck of the patient, ensuring warmth for the body, while with a cap on the head the patient takes the "cure" during his sleep. In case of rain he can raise the curtain, and without leaving it, roll the bed into the room or the ward.

RICHARD A. CLEMANN presented plans for a cabin for open air treatment. It was shown that tents in ordinary army use are liable to bad ventilation. The air does not pass through the canvas to any great extent. Even a metal gauze is well known to be a complete safeguard, as shown in the miner's lamp invented by Davy. Cleemann's plans showed a cabin erected on four posts. The floor is $2\frac{1}{2}$ feet above the ground. The walls are 8 feet high and three of these are hinged at the lower edge so that they can open outwardly and rest on posts driven at suitable distances. The fourth wall contains the double folding doors which afford access to the interior. The roof, made of boards covered with felt, extends 18 inches beyond the walls. It is peaked and has at its base a horizontal false roof. It is intended that two sides, except in the most inclement weather, shall remain open. It is intended for one person. The cost is approximately \$225.

Discussion.—CHARLES L. MINOR (Asheville) said that he treated a case of tuberculosis at home, in a tent, and found that the results were not good and he accordingly moved the patient to a portico outside of the bedroom and noticed a marked change for the better. F. I. KNIGHT agreed with Minor in preferring barracks or cabins, having found that the air is usually bad in tents, especially when artificial heating is necessary. S. A. FISK (Denver) said that few persons can live in tents in mid-winter, but he affirmed, from having lived in a tent himself, that when one is somewhat accustomed to tent-life and has lived and slept in a tent he does not care to live in anything

else. STUBBERT said that tents when used should be opened sufficiently to provide proper ventilation, the sides being raised during the day and lowered in bad weather only. SOLLY said that it would be an advantage if the walls of Cleemann's cabin were raised instead of allowing them to fall down. It would give more space and better protection. The advantage of a hut over a tent is that the heat and cold can be kept out better. If stoves are used it is liable to be too hot in tents but with the cabins described the heating can be better regulated. MINOR said that in Germany these cabins are made in separate parts and can be shipped anywhere.

THOMAS D. COLEMAN (Augusta, Ga.) read a paper on the susceptibility of the negro to tuberculosis. This will appear in a future number of *American Medicine*.

Discussion.—THOMAS DARLINGTON, JR. (New York) said that he found negroes reluctant to take medicine, and added that in his experience they all had syphilis. THOMAS J. MAYS (Philadelphia) said that both insanity and tuberculosis had become much more frequent in negroes since the Civil war. The order is syphilis, insanity, tuberculosis. MINOR said that he does not believe that there is any racial susceptibility on the part of the negro to tuberculosis. The causes of the prevalent diseases are bad ventilation, late hours, excessive sexual indulgence and bad food. SANGER BROWN (Chicago) said that we can snap our fingers at bacteria if we have pure air and good living, and no matter how we protect ourselves from bacteria if we live in unventilated dwellings, and are not out of doors, and do not have fresh air, we will have tuberculosis. E. R. BALDWIN (Saranac Lake) said he firmly believed in the racial susceptibility of the negro to tuberculosis.

BEVERLEY ROBINSON (New York) opened the discussion on the community and tuberculosis. Dr. Robinson stated that in New York City there is accommodation for approximately 1,000 of the consumptive poor, but requirement for 10,000 to 20,000 more. Tent life was advocated, and the New York Board of Health commended for adopting a method of tent treatment for the consumptive poor in the incipient stage. The amount of exercise incident to camp life is a distinct advantage to these sufferers. The mind is occupied, the body freshened and strengthened. Except in the febrile exacerbations or in cases of extreme weakness there are few instances in which tuberculous patients will not obtain distinct advantages from this mode of life. The cottage tent of Dr. A. M. Holmes was referred to. It was also shown that the widespread fear of contact with consumptives was both fallacious and heartless. The disease is not contagious in the ordinary sense of the word.

[To be continued.]

AMERICAN MEDICAL ASSOCIATION.

Fifty-fourth Annual Meeting, Held at New Orleans, La.,
May 5 to 8, 1903.

[Specially reported for *American Medicine*.]

Section on Surgery and Anatomy.

FIFTH SESSION (CONTINUED).

Cicatricial Ankylosis of the Jaws: A Contribution to Its Operative Treatment.—RUDOLPH MATAS (New Orleans) referred to the difficulty in treating these cases, and reported a case of bilateral cicatricial ankylosis of the jaws in which the mouth was entirely closed, so that a knife blade could scarcely be inserted between the teeth. The condition had existed so long that the teeth had grown inward horizontally and there were bony bands connecting the jaws. A bilateral incision was made from the angle of the mouth and extending outward to the masseter muscles, and the mucous membrane was sutured to the skin. After healing occurred there was considerable cicatricial contraction and it was necessary to reopen the incision and turn up flaps from the neck on either side. The adhesions binding the jaws together were divided with a very good functional result.

Discussion.—MURPHY (Chicago) mentioned a case in which after dividing the mucous membrane and opening the jaws the large raw surfaces on the inside of the cheek were covered by a flap taken from the neck. To insert this flap within the cavity of the mouth an incision was made through the cheek along the anterior border of the masseter and the flap turned up from the neck was passed through this incision and sutured in place. The mouth was then packed with iodoform gauze. A very satisfactory movable jaw was obtained, although a second operation proved necessary. MARTIN (New Orleans) finds that in cases of contracture after injury it is frequently possible to pry the jaws open gradually by using a wedge-shaped piece of wood. He mentioned a case in which he found six months necessary to accomplish this before a movable jaw was obtained. In very bad cases Martin would consider the advisability of excising the lower jaw entirely subperiosteally. MATAS, in concluding, expressed the belief that the results of the operation by Murphy and himself showed very positively the value of plastic flap methods in treating these cases. He doubts whether a very satisfactory jaw would ever be reproduced in case excision was carried out as Martin suggested.

Further Contribution to the Surgery of Undescended

Testicle.—ARTHUR DEAN BEVAN (Chicago) finds this condition relatively common, occurring in 1 out of about 500 men. It produces a good deal of mental as well as physical distress. In a great proportion of cases it is accompanied with hernia, discomfort from pressing of the organ in the inguinal canal, and there is a possibility of malignant degeneration. The results of experimental work were given, which seemed to show that the spermatic artery or veins or both can be ligated without injury to the testicle as it gets sufficient blood supply from the artery of the vas. Bevan finds that the structures which are tense and interfere with bringing the testicle down are the spermatic vessels, and by dividing these he has always found the vas long enough to permit the testicle being brought down. In over 100 operations of ligation of the vein for varicocele atrophy of the testicle has very seldom followed. In his operation he has never failed to find a vaginal process of peritoneum which precedes the hernia. This is excised at the time of operation. The repair of the wound is carried out in these cases the same as for Bottini's operation, and the neck of the scrotum is entirely closed. The results in the cases in which he has operated have been so successful that he now feels that he can confidently advocate the operation. The age between 6 and 10 years is the most desirable for operation, for then there is no interference with development.

Discussion.—ECKLEY (Chicago) drew diagrams illustrating the development of the genital organs in segments. In the process of development the upper segment atrophies while muscular fibers are developed in the lower segment which draw down the testicle. Bevan's paper also brought out the point that the peritoneum descends as a pouch above the testicle, and this seems to be the reason why that undescended testicle and hernia so often coexist. OCHSNER (Chicago): Until Bevan's original paper appeared most surgeons were accustomed to excise undescended testicles. Now it is possible to avoid this in many cases. Ochsner has performed Bevan's operation without success several times, and believes it is a procedure of great value. RODMAN (Philadelphia) believes that this operation is desirable because of its mental effect, because that sarcomatous changes are less likely to result from pinching and irritation, and that the development of the patients will not be interfered with. BEVAN, in closing, stated that in every case of 20, even when the testicle was high up in the abdomen, he had succeeded in bringing it down into the scrotum.

Surgery of the Urinary Tract in the Female, Experimental and Clinical.—J. B. MURPHY (Chicago) states that the conditions which are called upon to treat surgically are pyelonephritis, hydronephrosis, and pyonephrosis. The latter condition results from infection of hydronephrotic kidney. The most striking part of Murphy's communication was his advocacy of the treatment of pyonephrosis by conservative operation. He believes that it is not only desirable to save all the secreting substance of the kidney possible, but the mortality would be much lessened by such conservative methods. If the disease of the kidney is local he advises resection of the diseased portion. He also sometimes excises a part of the pelvis of the kidney with immediate suture. In order to resect the dilated pelvis successfully it is necessary to make a large incision and bring the kidney wholly out of the wound. He reported very good results from his operation.

Discussion.—MCLAREN (Chicago) suggested decortication of the kidney in cases of pyelonephritis, and mentioned cases in which he had seen good results from this treatment. He considered Murphy's suggestion for plastic operation on the pelvis of the kidney a very important one. GOODHUE (Iowa) advocated segregation of urine instead of catheterization of the ureter in cases in which examination of the urine from both sides was considered desirable. MATAS (New Orleans) considered Murphy's suggestion very important, but believed that provision should be made for free drainage in cases in which infection exists. He suggested drainage of the pelvis of the kidney through the cortex until healing was complete. MURPHY, in conclusion, stated that his main reason for advocating a plastic operation instead of nephrectomy was because of the smaller mortality.

Tuberculosis of the Mammary Gland.—A. H. LEVINGS (Milwaukee) considers it strange that tuberculosis of the mammary gland is so seldom seen, since tuberculosis of the other organs of the body is so common. The infection may be either indirectly through the blood current, or he believes that infection is possible by retrograde current from the lymph vessels of the axilla. The condition is confined almost entirely to women, and is not even dependent on any known antecedent tuberculous disease of other parts of the body. Small nodules usually first appear which increase in size, possibly to the size of a hazelnut. Later on they may break down and sinuses be formed. Enlargement of the axillary glands occurs in about two-thirds of the cases. In the diagnosis from scirrhus carcinoma it must be remembered that the patient is usually older in carcinoma, and the breast is much harder. Actinomycosis could be differentiated by the presence of sulfur granules, and by microscopic examination; cysts may be somewhat difficult to differentiate in some cases, but diagnosis may be made by puncture with a hypodermic needle. The condition is chronic, in most cases more so than the other forms of abscesses of the breast. Levings reported seven cases, in three of which both breasts were affected. In the treatment of these cases a single

abscess may be drained or in case the disease is localized to one part of the organ a quadrant of tissue may be excised, or in more extensive diseases it may be necessary to excise the entire organ.

Discussion.—DAVIS (Omaha) had seen only two cases in which the diagnosis was confirmed by microscopic examination. There was no enlargement of the axillary glands in either of these cases; in one case it was necessary to excise the entire breast. MCKNIGHT (Hartford, Conn.) did not consider the treatment by opening and curing the abscess which Levings mentioned suitable as it would tend to disseminate the disease. In closing the discussion, LEVINGS stated that in two of his cases the disease was secondary to axillary tuberculosis, and in one to tuberculosis of the lung.

[To be continued.]

Section on Obstetrics and Diseases of Women

THIRD SESSION (CONTINUED).

A Combined Clinical and Laboratory Study of the Effects of Peritoneal Saline Infusions in Abdominal Operations.—J. G. CLARK (Philadelphia) based his study first on the established fact that there are definite peritoneal currents which waft all minute bodies from the lower portions of the abdomen toward the diaphragm; peritoneal infusions have been used in all abdominal operations. The results of 250 abdominal cases have been studied, and the fact is established beyond doubt that the use of saline infusions does not increase mortality or postoperative complications. On the contrary, the mortality is decreased and postoperative complications, such as thirst, vesical irritation and renal complications, are greatly lessened. A study of a series of animals in which a virulent culture of *Staphylococcus aureus* was employed demonstrated that 1 cm. of undiluted bouillon culture would invariably kill the animal when introduced into the peritoneal cavity; whereas the same amount of culture introduced into the peritoneal cavity and then diluted with 100 cm. of hot normal salt solution resulted in the saving of 48% of the animals and in prolonging the life in lethal cases. Hot salt solution, when introduced into the peritoneal cavity, acts by increasing leukocytosis and diluting the toxic products, thus hastening their elimination.

Discussion.—BOVÉE (Washington, D. C.) referred to a paper which he wrote several years ago in which he took a position similar to the present one of Dr. Clark. There are several reasons for the value of normal salt solution in the peritoneal cavity, some of which are lessened mortality when sepsis is present, a less likelihood of adhesions, stimulation to circulation. The temperature of the solution should not be above 115°. Adhesions have doubtless occurred as a result of too hot a solution. STACEY (Kansas) wished to call attention to the advantage of using normal salt solution by the rectum. The value of employing a temperature above 105° or 106° is not seen. LAWRENCE (Columbus) has noted the sudden appearance of shock when solution at a temperature above 105° or 106° has been used. The lymphatics were likened to scavengers. Sepsis is diluted by the use of salt solution, both in the abdominal cavity and also in the lymphatics. BONIFIELD (Cincinnati) said there was one possible fallacy in the experiments reported. When used, for example, in cases of appendicitis or pyosalpinx, leukocytosis has been under way before operation. In the experiments no such condition preexisted, but the infection was thrown directly into the general peritoneal cavity. The question was raised as to the danger of scattering infection by the use of salt solution, and the necessity emphasized of keeping infection out of the general peritoneal cavity. RICKETTS (Cincinnati) formerly believed all benefits to accrue from the use of salt solution. He now keeps the abdominal cavity as dry as possible. He does not allow a drop of water to enter the cavity, even in ruptured ectopic gestation. He is careful to wall off infected areas. THEINHAUS (Milwaukee) asserted that bacterial infection does not lie on the surface of the peritoneum. If the adhesions are tender he hesitates to wash lest they be broken down. If, however, the infection is general, he washes out freely. SHUMARD (Alabama) cited a case of sepsis from incomplete abortion, in which he had maintained the correlation between the temperature and pulse better by the use of salt solution than by any other method. WAGNER (Chicago) used salt solution freely 8 or 10 years ago. He has abandoned it for the dry treatment. He uses dry sponges. He has had less elevation of temperature; has done five hysterectomies for puerperal fever with good success. Shock is combated by salt solution per rectum. CLARK, in closing, said that the temperature of the solution should not be above 110°, the quantity should not be excessive, one liter preferably. In the case of a walled-off abscess it is culpable to break through adhesions. His dictum as to drainage is, when in doubt do not drain.

Retroversion of the Uterus: A Clinical Study of the Complications, Symptoms and Treatment.—L. H. DUNNING (Indianapolis) said his study is based upon 112 recorded cases of retroversion of the uterus examined in the office of the writer. The study was with the hope that the findings might be helpful in furnishing positive indications for treatment. Of the cases 56 were treated. In 85% of the cases retroversion was but one of three or more pathologic conditions present. Pain was the one symptom almost invariably present. The three

symptoms most prone to persist after treatment are painful menstruation, pain in the inguinal region, and nervousness. Thirty-five cases were treated by nonoperative methods, that is, by posture, tampons, pessary, topical applications and internal medicines. In a few cases a curetage was done. As regards treatment the author of the paper considers his cases under six groups, making an exhaustive study of the series: Group 1. Eight cases treated with tampons or pessary, internal medicines and posture; cured. Group 2. Eight cases, retroversion treated by tampons; benefited. Group 3. Twelve cases treated with pessary, supplemented by medicines and topical treatment; markedly benefited. Group 4. Seven cases not benefited by tampons and pessary treatment. Complications present in each case and failure predicted in most of them. Group 5. Thirteen cases treated by major operative measures, 9 cured and 4 markedly benefited. In 12 of the cases abdominal section was done and one or both ovaries were removed. Ventrosuspension was done in 9 of the cases, ventrofixation in 2. Group 6. Three cases major operations done with little or no benefit. In the series there were two cases in which ovarian tumors produced the displacement, the malposition disappearing on removal of the tumor. Hysterectomy was done in 3 of the cases for fibroid tumors. The conclusions reached in the study are: 1. Simple uncomplicated retroversion gives rise to few symptoms, the chief being backache and bearing down pain. Painful menstruation occurred in 37% of the cases. 2. The severity of the symptoms and the prospect of cure depends largely upon the number and character of complications. 3. The most common complications are prolapse of one or both ovaries, 42%; endometritis, 28%; laceration of the cervix, 24%; prolapse of the uterus, 15%; adhesions, 13%; laceration of the perineum, 7%; movable kidney, 7%; ovaritis without displacement, 8%. 4. In the treatment of the simpler and less complicated cases the nonoperative treatment yields satisfactory results. Recent cases, especially those following labor, improve rapidly under this form of treatment. 5. Displacements of long duration accompanied by the more serious complications are not cured by this method, and the benefits resulting are scarcely sufficient to justify the effort. 6. Operative methods in the severest forms of displacement and complication are attended by a large percentage of cures and should be employed in preference to all other means. 7. The danger of attending the operative method of treatment is very small. In the 24 cases reported there was no mortality.

A Further Report on Operations on the Uterosacral and Round Ligaments for Retrodisplacements of the Uterus.—J. WESLEY BOVÉE (Washington, D. C.). This report includes 17 cases operated upon by each of the two routes—abdominal and vaginal. There has been no fatality or notable morbidity. In shortening the round ligaments the plan suggested by Webster and Baldy has been practised. In all the cases other reparative operations were done. In 9 cases the round ligaments and in 8 the uterosacral ligaments were shortened. In none of the vaginal operations were both sets of ligaments shortened, but in 6 by the abdominal route both were shortened. In the author's paper of last year an effort was made to show the very important part played by the uterosacral ligaments and the anterior vaginal wall or uterovesical ligaments, and of the round ligaments in maintaining the position of the uterus. He has found nothing to modify his views. He has done no other operation for retrodisplacement for more than a year. Ventrosuspension, ventrofixation, and Alexander's operation, all practised without accident, have been abandoned. The reason for abandoning the latter are the reports of a large number of hernias, suppuration and relapses. Attaching the uterus to the abdominal wall is not an ideal procedure. If the lower supporting structures of the uterus be faulty from maldevelopment or injury one must expect failure, as a rule, to follow the operation, and the ligament traversing the peritoneal cavity would seem to be dangerous. Not a few cases of fatal intestinal obstruction have been reported as caused by this ligament, and many cases of cesarean section have been made necessary by this attachment. The results in these 41 cases are nearly perfect. He has determined to examine very critically every patient in which surgical treatment of retrodisplacement is contemplated to decide the exact causes of the real position and to plan the measures to be employed. All pathologic conditions should be recognized and given their proper positions in etiology that treatment may be scientifically applied. Intraperitoneal conditions are best mastered by the abdominal route; adhesions should be severed under sight. The author, therefore, prefers always to open the abdomen when such work is to be done.

[To be continued.]

Section on Sanitary Science and Hygiene.

THIRD SESSION (CONTINUED).

Where Under Our Form of Government Do Public Health Powers Reside, and How Should They be Exercised?—W. H. SAUNDERS (Montgomery, Ala.) stated that in his opinion the exercise of power depends upon the seat of the power. Public health powers should reside in the States. Although the federal government is all powerful in civil matters, it is not essential that such should be the case as regards public health powers. The State has the right of self-preservation, and

the supreme court of the United States has decided that under the tenth amendment to the constitution this power does reside in the State. He cited several opinions in proof of this. However, some public health power should be vested in the national government. In a monarchy the supreme public health power resides in the monarch, but in a democracy it should not be vested in one individual. Our present system is well suited for a monarchical form of government, but not for a domestic form of government, as the people have no voice in regulating the supreme power. This can be overcome by the establishment of a National Bureau of Public Health, composed of medical men exclusively. The county medical society should form the county board of health. The county committee on public health which would have the power of our present boards of health would be elected by the medical society and all the minor offices likewise. Politics should not figure in matters of public health. Over the county board of health there will be the State Board of Health which should be the State medical society. The State Board of Health should elect its State committee on public health, and the president or chairman of this committee should be a member of the Governor's cabinet. Over the State Board of Health there should be a National Bureau of Public Health to act as an advisory board. The members of this national bureau should be elected by the American Medical Association. Every medical officer acting under this proposed system will derive his power from the physicians in the local section. The three essentials for the proper operation of a public health system are skill, executive ability, and money. All three of these would be supplied by the proposed system. The advantages of the system are that the responsibility could always be fixed, there would be cooperation of the several State Boards of Health, and authority would be taken from one man and divided. This system has been working satisfactorily in Alabama for the past six years.

Discussion.—H. A. MOODY (Mobile, Ala.) said that every American citizen enjoys feeling that he has a voice in the government and that he can punish any official for an evil. The control of the State public health should not be vested in one man. With the present system there may come a time when the local man appointed by the Marine-Hospital Service will be obnoxious to the local section and yet the community will have no authority to remove. He does not think that the Marine-Hospital Service should have discretionary powers in the matter of State quarantine. The public health system should be arranged upon a democratic basis and not upon a dictatorial basis. R. D. MURRAY (Key West, Fla.) stated that the local officer appointed by the Marine-Hospital Service can always be reached. A local man is not always capable of managing the quarantine station, as he is apt to be prejudiced by local influence, and for this reason it is best to have a foreign man over the local community. H. D. HOLTON (Brattleboro, Vt.) is of opinion that the scheme outlined by Dr. Saunders is admirable upon paper, but its practical feasibility is doubtful. It is doubtful whether the recent graduate in medicine has the proper knowledge for an efficient public health officer. The foreign quarantine officer is best, as he is less likely to be influenced by local prejudices. The national government should undoubtedly have some power in regulating quarantine regulations. J. M. LINDSLEY (Havana, Cuba) stated that the gulf ports are ports of the entire Mississippi valley and the power of regulating quarantine in these ports should not rest with the State. The present quarantine regulations are too strict. SAUNDERS, in conclusion, said that the theory of a foreign man being the best to supervise local conditions cannot be accepted as true. Under the proposed scheme there would be a city health officer, a State health officer, and a national health officer, and all doubtful cases would come up before this triumvirate. The cost of fighting an epidemic in any locality would be divided between the locality, the State, and the National government. This would stimulate all officers to strict prophylactic measures. The ultimate power would be the Advisory Board of the American Medical Association. The nation has the right to delegate this power. The present scheme has been working since 1897 and since then there has never been a case of yellow fever in Alabama, although Mississippi and Louisiana and Florida have each had their share, and the total cost of conducting quarantine in Alabama for the past three years has been only \$20,000.

The Future of Preventive Medicine.—H. A. MOODY (Mobile, Ala.) believes that about 20% of the population are infected with tuberculosis, and 150,000 persons die of it every year in the United States. Better hygienic measures should be taken with tuberculous patients. Preventive medicine is just starting in its development. There is no known prevention for pneumonia, typhoid fever, and many other diseases. The prophylactic treatment of yellow fever, bubonic plague and malaria has been a great stride in its development. Hydrophobia, which was at one time a very common disease in Germany, is now almost unknown from the fact that all dogs are kept muzzled. The mosquito-bar and wire screens are the muzzles against the mosquito, and the masses should be educated along these lines. The public should be educated, also, in the principles of asepsis and antisepsis. If there can be obtained international cooperation we can rid the world entirely of typhoid fever and tuberculosis. The work should be taken up in very much the same manner and followed with as much enthusiasm as that of the W. C. T. U. The American Medical

Association should appoint a committee to investigate the best methods of accomplishing the desired end, and this committee should report at the next meeting of the Association. The laymen should be consulted and their cooperation sought for. In fact, for the movement to accomplish any good it must be made an international affair. A textbook dealing with preventive measures against disease should be adopted by the public schools, and this book should contain also the elements of pathology, bacteriology and physiology. If the laymen knew more about these subjects there could be no Christian Science and no quackery. It is the duty especially of the Section on Sanitary Science and Hygiene to start this educational movement, and preventive medicine will not be complete until such a movement is started.

Discussion.—SAUNDERS (Montgomery, Ala.) said such a movement is undoubtedly needed and it will surely bear good fruit. There is no doubt but that the public needs education along hygienic lines. G. M. KOBER (Washington) said the American Medical Association already has a committee on public health.

[To be continued.]

Section on Nervous and Mental Diseases.

THIRD SESSION (CONTINUED).

Carcinoma of Spine and Meninges Secondary to Cancer of the Breast.—F. SAVARY PEARCE and A. C. BUCKLEY (Philadelphia). The patient was a woman of 70, a houseworker, who was brought to the Philadelphia Hospital February 8, 1902. At the time of her admission she was practically moribund and a thorough examination was out of the question. The only history obtainable was that for the past three years she had had a lump in one breast, had suffered from vomiting and diarrhea, and had complained of pain over the chest and stomach and in the precordial region. When admitted she had no control over the bowels and bladder. A diagnosis of compression myelitis, possibly due to a metastatic growth, was made. The woman died shortly after her admission to the hospital and the autopsy revealed a neoplasm about 5 mm. in thickness, extending from the tenth to the twelfth dorsal segments of the spine. There was considerable thickening of the dura. The histologic examination proved that the case was one of carcinoma of the spine and meninges, secondary to cancer of the breast.

Some Toxemias in Relation to the Production of Nervous and Mental Disease.—SAMUEL BELL (Detroit) stated that as the result of the advancement made by the physiologic chemist, bacteriologist and pathologist, and earnest workers in laboratories in different parts of the scientific world, new avenues have been opened for those who have been accustomed to study mental and nervous disease largely from a clinical standpoint. Those who have had the opportunity of looking daily on hundreds of cases suffering from the different forms of mental aberration cannot but be profoundly impressed with the importance which somatic conditions obtain in relation to the mental. Although by some investigators there has been a tendency to build up plausible theories that almost all forms of mental and nervous diseases result from some form of autotoxemia, these conclusions did not seem warranted when viewed from the experienced clinician's field of observation.

The Treatment of Emotional Disturbances.—HOWELL T. PERSHING (Denver) stated that emotion is much more than a state of feeling. Intense fear, grief, anger, or even joy begins as a sort of cortical storm which involves an energetic disturbance of the entire body. Such a disturbance may be a very serious or even fatal complication of a preexisting disease. The ways in which a physician may dissipate or control an undesirable emotion may be arranged under the following heads. It is necessary to keep these methods entirely distinct in mind, for although we usually combine them in practice, the combination to be chosen varies greatly according to the nature of the case, and some one method is always the most important and should predominate over all the others: (1) The idea exciting the undesirable emotion should be so far as possible removed and replaced by ideas of an opposite tendency, as when a patient who is frightened and depressed by the idea that he has heart disease is thoroughly examined and positively assured that the heart is perfect; (2) the motor reaction characteristic of the emotion should so far as possible be voluntarily suppressed, and replaced by the motions and demeanor characteristic of the opposite emotion, as when a patient threatened with an hysterical attack forces himself to breathe deeply and slowly, relaxes the muscles and assumes a calm demeanor; (3) an exhausted and irritable nervous system must be rested, built up and soothed, so as to make it less susceptible to emotional storms; (4) poisons which irritate and depress must be eliminated, as in the so-called uric acid diathesis, uremia, diabetes, alcoholism, etc.; (5) a diseased organ which sends abnormal sensory impulses to the cortex and thus causes the feeling of fear or of grief without such mental cause as would otherwise be necessary must receive appropriate treatment, as in certain cases of disease of the heart, stomach, liver, intestinal canal or pelvic organ; (6) other means proving inadequate, a painful emotion may be controlled by full doses of opium, as in the opium treatment of melancholia.

Officers Elected.—Chairman, F. Savary Pearce, Philadelphia; secretary, D. I. Wolfstein, Cincinnati.

Section on Ophthalmology.

FIFTH SESSION.

Officers Elected.—President, R. L. Randolph, Baltimore; secretary, A. E. Bulson, Fort Wayne; delegate, Casey A. Wood, Chicago.

Extraction of the Crystalline Lens in High Myopia.—H. V. WURDEMAN and NELSON M. BLACK (Milwaukee, Wis.) gave statistics of measurements of over 12,000 pairs of lenses and 8,021 eyes in which complete examination under cycloplegic was made, including 34 cases of high myopia. They considered the benefits derived from correction of full refraction in moderate and high myopia generally full correction for distance and weaker concaves for near, in combination with full astigmatic correction. When indicated, prisms or operations on ocular muscles were resorted to. Six eyes operated on for high myopia were selected from the few cases in which correction of the refraction could not be tolerated and who were thereby incapacitated for the ordinary duties. All the operations were successful, patients receiving marked benefit and being able to pursue their vocations. The writers concluded that surgical treatment should be limited to cases over $-12.0D$, who suffer from inconvenience from correcting lenses. Ideal cases for operating were -17.0 to $-18.0D$. The operation was mainly indicated in young adults. Cases having active disease and changes in ocular structures, such as progressive myopia, choroiditis, fluid vitreous, or detachment of the retina, are not applicable. Danger of operative interference was more than counterbalanced by results achieved, that is, increase of visual acuity, extent of visual field, etc.

The Management of Myopia.—J. H. CLAIBORNE (New York) says his present views are based upon the paper of Förster. He approved, as a rule, always under the age of presbyopia, total correction. Exceptions were rare, generally occurring in cases complicated by organic changes at the pole. He thought that careful records should be kept so that the weight of voluminous statistics may be brought forward as evidence. He referred to the rarity of myopic errors in this country as compared with hyperopic ones and considered the advisability of carefully examining the eyes of all children at regular periods, particularly at the age when myopia is apt to arise. He advocated the use of the student lamp and considered the Welsbach too white a light. There should be regular inspection of the schools and proper arrangement of the school-room illumination. Desks should be so arranged that the children would not be induced to bend over. All myopia under the age of presbyopia was vicious and should be handled with much care. After presbyopia myopia had a tendency to decline rather than increase. The author favored total correction of myopia and varied from that practice only under exceptional conditions.

Discussion.—JACKSON (Denver) thought that no hard and fast rule could be laid down as to whether cases were suitable for operation or not. Cases should be repeatedly seen and studied. He had found lenses of 18 and 20 D. worn with comfort for years. The contraindications for operation could not be stated very definitely either. He emphasized the necessity for making a moderate dissection; while it might entail waiting, it was much safer. If there is necessity for removing the lens as soon as possible it would be better to remove it without any dissection. HALE (Chicago) had had 10 cases upon which he had operated and which had not been reported yet, in which the results had been very good. BRUNS (New Orleans): In 2,500 cases of refraction had operated seven times for the removal of the lens in myopia. He considered the great value to be the prophylactic one. He agreed with what had been said about the moderateness of the dissection and considered that it held true of all dissections. A small dissection should be made and then wait until the result is seen—until it is known how the eye tolerates it. FULTON (St. Paul) had been so pleased with the results of dissection that he did not see why linear extraction should be done. MOULTON referred to the necessity of securing the cooperation of the parents in these cases of myopia, to have them provide the children with suitable conveniences for study. DODD (Chicago) had for the past few years given full correction in his myopic cases and found that they were much more comfortable and that the condition remained stationary, while in those not fully corrected the changes were much greater. DE SCHWEINTZ (Philadelphia) desired to go on record, as he had often done before, as advocating full correction for these cases. He agrees with Jackson fully that full correction is the object to be attained for young persons with normal visual acuity and binocular near vision, no matter how high their myopia.

Calcereous Degeneration of Corneal Cicatrices.—H. MOULTON (Ft. Smith, Ark.) considered certain rare types in which lime salts are deposited in old cicatrices in the form of plates or solid masses of considerable size. Two cases were related of adherent leukomata in which deposits were deeply situated and in which the symptoms were neuralgic and asthenopic respectively, and not such as a foreign body would usually excite. Perfecting and lasting relief was obtained by cutting into the cicatrices and removing the deposits.

The Voluntary and Involuntary Brain Centers Controlling the Ocular Muscles.—G. C. SAVAGE (Nashville, Tenn.) considered that the nine volitional centers were each connected with two muscles, one muscle belonging to each of

the two eyes. That five of these centers control the recti and four the obliques. A discharge of nerve impulse (neuricity) for a volitional center is equally divided between the two muscles under its control. If the tonicity of the one muscle equaled the tonicity of the other there would be an even, equal response on the part of both; but if unequal in tonicity the basal center of the weaker muscle acts in order to produce harmony in movement. There were 12 basal or reflex centers, each one of which is connected with one muscle only. That all these were under the control of the fusion faculty and were in no sense volitional. They discharged neuricity only under abnormal conditions and only in the interest of binocular, single vision. These centers became exhausted in heterophoria and excite the sympathy of other brain centers. Cure of heterophoria brought rest to these reflex centers and relieved the symptoms caused by their excitation.

THE WEST VIRGINIA STATE MEDICAL ASSOCIATION.

Thirty-sixth Annual Meeting, Held at Charleston, W. Va.,
May 26, 27, and 28, 1903.

[Specially reported for *American Medicine*.]

President's Address.—H. B. STOUT (Parkersburg) made many suggestions of great importance to the moral and material welfare of the Association. The paper will go down in the history of the Association as one of the most practical and most useful presidential addresses.

The secretary's report showed the Association to be in a prosperous condition and showed clearly that the great strides it has made during the past year were made possible by its partial reorganization at the last meeting. The report closed with the recommendation that the Association undertake to protect its members in suits of malpractice. The Association acted upon this recommendation and adopted the following resolution: That this Association pledges its moral support and will substantially defend any member who shall be sued; and further pledges the services of any and all its members when called upon to attend any trial and testify in behalf of the member sued.

PAPERS AND DISCUSSIONS.

The following papers were read and discussed:

- "The Organization of the Medical Profession," by J. N. McCormack, Bowling Green, Ky.
- "The Constitution and By-laws, with Some Comments and Suggestions," by Wm. W. Golden, Elkins.
- "Puerperal Eclampsia," by E. T. W. Hall, Weston.
- "The Present Status of Serum and Organotherapy," by J. M. Sites, Martinsburg.
- "The Promising Outlook Along Electrotherapeutic Lines," by T. L. Barber, Charleston.
- Symposium on Quarantine; "The Microbiology of the Common Communicable Diseases," by J. Schwinn, Wheeling.
- "The Etiology of the Common Communicable Diseases, with Especial Reference to the Common Methods of Communication," by A. G. Staunton, Charleston.
- "The Management of the Common Communicable Diseases, with Especial Reference to Public Safety," by S. L. Jepson, Wheeling.
- "The Public and the Physician in Relation to the Common Communicable Diseases," by J. C. Irons, Elkins.
- T. L. Barber to open discussion with an illustrated paper on "Uniform Signals of Contagious Disease for State and Nation."
- "Collapse and Shock," by W. S. Keever, Parkersburg.
- "Mastoiditis," by T. V. Churchman, Charleston.
- "Demonstrations of the Value to the Physician of Modern Methods of Diagnosis," by A. Rose, Hinton.
- "The Country Practitioner and What He Can Do for His Patients as a Specialist," by Jno. R. Cook, Fairmont.
- "Dystocia and Its Treatment," by W. H. Sharp, Parkersburg.

Reorganization Completed.—At its last meeting at Parkersburg, W. Va., the Association adopted, with certain modifications, the constitution and by-laws recommended by the American Medical Association for State Societies. One of these modifications was the omission of the House of Delegate feature, on account of the very small number of the county societies then in existence and the lack of self-confidence to be able to organize many such societies before many years. The efforts in this direction during the past year, however, have proved very successful and encouraged the Association to adopt the delegate system for the next meeting, thus making its reorganization complete. To Dr. J. N. McCormack much credit is due for valuable assistance in this matter.

Officers Elected.—President, Dr. T. L. Barber, Charleston; first vice-president, Thomas M. Hood, Clarksburg; second vice-president, Dr. E. T. W. Hall, Freemansburg; third vice-president, Dr. Rolla Camden, Parkersburg; secretary, Dr. Wm. W. Golden, Elkins; treasurer, V. T. Churchman, Charleston. Councillors: First district, C. A. Wingert, Wheeling, and J. W. McDonald, Fairmont; second district, C. S. Hoffman, Keyser, and W. H. Proudfoot, Rowelsburg; third district, W. W. Tompkins, Charleston, and O. O. Cooper, Hinton; fourth district, W. S. Keever, Parkersburg, and H. B. Stout, Parkersburg; fifth district, C. R. Enslow, Huntington, and T. W. Moore, Huntington. Delegates to the American Medical Association, S. L. Jepson, Wheeling, and W. H. Sharp, Parkersburg. Fairmont was chosen as the next place of meeting.

CLINICAL NOTES AND CORRESPONDENCE

[Communications are invited for this Department. The Editor is not responsible for the views advanced by any contributor.]

FEWER DRUGS AND MORE DISCRIMINATION IN THE USE OF THEM: A PHARMACOLOGIC COMMISSION.

BY

BOARDMAN REED, M.D.,
of Philadelphia.

What Dr. J. Madison Taylor wrote in *American Medicine* of April 25 on "The Dangers of Drug Using Without Guidance" I most earnestly endorse. Much harm is resulting both to the medical profession and to the people from the extraordinary multiplication of drug compounds of secret or half-revealed composition and patent foods containing alcohol or other injurious ingredients and pushing them into an extensive use through the medium of physicians in so far as the latter can be induced to prescribe them, otherwise directly through advertisements in the lay press, especially the religious journals.

A few manufacturing drug firms doing a legitimate business have advanced the cause of medical science by pharmacologic researches of real value, but the flood of worthless or downright pernicious products of drug factories on both sides the Atlantic now being poured out upon an unresisting profession and people is a serious danger. The evil is too manifest to expatiate upon and it seems high time that the profession should apply itself seriously to the task of finding a remedy.

One thing which obviously ought to be done is to have a committee, or perhaps better, a permanent commission of pharmacologic and therapeutic experts appointed by the American Medical Association to investigate thoroughly and report every year upon the merits of alleged new remedies. This would cost something, but the profession can well afford to pay the cost rather than see itself crushed between rampant quackery on the one hand and the commercialism of drug manufacturers on the other.

It is true that with a better knowledge and larger employment of more natural and hygienic remedies, such as diet, rest, exercise, water, electricity, massage, and allied forms of mechanical treatment, the use of drugs can and should be much more restricted than hitherto, yet there are many emergencies for which medicines are needed and when we prescribe these we should know accurately what they contain and the action which they exert upon every part of the body in their smallest as well as in their largest doses, the fact being now well established, which was proved conclusively by me in a paper published in the *London Practitioner* for April and May, 1888, that these two ranges of doses are usually contrary to each other in their effects.

Quite as bad as prescribing drug preparations of unknown composition for conditions more or less unknown, because often unknowable, is the reckless administration of remedies, such as acids and alkalies well understood to exert powerful effects in certain directions, in gastric conditions wholly unknown through a failure to make or have made tests which would accurately reveal them. I see every day cases in which serious harm has been done by prescribing hydrochloric acid for a patient whose stomach was at the time secreting twice or thrice the normal amount of the same acid, and other cases in which an alkali has been pushed, while every dose was increasing still further a previous deficiency of gastric secretion. These things should not be.

SOME UNEXPECTED EFFECTS FROM ATROPIN AND BELLADONNA.

BY

S. GLICK, M.D.,
of Downleville, Cal.

Reading Dr. S. E. Ives's description of a case of "Atropin Poisoning from Ocular Instillation" in *American Medicine* of April 4, current volume, I was reminded of my varied experience

with this group of drugs. As county physician it is my duty to treat from 35 to 50 inmates of our county hospital and almshouse. These patients range in age from 60 to 97. Cases of incipient cataract and chronic constipation are always present. Until the cataract ripens for operation the vision is improved by daily or semiweekly instillation of 1 or 2 drops of a 0.4% solution of atropin. After two or three such ocular instillations, every third or fourth patient complains of suppression and retention of urine. The instillations being discontinued, secretion of urine soon returns, but retention remains from three to four days to as many weeks. Quite a number of times in the past seven years I have had the same experience with patients who are given a "tonic laxative pill or tablet" containing 8 mg. ($\frac{1}{8}$ grain) belladonna with fractional doses of aloin, strychnin, and cascara. The directions are to take 1 to 3 at bedtime. They are warned not to take more than three in one day. Yet this small dose frequently produces flushed face, mild delirium, bounding pulse, dryness of mouth and pharynx, dilation of pupil, and suppression of urine. I am beginning to be very careful with these treacherous remedies.

THE ADMINISTRATION OF DRUGS IN TABLET FORM.

BY

LAWRENCE E. HOLMES, M.D.,
of Biltmore (Asheville), N. C.

Some months ago I reported in *American Medicine* the case of a woman in whose intestinal tract five-grain phenacetin tablets remained undissolved for four days, and were then passed by the bowel practically unchanged. Since then I have prescribed drugs in the tablet form much less frequently, though for the sake of convenience I did so in the case of salol and phenacetin tablets (of each 2½ grains) a short time ago. The directions were to take one tablet every two hours. In all, eight were taken. Twenty-four hours after the last one was taken four of them were passed unchanged by the bowel. The others may have passed unnoticed, or they may have been dissolved. Cases of this kind should, I think, be reported, in order to keep before our minds the fact that in spite of its great convenience, the administration in the form of compressed tablets of those insoluble preparations whose constitutional action we desire, is a method always unreliable and may be unsafe.

COMPRESSION OF THE AORTA IN POSTPARTUM HEMORRHAGE.

BY

BYRON ROBINSON, M.D.,
of Chicago, Ill.

To the Editor of *American Medicine*:—Dr. L. D. Sheets,¹ in his report of compression of the aorta in postpartum hemorrhage, appears to conclude that it is the compression or occlusion of the aorta that checks the hemorrhage. The idea of compression of the aorta in postpartum hemorrhage is over a century old, but I think that the result of aortic compression has been erroneously interpreted. It is not the compression or occlusion of the aorta that checks the hemorrhage, but it is the irritation or stimulation of the hypogastric plexus surrounding the aorta which contracts the caliber of the bloodvessels in the uterus that produces the effect. Dr. Sheets noted that "the perspiration dried up." This fact is due to the control of the sudoriparous glands by the sympathetic, stimulating the hypogastric plexus made the system tend to normal as visible perspiration drops is due to disordered innervation. He also noted that the hemorrhage ceased. This was due to stimulation of the hypogastric plexus, which induced the thousands of uterine muscular bundles to contract like elastic living ligatures on the uterine vessels, controlling their uterine lumen.

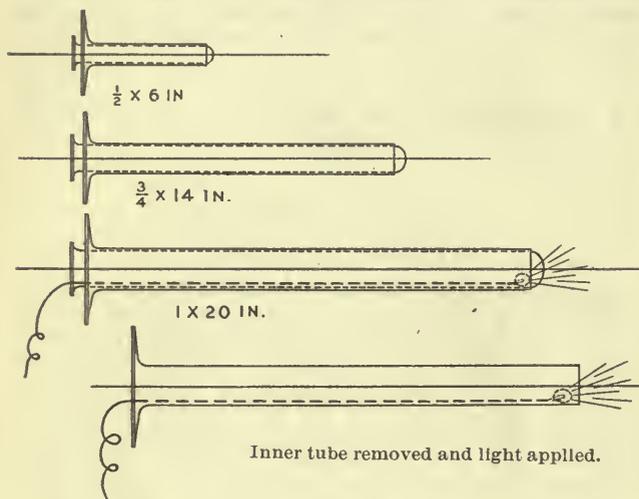
¹*American Medicine*, April 11, 1903.

A NEW PROCTOSCOPE AND SIGMOIDOSCOPE.

BY
F. B. MARSHALL, M.D.,
of Muskegon, Mich.

This instrument consists of two tubes. The inner, fitting closely inside the outer and closed at the distal end, is composed of glass and acts as an entering plug. The outer being open at both ends allows direct application to any part of the bowel explored, when the inner tube is withdrawn and light reapplied. When the instrument has passed the sphincters the inner tube should be withdrawn, to allow atmospheric air to inflate the bowel, and reintroduced before attempting to pass the rectosigmoid valve.

The light in the inner glass tube affords the operator a good view of every portion of the bowel explored and enables him to avoid pushing the instrument against ulcerated surfaces. The metal plug instruments have been pushed through deeply



Inner tube removed and light applied.

ulcerated portions of the bowel, as it is impossible for the operator to see each portion of the bowel before the instrument reaches it.

These instruments possess every advantage of other proctoscopes and sigmoidoscopes, are inexpensive, and can be safely used by the most inexperienced physician.

The patient should have all constriction removed from the waist and be in the knee-chest position. The operator should constantly bear in mind the normal direction of the bowel; through the distal two inches the instrument should be made to pass as though the umbilicus were the objective point, then turned abruptly backward, or rather upward in the proctoscopic posture, into the hollow of the sacrum, the concavity of which is closely followed for the succeeding four inches. The instrument readily enters the sigmoid after passing the rectosigmoid valve.

ESTABLISHMENT OF THE PHIPPS HOSPITAL IN THE FIFTH WARD.

BY
SAMUEL STALBERG, M.D.,
of Philadelphia.

To the Editor of *American Medicine*:—In an editorial in your issue of February 14, 1903, discussing the opposition to the establishment of the Phipps Hospital in the Fifth ward, my name, from its reported connection with that opposition, is mentioned in a discreditable manner. That report, however, did not place my position in its true light, and I wish to say a few words in explanation.

While admitting that I did not favor the establishment of the hospital in that locality I wish to state that my objections were based, not on any fear of the hospital as a source of contagion, but on the following reasons:

In the first place, it will be remembered that it was the intention of the founders of the institution to place it in the midst of a congested district, one in which the proportion of the

tuberculous is notably large. Neither of these facts is true of the present site.

In the second place, it is recognized that in the modern treatment of tuberculosis by means of special hospitals three kinds of sanatoriums are required.

First, mountain sanatoriums for the improved and incipient cases. Such a sanatorium with reference to Philadelphia is that situated at White Haven, Pa., in which, however, patients with more advanced cases are treated also.

Second, one or more "city sanatoriums" situated in the outskirts of the city for the treatment of patients with the more advanced cases and for the preparatory treatment of those to be sent to the mountain sanatorium.

Third, a hospital located in the center of the city to serve as a dispensary; for the treatment of the ambulant patients and their education regarding hygiene; and for the treatment of those patients who for any reason cannot be sent to one of the other sanatoriums. But such a hospital must be built according to modern principles of hygiene and sanitation, which fact not being true of the building selected rendered it, in my mind, unfit for the purpose.

These were the reasons for my opposition which I gave at the meeting, but I am also glad to be able to say that the major part of my remarks was devoted to an exposition of the great importance of the work being done in the treatment of tuberculosis by means of sanatoriums and special hospitals, and of the duty devolving upon all citizens to aid in that great work.

But the fact that I entertained no fears for the hospital as a source of contagion must not be construed to mean that every precaution should not be taken for the prevention of the dissemination of the contagion. On the contrary, though we know that tuberculosis is often not communicated even by intimate contact with the tuberculous, still from what we know of the nature of the dissemination of the tubercle bacilli, viz., mainly through the sputum, dried or in fine spray, such dissemination should be guarded against by the enforcement of modern methods of prevention, including the restriction of spitting by patients in the streets and in the hospital, the destruction of the sputum or its disinfection, etc. According to Knopf, objections to the establishment of tuberculosis hospitals are still to be overcome in parts of this and other countries. These are unfounded, for from the presence of properly conducted sanatoriums there is not the least danger to the neighborhood.

Permit me to say a word in regard to the remark in the editorial that "Two of these persons are said to have the title 'Dr.' before their names." Not stopping to discuss the validity of that title, or whether or not it was well-earned and well-deserved, I yet wish to say that, under the circumstances, that aspersion was unmerited.

PRIMARY VACCINATIONS.

BY
A. L. BENEDICT, M.D.,
of Buffalo, N. Y.

In a vaccination experience of about 1,800 to 1,900 cases, including some 400 to 500 primary cases, I have had no absolute failures of primary vaccination. Of course, I do not allude to the common failure of a first inoculation, from defective virus, error of technic, etc. A few children required several attempts. One boy, G. H., was supposed to be immune to vaccinia, having already been vaccinated several times without success. He was intelligent beyond his years, and willingly reported for observation and revaccination. He was vaccinated two successive autumns, three or four attempts being made within a month or two. The third autumn he was successfully vaccinated, the lesion having every indication of being primary and thus corroborating the history and the lack of scars of considerable size. As nearly as could be determined, he had been vaccinated in all 12 to 15 times before a successful result was achieved. There was no definite history of hereditary immunity either to variola or to vaccinia, nor of actual exposure to smallpox, although smallpox had prevailed to some slight extent in the city. It may be observed that after an unsuccessful attempt at primary vaccination two points were used in every subsequent attempt.

ORIGINAL ARTICLES

SUDDEN DEATH AND UNEXPECTED DEATH IN EARLY LIFE, WITH ESPECIAL REFERENCE TO THE SOCALLED THYMUS DEATH.*

BY

J. P. CROZER GRIFFITH, M.D.,
of Philadelphia.

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The term "sudden" may be used to indicate a death occurring in from a few seconds up to a few hours at the utmost, while "unexpected" may be conveniently applied in this connection to the deaths taking place somewhat more slowly and yet entirely unexpectedly in patients who had previously shown no alarming symptoms or any reason why a fatal issue need be apprehended. Occurring in either of these methods, death is not infrequent at any age, but is especially common in the first two years of life. West reported 627 instances at all ages collected in London in 1854 (Brouardel¹). Of these 272 occurred in children under 5 years old, and in 126 of these the infant was not yet 1 year old. Richter² reported 1,797 cases of sudden death in children up to the age of 15 years occurring during five years. Of these 1,525 were in the first year. The causes are rather different at this early age, however, from those operating in adult life. In later years we find sudden death from such causes as valvular heart disease, angina pectoris and apoplexy predominating. In infants, on the other hand, more prominent among the causes are convulsions, syncope, and especially diseases of the respiratory apparatus.

Doubtless all of us have met with cases in our practice among young children in which death occurred suddenly and very unexpectedly. The reason has often been very obscure or entirely undiscovered. Even an autopsy has revealed nothing in the way of explanation. The child may have appeared to be perfectly well and then died suddenly. In other instances death perhaps has occurred unexpectedly during some disease in which we had no reason to dread a fatal issue, at least at the time. In still other cases it is probable that some condition was operative which, although overlooked by the mother, was of a nature which would have been evident to a physician had one been present. In any event, as the occurrence is most disturbing to the parents, and possibly a cause of reflection by them upon the physician, the matter is worthy of study apart from the natural scientific interest which pertains to it.

We cannot pass in review all the possible causes, but must limit ourselves to some of the more prominent or most interesting of them. The low resisting power of infants and the great excitability of the nervous system are the principal reasons for the occurrence of sudden death at this age. Conditions affecting the *respiratory apparatus* are generally, and with good reason, considered to hold the most prominent etiologic place. *Coryza* occurring in the newborn may rarely be the cause of sudden death by what has been described as aspiration, or swallowing, of the tongue. By the violent efforts at breathing through the mouth the tongue is drawn backward and its inner surface and tip become pressed against the hard palate, cutting off more or less the entrance of air. Death in the same way is said occasionally to occur in young infants with pertussis. Doubtless this accident is not of so frequent occurrence as was formerly supposed, yet apparently death does undoubtedly take place at times in this way, and perhaps oftener than we imagine. Bouchut³ was the first to call attention to this. He has observed it several times and details an interesting case in a child of three weeks where breathing had been badly obstructed by coryza

and where death occurred. Henoeh⁴ describes two cases of the same nature. In one of these instances in order to relieve the condition it was necessary to keep the tongue drawn forward by a catgut thread passed through its tip.

Asphyxia from overlying is a cause of sudden death in infancy which has long been recognized. I may call to your mind, for instance, the judgment of Solomon between the two mothers, one of whom had overlain her own child and claimed as hers the living child of the other. In view of the interest possessed by death from suffocation from a medicolegal standpoint, it is important to bear in mind that asphyxia from overlying or from direct smothering with criminal intent is undoubtedly of very much less frequency than has been commonly supposed. Most infants believed to have died in this way probably owed their death to other causes. We must remember that weakly, and especially premature, children, born with a certain degree of asphyxia, are exceedingly prone to suffer from a fatal relapse after the physician in attendance has supposed that all danger was over. The necessity of constant watchfulness for days in these cases is very great.

Undoubtedly *spasm of the glottis* has appeared to be one of the most prominent and startling causes of sudden death, especially in those infants who have been in apparently perfect health. It may be that we have been warned by previous attacks of laryngeal spasm. In other cases there has been nothing to indicate the danger. The spasm depends on the very great irritability of the nervous system, oftenest seen in debilitated or rachitic children, but sometimes occurring quite independently of such conditions. It is probable that many cases of death attributed to other causes in reality depend upon this. Perhaps still oftener, however, death only *seems* to be the result of laryngospasm, but in reality is dependent upon syncope. There is reason to believe that this is true of many, or even of most, of the cases of death attributed to laryngospasm. This will be referred to again later. I may detail the following interesting history of a case of sudden death from what appeared to be spasm of the larynx:

CASE I.—Hymen Goldstein, 7 months old. Admitted to the Children's Hospital, Philadelphia, January 6, 1902. The history was of a very vague character, the child's mother, who could speak little English, saying that the "child died every day." The child had a convulsion in the receiving ward and another the same night in the hospital ward, the latter of very short duration.

The examination showed a well-nourished child, with the heart and lungs exhibiting nothing abnormal; the fontanel too large and too prominent; blue veins over the scalp; no teeth; beaded ribs; abdomen distended and the veins over it prominent; the spleen not felt, probably owing to the distention. There was also a slight tendency to abdominal tache.

No further symptoms, however, were manifested, and the general condition was excellent until January 12, when at 5.45 p.m. the child, without apparent cause, became cyanosed and stiff, and respiration and the action of the heart ceased. It immediately became relaxed, the cyanosis disappeared, and the pupils became dilated, but the heart failed to respond to active stimulation, and artificial respiration and oxygen were of no avail. During the illness the temperature was about 98°, with occasional rises to 100°.

The characteristic features of the clinical history were the presence of well-developed rickets, and the repeated occurrence of laryngospasm before entrance into the hospital.

The autopsy was of particular interest. It showed the subcutaneous fat well preserved, the blood very dark, the lungs almost airless and deeply cyanotic, the thymus gland hypertrophied, red, with the two lobes overlying the heart, hiding it from view, and extending down to the diaphragm. It measured 8½ cm. in length, 4½ cm. in breadth, 1 cm. in thickness, and weighed 21 grams. There was no evidence of compression by the thymus of the surrounding structures. The trachea was patulous; the mediastinal and bronchial glands slightly enlarged; the liver of normal size, slightly fatty; the spleen enlarged, weighing 34 grams. Peyer's patches were very prominent and the mesenteric glands were enlarged and very numerous, but not caseous. Tubercle bacilli were found in the latter on microscopic examination. The kidneys were dark and slightly lobulated.

The characteristic feature of the autopsy was the general lymphatic enlargement, especially of the thymus gland.

* Read before the Association of American Physicians, May, 1903.

Another very similar case may be detailed:

CASE II.—Steve Lazo, aged 6 months, admitted to the Children's Hospital, February 6, 1903, for convulsions. The child had been having convulsions at irregular intervals since January 1, 1903, and seemed in the intervals to be fretful, and cried a good deal of the time. On February 8 he was noticed to be somewhat rigid, with the thumbs held in the position of tetany. Examination on this morning showed a well-nourished child with the head rather rachitic in shape and with rather large fontanels; some veining of the scalp and at the root of the nose; a moderate degree of beading of the ribs; no enlargement of the wrists; the abdomen somewhat distended with gas; the spleen not felt; a few coarse rales in the chest. No convulsions occurred, but the child did not look well, and on February 11 commenced to vomit its food with considerable force immediately after taking it. On the afternoon of February 13 the child looked better and slept some hours. On waking from sleep at 3 p.m. he exhibited slight twitching of the face, and then immediately developed intense jactitation, as though unable to breathe. A few ineffectual efforts at respiration took place, and the heart beat very feebly and intermittently, and in a few moments death occurred. There was no rigidity or general clonic movements in the attack. Slight fever had been present since the day of entrance.

The autopsy showed the external lymphatic glands of the body slightly enlarged, and the subcutaneous fat well preserved. The tonsils were decidedly enlarged, and the glands at the base of the tongue slightly so. There was slight hypostatic congestion of the lungs; the bronchial and mediastinal lymph nodes were moderately enlarged; the heart appeared normal; there were numerous enlarged glands in the mesentery. The lymphatic tissue of the intestines was hyperplastic. The spleen was moderately enlarged, deep red in color, with the Malpighian bodies increased in number and size. The liver was slightly enlarged; the kidneys normal. The most interesting feature was the condition of the thymus gland. This organ occupied the upper third of the mediastinum and extended downward over the base of the heart, the lower third of it more or less surrounding the great vessels. It measured $7\frac{1}{2}$ cm. in length and 4 cm. in breadth at its widest portion. There was no evidence that it exerted any pressure upon the trachea or other organs.

The main features of note in both cases were the presence of rickets, the history of convulsions, the sudden death, and, at the autopsy, the decided widespread hypertrophy of the lymphatic tissue of the body, and especially of the thymus gland.

In both these cases the condition during life and at and after death corresponds entirely with the condition found in the much discussed "thymus death." Cases of this nature and under this heading have been reported many times in literature, and much has been written for and against the possibility of the occurrence of death due to enlargement of the thymus gland. The literature on the subject is large, and the controversy has been at times very active. An extended review of the whole subject would be of little value in this connection, as it would but repeat what has been well done by others, notably Friedjung,⁵ in an exhaustive and able critical review. Only a very brief review of the subject can be given.

As early as 1614 Plater⁶ called attention to the fact that the thymus was often found enlarged in cases of sudden death. After that the connection was repeatedly referred to, and in 1830, after writings by Kopp,⁷ the belief in the existence of a thymic asthma due to an enlargement of the thymus became general, and the identity of this with laryngospasm was accepted. The extensive investigations of Friedleben⁸ overthrew the earlier views completely. He denied the existence of a thymic asthma, or of any relation between the thymus gland and laryngospasm, and upheld his position so successfully that his views were generally accepted. This state of things continued, and only a few writers held to the earlier views until Grawitz⁹ directed renewed attention to the possibility of compression of the trachea by an enlarged thymus, and detailed two cases of sudden death which he attributed to this cause. Many others followed his lead with cases purporting to be instances of death from pressure, until Paltauf¹⁰ advanced his theory of the influence of the lymphatic constitution, or the "status lymphaticus," in the production of sudden death. According to this view, accepted by Escherich¹¹ and followed by many others, the enlargement of the thymus, as of other lymphatic tissue of the body, is but the ana-

tomical manifestation of a certain disordered constitutional state of a lymphatic-chlorotic nature, which so influences the nervous system that sudden death may occur from the cessation of the heart's action, brought on by very slight and varied causes.

The whole subject is in a state of discussion still, and it seems impossible to reach as yet any final conclusions. At least it seems certain that it is possible for a much enlarged thymus to compress the trachea—or perhaps the heart, large vessels or recurrent laryngeal nerves—and produce death. A case was reported by Siegel¹² from Rehn's clinic, in which there was increasing dyspnea apparently from pressure upon the trachea. Tracheotomy was without avail. The jugulum was then incised, and the thymus found and anchored to the edges of the wound, the symptoms being at once relieved. A very similar case of relief was reported by Koenig,¹³ and still another by Perrucker.¹⁴ A certain small number of cases has been published in which there seemed at the autopsy no doubt that the trachea, the large vessels, or the nerves had been compressed during life. Thus in a case of Marfan's¹⁵ a child of $2\frac{1}{2}$ months exhibited symptoms during 24 hours or more before death; and at the autopsy the trachea was found almost completely flattened by a very large thymus gland. Other cases of death apparently due to compression are those of Clesen,¹⁶ Kruse and Cahen,¹⁷ Kohn,¹⁸ Flügge,¹⁹ Biedert,²⁰ Abelin,²¹ and others. However, in the great majority of cases attributed to pressure there has existed no real evidence either during life or at the autopsy that death was actually produced in this way. This is true, for instance, of the cases reported by Grawitz,⁹ Lange,²² and d'Oelsnitz.²³ It has been assumed merely that because the thymus was found enlarged death must have resulted from its pressure. But if the death is one from pressure on the trachea, the symptoms should have come on more slowly, with increasing difficulty of respiration not relieved by tracheotomy. This is, however, not the usual history. It is characteristic of the truly sudden "thymus death" that the child has previously been in good health or entirely free from alarming symptoms, and has then died quite suddenly as though from laryngospasm or heart failure. To meet this difficulty the view has been advanced repeatedly that the thymus, already hyperplastic, undergoes, for reasons not understood, a sudden congestive swelling, or possibly a sudden increase in size dependent upon its own secretion, and that this gives rise to the pressure symptoms and the immediate fatal ending, which is aided, too, by any bending backward of the head, since this narrows the space occupied by the thymus gland and adjacent structures. Beneke²⁴ reported three cases of sudden death in which he believes that this bending backward was a prominent factor. It is true that the space between the manubrium sterni and the vertebral column is very small—1 to 3 cm. at 2 years of age, Pott;²⁵ 2 cm. at 8 months (Jacobi²⁶)—and that the sudden swelling of the thymus could readily produce pressure-symptoms. But for the view, convenient as it is, that such swelling does or can occur, there is still lacking either anatomic or physiologic proof. Friedleben has shown that the blood-vessels of the thymus gland are comparatively few in number and small, and that no considerable enlargement of the gland through congestion could be produced by experiments on animals. Again, although he shows that under certain influences enlargement may follow from the secretion of the gland, he states that there is no proof that this is of such a sudden and considerable nature that pressure-symptoms can result.

With reference to the existence of the so-called status lymphaticus as an entity and its relation to sudden death only this much can be admitted without question, viz., that in a large proportion of cases dying supposedly of laryngospasm the thymus gland has been found enlarged. The enlargement is not, as a rule, great. Friedleben states that out of 75 such cases there were only 7 in

which the thymus was above an average size. Nevertheless the statistics also show, as Biedert²⁰ points out, that large thymus glands are commoner than small ones in cases of laryngospasm, so that after all some connection may exist. Richter,² on the other hand, found what he recognized as the status lymphaticus with much enlarged thymus in only one of his 1,797 cases of sudden death. Thus sudden death can occur without enlargement of the thymus; and it is noteworthy, too, that in many cases where the thymus had been found to be abnormally large neither a sudden death nor a slower death with distinct pressure-symptoms had taken place. Thus in a child of six months coming under my care in the Children's Hospital and seen at the same time as the infant, Steve Lazo, the death took place after several days of vague symptoms, the most prominent being failing heart strength, cyanosis, a semicomatose condition, and a difficulty in swallowing, dependent apparently upon the mental state or the great weakness. The autopsy showed a widespread bronchopneumonia of a lobar type of both lungs and an enlarged thymus gland weighing 12.88 grams and almost identical in size and in appearance with that seen in the previous case (Steve Lazo), but with little enlargement of other lymphatic tissue except the spleen. In these cases the symptoms were absolutely different from those of the "thymus death" and death evidently resulted from pneumonia.

As regards the possible hyperthymization of the blood or some other form of autointoxication arising from a hyperplastic gland, a theory suggested by Escherich¹¹ and emphasized by Svehla,²⁷ this does not seem to be supported by any clinical evidence. Thiemich,²³ Ganghofner,²⁹ and others express themselves strongly against it.

One fact does, however, remain clear—that there is a certain constitutional anomaly seen in some children, and even in adults, which predisposes to sudden death from trivial causes. It is true that enlargement of the thymus and of other lymphatic tissue is very often seen in these cases, but whether these are accidental accompaniments or not is uncertain. If they are accidental, as seems very probable, then the lymphatic system has nothing to do with the matter, and the name "status lymphaticus," as applied to the constitutional condition, is a misnomer. In other respects, however, Paltauf's views are supported by much clinical evidence and are shared by many writers. The only question is whether the constitutional anomaly rests upon an anatomical basis, either of the lymphatic organs or of others.

This constitutional disturbance depends on a state of faulty nutrition. Not that there is any wasting of the child, but that the condition of metabolism is in some way at fault. It is attended by pathologic disturbances of the nervous centers, giving this system an extreme irritability. The nerves controlling the action of the heart are, of course, involved, as are also to some extent those controlling respiration. It is on this account that many cases suffering from this anomaly exhibit a tendency to repeated attacks of true laryngospasm. The final sudden exitus appears, however, not to be due to spasm of the larynx, although it may so seem, but to a sudden cardiac paralysis, as pointed out by Escherich,¹¹ Pott,²⁵ and others. This appears to be true of the cases I have detailed, the heart having ceased to beat at the beginning of the attack.

The true laryngospasm is probably seldom fatal. In 425 cases of what had been designated as spasm of the larynx, Soltmann³⁰ found a mortality of but 11%. It is extremely likely that many, or most of these fatal cases owed the fatal issue to cardiac failure. Very slight causes are sufficient to produce this sudden cardiac death. Slight traumas are often sufficient, such as the giving of a hypodermic injection, or the puncture-test for a pleural effusion. The much quoted Langerhan's case of death after the injection of antidiphtheric serum is believed by Escherich¹¹ with reason to belong to this category.

Many sudden deaths during general anesthesia doubtless belong here also, as do the sudden deaths of persons in bathing, as reported by Nordmann³¹ and others, and the interesting cases of death after applications to the skin, such as the use of lead water mentioned by Ranke³² and the packing in salicylic acid solution reported by Escherich.¹¹

The condition is a neurosis, but it is not necessarily the so-called status lymphaticus, as Ganghofner²⁹ has pointed out, and as I have already mentioned. The lymphatic overgrowth may probably exist without the neurosis and vice versa, although it is probable that they are generally combined. So, too, rickets is very frequently present also, for the reason that the disturbances in the nutritional condition are liable to produce all three conditions.

The symptoms of sudden death in these cases are very characteristic and very uniform. Often the child has appeared entirely well. In many cases, however, there is a puffy or pasty anemic appearance, and not infrequently the patient is rachitic. Enlargement of the lymphatic tissue of the body may or may not be found. In the great majority of the cases the death is entirely unexpected, and not preceded by any indications of danger. Very often the child is found dead in bed. In other cases there has been striking restlessness before the symptoms immediately attending death have commenced. These final symptoms have been well described by Pott.²⁵ The child suddenly throws back its head, makes noiseless, gasping efforts at respiration, and rolls its eyes upward. The pupils dilate; the face becomes cyanotic and swollen; the tongue is cyanotic, greatly swollen, caught between the jaws and pressed against the hard palate. The veins of the neck stand out as thick cords; the hands are clenched, with the thumbs in the palms and the forearms strongly pronated and adducted; the lower extremities are extended, and the toes adducted and dorsally flexed; the spinal column is arched. There occur slight twitching movements of the face and a few unavailing efforts at inspiration. The convulsions then stop at once, the face becomes ashy, the cyanosis lessens, and in at most one or two minutes death occurs. The action of the heart ceases at the beginning of the attack.

I may report another very interesting case in which death seemed to the attendants to have taken place on two occasions before the fatal issue really occurred. In the absence of an autopsy we do not know with certainty whether the thymus was enlarged or not.

CASE III.—Marie U., born November 16, 1900. When two months old, in January, 1901, while having her nose sprayed with an atomizer she suddenly stopped breathing and became blue in the face. She was carried immediately to the Children's Hospital, which was close by. Sylvester's method of artificial respiration was employed together with oxygen and stimulation. It was only after ten minutes that respiration was again established. From this time on she was troubled with accumulation of mucus in the throat, which appeared at times to interfere with nursing, causing her to choke, although never in a suffocating manner. Any violent attack of crying, however, was liable to bring on a momentary suffocative attack, apparently of the nature of brief laryngospasm. Her general nutrition was only fair, and she cried a great deal, probably the result of hunger. There appeared also to be obstruction to respiration through the nose, which probably accounted for much of the difficulty in nursing. There was also much flatulence.

Under careful management of her diet her weight steadily increased. She was weaned entirely at the age of 5 months and continued to gain and to be in very fair health, except for a constant disposition to keep her mouth open as though adenoid growths were present. At the age of 6 or 7 months she passed successfully through a severe attack of pneumonia, apparently croupous in nature. When a little over a year old, January, 1902, having been apparently well previously, she was taken to a neighbor's house by her mother. While returning she developed difficulty in breathing, became blue, and then ceased to breathe entirely. The attack appeared to be the result of exposure to the cold air. She was again taken to the Children's Hospital, which was fortunately nearby. The same methods were employed as before, but apparently without success, and she was considered dead. Finally, however, by the use of Sylvester's method of artificial respiration and by the

administration of oxygen, with hypodermic injections of whisky, she recovered by the end of 15 minutes, respiration starting of its own accord, and the child's color became normal. From this time she continued in very fair health, except for the positive presence of large adenoid growths, which, however, Dr. Walter J. Freeman, who saw her at the time, feared to remove on account of the suffocative attack at the time when the nose was sprayed. Examination in February, 1902, showed a slight dulness over the upper sternum, indicating possibly an enlargement of the thymus gland, but not being at all conclusive. In July, 1902, she suffered from a slight attack of scurvy.

At the end of October, 1902, being now nearly 2 years old, she developed a bronchitis. A day or two later she developed considerable fever and a remarkable degree of jactitation, with some increase of the rapidity of respiration, although without any other special evidences of dyspnea in the form of heaving of the chest or moving of the alæ. No physical signs of pneumonia could be found. By the next morning she was greatly worse; pale, slightly cyanotic, with numerous scattered rales in the chest. By afternoon she was taken into the Children's Hospital where, in spite of inhalations of steam, the use of atropin, and other appropriate treatment, she grew rapidly worse, and died within 24 hours from the time of the onset. No autopsy was permitted.

The cause of death in this case may possibly have been a rapidly developing bronchopneumonia. Yet the impression at the time was that the child was smothering, in spite of our inability to find in the lungs a satisfactory explanation for this. Pressure by an enlarged thymus may perhaps have existed, but the case is very similar to that of Kohn,¹⁸ in which there was the same great restlessness, and pneumonia was suspected. The thymus gland in his patient was found enlarged at the autopsy, yet there seemed to be no proof that death occurred from pressure. In this case as well as in my own it is probable that the death was due to a heart failure, depending on the neurosis already described, and that the status lymphaticus may have been combined with it.

Sudden death may occasionally occur in *pertussis* as a result of bronchopneumonia or oftener of a spasm of the larynx. Ducastel³³ and others have reported cases of this nature. Death from aspiratio linguæ in this disease has already been referred to. Death may also occasionally take place in infants from *expiratory apnea*, as Kasowitz denominates it.

What is probably a central involvement of respiration sometimes occurs and ends fatally. Sometimes this is seen in children who have the neurotic tendency which might in some cases lead to laryngeal spasm. In such instances the child dies almost instantly, as though from heart failure, and indeed, in some cases, probably from this. In other cases, respiration becomes more and more rapid without other symptoms, and without discoverable cause, and the infant dies in a few hours. It may take place in the course of some other illness or in children not previously sick. An interesting case of this nature, in which the child recovered from a desperate condition, has been reported by Westcott.³⁴ The following instance, in a patient seen with Dr. Herbert P. Fisher, illustrates this condition:

CASE IV.—Wellington H., 10 months old. In July, 1899, he suffered from a disturbance of the bowels in which, although there was diarrhea, the evidence of constitutional involvement appeared by far the most prominent symptom. The stools were offensive, green, not very frequent, and contained some mucus. The child appeared to be improving steadily, when he developed an unnatural drowsiness with slight fever and extremely rapid respiration; the most rapid, Dr. Fisher says, that he has ever seen in any child. There was no cyanosis, and the pulse was not rapid in comparison with the respiratory rate. The child refused nourishment, and lay perfectly quiet except for the rapid breathing. This condition developed in the afternoon and continued more or less during the night with little improvement. Toward morning large watery stools were passed, the result of a purgative given, and the rate of respiration rapidly returned to normal, leaving the child pale and weak, but wonderfully improved at the time when I saw him.

In this instance, although death did not occur, yet it was so imminent that the case may well be used to illustrate the danger of a fatal ending from a central respiratory involvement, the nature of which is not clear.

I may report still another instance in which, unfortunately, the issue was not so happy.

CASE V.—Baby D., first seen December 19, 1900, when 6 months old. The child was at that time in an extremely wasted condition, starving upon a food which was insufficient to support life, yet which had appeared to be the only thing it could take without vomiting or diarrhea. On very careful feeding the baby steadily improved, was bright and apparently entirely convalescent except for an occasional tendency to looseness of the bowels. By the end of February it had gained three pounds in weight. After that there was an inconsiderable loss with rather more frequent movements. On March 11 the child was slightly colicky yet looked well, and I told the parents that I had no further anxiety about it. In the late afternoon of the twelfth it still looked well, and the parents had noted nothing amiss. I observed, however, that the respiration was decidedly too fast. No fever, cough, nor labored breathing was present, and nothing abnormal could be found in the chest. In the next few hours the child failed with extraordinary rapidity, the respiration growing more rapid and shallow. The child died suddenly in the early morning hours of the thirteenth before a physician could be summoned. Percussion of the chest after death showed nothing abnormal. There was no autopsy.

The diagnosis in this case was a respiratory failure from intestinal toxemia, no other cause seeming to suggest itself.

The rapid development of *bronchopneumonia* may sometimes kill with apparent suddenness, the attendant having noticed no symptoms, or the gravity of the symptoms being entirely overlooked. This is of very common occurrence in the newborn. Probably the majority of cases of sudden, or at least rapid and unexpected, death at this age are due to this cause.

Sudden death from *heart failure* is not uncommon in early life. This is not infrequently seen in infectious diseases, especially diphtheria, due to changes in the heart muscle, or to the influence of toxins in the blood. It may also occur in debilitated states or in respiratory diseases, especially pleural effusion, as a result of too sudden a movement, improper position or excitement. I recall a case of severe diarrhea in an infant of less than a year, in which collapse, followed by death in little more than half an hour, appeared to have been precipitated by the careful raising of the infant into the sitting position for the purpose of examining the lungs. Sudden cessation of the heart's action may take place also in cases of acute nephritis on account of the strain which increased arterial tension has thrown upon the heart. So, too, stopping of the heart may occur as the result of distant nervous influences. Thus it is possible that the sudden death in healthy children which has occasionally followed sudden movement or excitement, as, for instance, tossing the child into the air, has been caused by inhibition of the heart's action. As we know, however, that excitement of this nature is well capable of producing spasm of the larynx, it is equally possible that the death may have been due to the latter. In fact, many cases of sudden death placed in other classes might with propriety be considered as due to heart failure.

Sudden death in children known to have *organic heart disease* is probably not so common as in adult life. It may, however, occur where we expect it not at all. The following case is an illustration of this fact:

CASE VI.—Bertha Sweeney, 3 years old. Admitted to the Children's Hospital on November 21, 1901, for genu valgum, the result of well-marked rickets. She developed a scarlatinal rash and was sent home five days after admission. The family physician pronounced it a "baby rash," and the child was readmitted to the hospital about December 2, to be operated on for bowlegs. She had become apathetic and drowsy, and in a few days desquamation was discovered on the body and albumin and casts in the urine, and the child was again sent home on account of danger to other patients. Her heart at the time showed nothing abnormal. On January 11, 1902, she was readmitted. Examination showed slightly cyanosed lips, rapid breathing, some dyspnea and cough, and a few rales in the lungs. The urine did not contain albumin. A double murmur was heard at the cardiac apex, with accentuated aortic and pulmonary second sounds. On January 14, at 9 a.m., after seeming very bright and not at all ill, her heart suddenly ceased beating and failed to respond to stimulation. The only other symptom present was the fact that she had vomited five times during the previous night.

The autopsy showed a considerable amount of clear fluid in each pleural cavity, with some hypostatic congestion of the lungs. The pericardial sac was much distended with clear fluid without evidence of recent pericarditis, but the pericardium was firmly adherent to the upper portion of the right auricle. The endocardium of the right auricle was yellow and fibrous; the lining of the other chambers and of the valves was apparently normal. Death appeared to have been due more to hypertrophy and dilation of the heart than to the existence of actual valvular lesions.

Sudden death in infants with *asthenia* is of comparatively frequent occurrence. It happens often that an infant who has been ill in bed in apparently the same weakly condition which has lasted for days or weeks will unexpectedly be found to have died without any change of symptoms to account for this. This is especially common in cases of premature birth. The autopsy often shows no lesions whatever. An instance of this inexplicable sudden death is the following:

CASE VII.—Helen Elizabeth M., 9½ months old in June, 1902. She had suffered severely from whoopingcough, possibly complicated by pneumonia, several months before. She had recovered from this, but was always underfed, and had not been gaining in weight. There was a constant moaning cry, and the child was evidently starving. Under a carefully regulated diet she steadily and rapidly improved. I had felt all uneasiness about her disappearing, when I was told that she had been taken out in her coach one morning, apparently well, and then died suddenly without discoverable cause. The abdomen is said to have been somewhat swollen on the morning of the day of death, but to no greater a degree than she frequently experienced. There is said to have been slight edema present a few days before death. The weight of the baby when completely dressed with clothes for outdoors was only a little over nine pounds.

It is a noteworthy fact that these wasted infants sometimes gain in weight shortly before death occurs. In such cases the gain may be due to a degree of general edema, depending upon the feeble cardiac power.

I have already alluded to many cases of death, which evidently depend upon disordered states of the nervous system, although exerting their influence upon some special region of the body, as for instance, in spasm of the larynx, heart failure, etc. Still another very common cause of sudden death included among nervous affections is *convulsions*. These are, after all, only a symptom and are in many cases rather the attendant than the cause of the fatal issue. *Hyperpyrexia*, due, of course, to the influence of some agency upon the nervous system, is a not infrequent and very unexpected cause of death, very rapid even if not actually sudden, occurring in children who have been perfectly well or only slightly ailing but a few hours before. This may be seen in heat-stroke in infants and in malignant eruptive fevers and very frequently in pneumonia. As a rule, a general convulsive condition attends death in such cases. The following case, one of heat-stroke, seen in consultation with Dr. W. K. Evans, illustrates this point:

CASE VIII.—James A. H., 2 years 11 months old. On July 14, 1900, he suffered from slight diarrhoea. By July 15 he had recovered entirely. On the seventeenth he was exposed to prolonged heat while playing in the sun during the afternoon of a very hot day. Slight diarrhoea followed with a temperature of 100.4° and symptoms suggesting cerebral involvement. On the morning of the eighteenth the bowels were somewhat better, the abdomen still tender and tympanitic. The child seemed irritable and did not wish to be lifted from the sofa, where he lay persistently on the right side. The temperature was 101°. By afternoon of the same day the condition was much the same. By the next day the symptoms were improved in every particular, and by the twentieth still more so and the child seemed practically well. On the twenty-first there was a relapse with some vomiting and a return of diarrhoea. The mental state became heavy. The child felt the intense heat of the weather very much and sponging and stimulants were used repeatedly. There was no vomiting and the action of the heart was good. By 5.30 the temperature had risen to 106°, and unconsciousness with convulsions developed. The temperature was reduced, but rose by 8 o'clock to 108°. An ice-pack reduced the temperature to 100°, but consciousness was not recovered. The temperature again rose rapidly, attained 108° by midnight, and death took place shortly after.

Death in this case was entirely unexpected. There were really no bad symptoms of any kind until the late

afternoon of the last day of life, when the convulsive and comatose condition developed. The extreme elevation of temperature at 8 o'clock was entirely unsuspected. We were about to give a warm bath for the convulsions when the thermometer revealed that cold water and not hot was urgently needed. These cases of heat-stroke in infants are common. I have seen them repeatedly.

Another case may be related, showing the unexpected death depending on hyperpyrexia in pneumonia.

CASE IX.—Baby V., 3½ months old, had been suffering for a short time from whoopingcough which was not particularly severe. Examination of the chest had revealed what had hitherto not been suspected—that the child was also the subject of congenital heart disease. The physical signs were very positive, the murmurs being loud, yet the baby exhibited no cyanosis. In June, 1896, the child suddenly developed slight physical signs of pneumonia, convulsions and a rise of temperature to 108°. Cold baths were employed and the temperature fell to the neighborhood of 100°. The convulsions ceased, but the child remained weak, and died in an hour or two after the onset of the critical symptoms.

Of course neither of these cases is at all uncommon. I have detailed them merely as illustrations of a condition too often seen.

Convulsions are, of course, due to many other causes than hyperpyrexia. Nervous reflex irritability of various parts of the body may be responsible. All of us, unfortunately, are doubtless rich in experience of sudden death from convulsions in the case of children about whom neither we nor the parents had had the slightest anxiety.

To be classified in diseases of the nervous system are probably those cases in which death takes place in marantic states apparently due to the *depressing effect of chilling* or to a fall of bodily temperature without discoverable cause.

Congenital syphilis is a not infrequent cause of sudden death even in infants which appeared perfectly healthy. This has been emphasized especially by Fournier.³⁵

Rarely asphyxia may result from the *rupture of a caseous bronchial gland* or a *retropharyngeal abscess* into the respiratory tract. This latter has been reported in a good many cases. The symptoms of an abscess of this kind are apt to be overlooked by one who is not familiar with them, and death may take place very suddenly if the abscess ruptures. In other instances death results from *pressure of intrathoracic growths* or enlarged glands upon the pneumogastric nerve. The *aspiration of food* into the windpipe has been assigned as a cause of sudden death. Parrot (quoted by Brouardel¹) has reported a number of such cases. The occurrence probably takes place much less often than has been supposed, and only in the weakest infants in which the ability to cough has disappeared. It seems very likely in the cases where a curd of milk has been found in the windpipe that it has reached this position only because the child was in the act of dying when the final vomiting took place. The same is true of asphyxia from the *entrance of ascarides into the larynx*. Although death has been repeatedly ascribed to this cause, in most instances it is probable that the worms entered the respiratory tract after death. A very interesting case has, however, recently been reported by Wagner³⁶ in which there was no doubt that the sudden death was the result of suffocation from a cluster of ascarides obstructing the glottis.

Gastrointestinal affections seldom occasion sudden death in early life. A number of cases are reported by Bouchut³ and others where sudden death appeared to have been induced by large numbers of ascarides in the intestines. It is probable, however, that this is of rare occurrence.

Various *malformations and accidents* not already mentioned may also produce death. Among these are perforation of the intestines, entrance of foreign bodies into the larynx or trachea, injury from forceps, strangulated hernia, external hemorrhage from the stomach or bowels, and internal hemorrhages, especially in the new-

born. Meningeal hemorrhage is the most frequent form of this latter, but other regions may suffer. I may close with an interesting instance of an entirely unexpected death from hemorrhage.

CASE X.—Baby C., female. Born June 7, 1902. Owing to a contracted pelvis on the part of the mother, the child was delivered presumably at the eighth month, although its well-developed state after birth renders it probable that some mistake was made regarding the exact stage of pregnancy. Labor was rendered difficult only by a remarkable degree of uterine inertia, which made podalic version necessary. The aftercoming head was delivered, however, largely by internal effort. There was a moderate amount of asphyxia present immediately after birth, relieved promptly, however, in a few seconds, and never returning. Everything was favorable during the five days of life, excepting considerable colic with a slight difficulty in nursing from the breast, apparently not due in any way to lack of strength. On the night of the fifth day of life the child cried a great deal, apparently as a result of colic, was fed in the early morning, became quiet, and was laid down asleep in good condition. Shortly afterward, when again lifted, it was found to be breathing its last.

An autopsy showed the peritoneal cavity apparently nearly full of fresh blood. Dr. Alfred Hand, Jr., who made the examination, estimated roughly that "nearly a pint must have been lost." The source of the hemorrhage could not be discovered.

The cause of the hemorrhage in this case is difficult to discover. Sepsis not infrequently occasions widespread hemorrhage in the newborn. There was, however, no evidence of this condition here. In other cases the accident is due to strain put upon bloodvessels during difficult delivery. It seems probable that the case was of this nature. The hemorrhage may take place, primarily, directly into some organ, or secondarily, by bursting from some abdominal organ into the peritoneal cavity. The suprarenal bodies are perhaps the most frequent site of primary hemorrhage.

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THE TOILET OF THE PERITONEUM IN APPENDICITIS.¹

BY

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In selecting the best method for performing the toilet of the peritoneum in operative attacks in cases of appendicitis, the surgeon will be guided largely by the condition of the peritoneum itself. From this point of view the subject under discussion may be divided into the following:

1. Cases in which no peritonitis is present.

¹ Read before the American Surgical Association, Washington, D. C., May 13, 1903.

2. Cases in which the infection of the peritoneum is present, but confined to the immediate neighborhood of the appendix.

3. Cases in which the pelvis is the seat of a seropurulent collection.

4. Cases in which the peritoneum and enteronic areas are the seat of infection (more or less generalized septic peritonitis).

5. Cases in which the entire peritoneum, pelvic, enteronic, and diaphragmatic is involved (diffuse septic peritonitis).

1. *Cases in which No Peritonitis is Present.*—Here the whole matter resolves itself into methods of protecting the peritoneum from infection during the operation, the details of which need not be entered into in this connection. It should be borne in mind, however, that whether the operation be undertaken during the period of quiescence or during an attack, yet, while the infection is still confined to the appendix, the mere fact of the removal of the latter involves opening the intestinal canal and the exposure of the peritoneum to infection from this source. It may therefore happen, from some awkwardly executed movement in the manipulation or other cause, that the peritoneum may become infected from the intestinal canal and render necessary a more than mere protective treatment of the peritoneal cavity.

2. *Cases in which Infection of the Peritoneum is Present, but Confined to the Immediate Neighborhood of the Appendix.*—Cases in this class may be subdivided into (a) those in which adhesions are present without suppuration; (b) those in which adhesions and suppuration are both present; (c) those in which neither adhesions nor suppuration are present.

In the first two subdivisions in this class a tumor will usually be felt before entering the abdomen, and the surgeon's first care upon opening the cavity of the peritoneum will be to safeguard the peritoneum by introducing gauze pads in such a manner as to "pack off" the portions still free from infection. I have not the fear of sublimate solutions in the peritoneal cavity held by some surgeons, and do not hesitate to saturate these gauze pads with a 1-2,000 solution of mercuric chlorid. It frequently happens that a sudden gush of horribly foul and infectious material takes place as adhesions are separated in approaching the appendix. This sometimes occurs with such force and in such quantities as to fill rapidly the gauze pads and even pass through and beyond these before it can be wiped away. In view of this it is only rational that an attempt be made to deprive this material of its highly infectious properties to an extent, at least, by contact with the sublimate as it filters through the pads. I have never seen harm result from the presence of the sublimate, and I think I have seen instances in which this precaution has prevented the spread of infection. If no pus is found, a simple sponging of the cavity in the adhesions in which the appendix lay, after the removal of the latter, with hydrogen dioxid, afterward cleansing this away with sterile salt solution, completes the toilet of the peritoneum. If pus is present this should be carefully removed by means of rapid sponging, the septic cavity from which it escaped treated with hydrogen dioxid, and the task of removal of the appendix proceeded with then, and then only. After the removal of the appendix the question of drainage will come up. This should be decided in each case in accordance with the conditions present. If there be no perceptibly septic conditions remaining, such as sloughing adhesions and slate-colored patches of lymph in the neighborhood; if the stump of the appendix or the opening in the cecum from which it has been removed is well secured, the walls of the latter permitting the application of a purse-string suture or other trustworthy means, then thorough cleansing may be followed by immediate closure without drainage. If, however, the surgeon has any doubt upon either of the points mentioned, he should drain. The point selected

for the drain to emerge, however, should not be through the wound in the anterior abdominal wall, on account of the risks of subsequent ventral hernia which this involves, but laterally, just above the crest of the ilium and well in front of the line where the lumbar fascia joins the internal oblique and transversalis muscles. This will bring the point of emergence of the tube about on a plane half-way between the anterior superior spine and the highest point of the ilium. The track for the tube is made by a stab cut from without; the point for the entrance of the knife within is located by a finger in the peritoneal cavity, which also protects the colon from injury. Before withdrawing the knife a narrow forceps is passed along its blade and in the jaws of this a finger-sized rubber tubing is grasped and drawn into position. The inner end of the tube should project slightly beyond the peritoneal surface. A narrow strip of sterile gauze should be passed through the tube, its inner end resting in the septic space. The outer end of the tube and contained gauze drain should be dressed separately from the wound in the anterior abdominal wall.

When pus is present the patients should be treated in the above manner, particularly if the pus is very offensive or large in quantity. Patients in whom localized peritonitis is present, with neither adhesions nor suppuration, usually do well with removal of the focus of infection, cleansing of the region in which the appendix lay, and immediate closure. This is particularly true if neither gangrene nor perforation of the organ is present. The risks attending the occurrence of the first named are considerable and the attending peritonitis may be slight, moderate, or intense. In either case the damage which has already been done cannot be undone, and, with the removal of the appendix and cleansing of the surroundings, the peritoneal cavity may be closed. The more manipulation exercised at this time beyond that which is absolutely necessary, the more harm will be done, and no amount of drainage will control the spread of the peritoneal inflammation. Much harm may have been done by attempting to pass strips of gauze between coils of intestine in the effort to drain localities in which no fluid exists. The most rational course to pursue under these circumstances is to close the peritoneal cavity when cleansing has been effected, and that without drainage.

In cases of perforative appendicitis, the peritoneal cavity being unprotected by adhesions, practically the same course may be followed. Here, as well as in the case of a gangrenous appendix, isolation of the non-infected area during the operation should be practised. The use of the gauze pads is a necessity, and thoroughly wetting these with sublimate solution adds an additional element of safety. When a perforated appendix is found floating free in the peritoneal cavity search should be made for fecal masses or concretions in the neighborhood. With removal of the source of infection and local cleansing the surgeon has reached the limit of his endeavors so far as the toilet of the peritoneum is concerned. Unless doubt exists as to the closure of the cecum or the integrity of the intestinal wall at this point, the indications for drainage are not present, and this step should be omitted.

3. *Cases in which the Pelvis is the Seat of a Seropurulent Collection.*—It occasionally happens that a seropurulent collection is present in the pelvis in addition to a similar collection immediately surrounding the appendix. It is usually manifested by a sudden gush following the giving way of adhesions between coils of intestine, when there was no evidence of its presence previously. After carefully cleansing the original focus following removal of the appendix, a small bunch of gauze in the grasp of a forceps passed over the ileopsoas muscle and into the pelvis will detect such a collection. Once its presence is detected it should not be ignored. It should be removed by repeated yet gentle sponging with gauze, the intestines being carefully held away

from the pelvic brim and the surgeon's finger guiding the forceps grasping the gauze to prevent damage to the intestines. Following its removal a good-sized glass drainage tube is passed into the pelvis close to the ileopsoas muscle and into this equal parts of a 15 volume solution of hydrogen dioxid and a saturated solution of sodium carbonate are poured. A portion of this is forced out of the tube by means of a piece of gauze grasped in a hemostatic forceps acting as a piston, to cleanse the surroundings. In the male this tube is allowed to remain for 24 hours, or as long as more than a dram of fluid is aspirated therefrom each two hours. This tube is dressed separately and not included in the abdominal dressings and binder. I have known such a tube to be forced upon and produce perforation of the rectum from neglect of this precaution. In females drainage may be advantageously made through the cul-de-sac of Douglas and into the vagina with a rubber tube.

4. *Cases of More or Less Generalized Septic Peritonitis.*—By the term "general peritonitis" is to be understood infection of both the pelvic and enteronic areas. The involvement of such a large portion of peritoneal surfaces brings the surgeon face to face with a very serious condition, and operators differ somewhat as to the course to be pursued in making the toilet of the peritoneum under these circumstances. Most patients in this condition do not bear operative shock at all well, and in general terms it may be said that the less done beyond the immediate requirements of the case the better, namely, the removal of the primary focus of infection—*i. e.*, the appendix—particularly in that class of cases in which the peritoneum presents a coppery hue and but little, if any, fluid is present. In this class of cases the surgeon should feel that he has accomplished much when he has rid the patient of the source of the sepsis, and rest content with this. Here and there he will encounter a case in which intestines considerably reddened, or even but slightly so, will be seen floating in a milky fluid. In this class of cases the patients are, as a rule, not in so desperate a state as those last mentioned, and something further may be attempted for them. It has been my practice in recent years to insinuate gently the point of a Chamberlain tube between the coils of intestines in the direction of the liver and spleen successively, and irrigate the abdominal cavity with warm saline solution. Considerable force is given to the stream by employing a very large tube and rubber-hose connection and elevating the reservoir to a height of eight feet or more. Large quantities, sometimes as much as six gallons, are used. So soon as the fluid returns clear from one place the Chamberlain tube is changed to another, until all parts are as clear as they can be made by flushing. It is not claimed that the cavity of the peritoneum can be thoroughly cleansed by this process, but it is made relatively clean, which is some gain. Again, as much of the saline as possible is left in the cavity, which serves the twofold purpose of diluting the infection which remains and inviting a rapid peritoneal leukocytosis, than which no better bactericidal effect can be obtained.

Eventration for the purpose of more thorough cleansing does more harm than good, and the so-called "scouring" method of ridding the intestinal coils of patches of plastic lymph is mentioned only to be condemned.

Finally, as I have heretofore described and practised,¹ there is something to be gained in this class of cases by placing the patient in a position to take advantage of gravity in causing the fluids in the peritoneal cavity to flow to the pelvis, and at the same time to antagonize the action of the diaphragm in attracting fluids to the upper part of the peritoneal cavity. The large stomata of the enteronic and diaphragmatic areas, which open

¹ Medical Record, Vol. lvii, No. 15, p. 617, 1900; Vol. lvii, No. 24, p. 1029, 1900.

out of the enormous lymph sac which constitutes the cavity of the peritoneum, are not readily closed by the coexistent septic lymphangitis, and their permeability to the passage of septic fluids leads to a transference of these to the circulation with resulting distant infection or general intoxication, or both. On the other hand, the gravitation of these septic fluids into the pelvic cavity results in an environment unfavorable to their absorption. The anatomic peculiarities of the pelvic peritoneum with its capillary lymph vessels is such that, as is well known, septic conditions of the most pronounced character may exist for a long time without grave danger to the individual. These anatomic points have been so well brought out by Byron Robinson¹ that it is unnecessary to dilate upon them here.

5. *Cases of Diffuse Septic Peritonitis.*—Cases in which apparently the entire peritoneum, pelvic, enteronic, and diaphragmatic is involved come under the head of diffuse septic peritonitis. It is probably true that the entire peritoneum is not necessarily infected in these cases, but the fact that all three of the areas mentioned are involved suggests the term "diffuse." The toilet of the peritoneum in cases in which this condition is due to appendicitis consists of removal of the septic focus, as thorough local cleansing as the circumstances will permit, the introduction of a glass drain into the pelvis, and rapid closure of the peritoneal cavity; these constitute the measures with which the surgeon must content himself in the majority of cases. Exceptionally, a patient may be presented in whom all three of the areas mentioned are involved in the infection, and who still may have retained sufficient vitality to justify the surgeon in proceeding further and flushing the peritoneal cavity with the Chamberlain tube and forced irrigation. Even the most favorable of the cases in this class do not bear the shock of intraperitoneal manipulation well, and whatever is done for them must be done as quickly as possible. But haste must not be permitted to give rise to rough manipulation or otherwise careless work. A patient with diffuse peritonitis of appendicular origin who survives after eventration is employed to assist in the cleansing of the peritoneal surfaces would have recovered without this aid. On the other hand, the promptness with which patients have died following this manipulation in my experience suggests to me that this has had something to do with the rapid death, and that the patients would have had an equal, if not better, chance for recovery without the additional shock which this measure entails. Whether flushing is resorted to or not the employment of the elevated head and trunk position, provided too much work is not thrown upon the heart by its use, assists in encouraging the passage of fluids in the upper peritoneal cavity to the pelvic area.

To sum up the subject of the toilet of the peritoneum in appendicitis cases the following propositions may be advanced:

1. In cases in which the infection is confined to the appendix the surrounding peritoneum should be carefully guarded against infection from the opening left in the cecum by the excision of the organ.

2. In cases in which suppurative collections are present the cavity of the peritoneum should be carefully guarded by gauze pads, which may be advantageously wet with 1-2,000 sublimate solution before breaking down limiting adhesions in approaching the appendix.

3. As soon as a pus cavity is opened the septic material should be rapidly sponged away and the neighborhood cleansed with hydrogen dioxid. Following this the appendix should be removed, after which the parts are subjected to a second cleansing process.

4. Outlying infection of the peritoneum may, as a rule, be left to take care of itself after the removal of the appendix and local cleansing.

5. In peritonitis more or less generalized in the pelvic and enteronic areas the method of procedure will depend upon the presence or absence of markedly septic seropurulent material. When the latter is present it should be carefully sponged away. If only thin and slightly turbid this will usually suffice. If, however, this is more decidedly purulent, and particularly if flakes of grayish, slate-colored lymph are floating about in it, providing the patient's condition will permit of it, the infected area may be forcibly flushed with saline solution and drained from the direction of the pelvis, the force of gravity being utilized in the after-treatment to encourage the flow of septic fluids from the enteronic to the pelvic area.

6. In diffuse septic peritonitis the conditions are usually such as to prohibit prolonged interference, and the surgeon will, in the majority of cases, be justified in interference only to the extent of removing the appendix and cleansing locally. In selected cases flushing the peritoneal cavity has advantages. The elevated head and trunk position should be employed in the after-treatment whenever possible. Favorable results from eventration can only rarely be claimed legitimately. Socalled "scouring" of the peritoneal surfaces for the removal of plastic lymph is a most unsurgical procedure.

7. Drainage, when instituted, should be by glass or smooth rubber tubes. Massive gauze packing or multiple and radiating gauze strips placed between the intestinal coils is probably never of real service, and may be productive of harm.

THE ANATOMY OF THE PANCREAS.¹

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In the brief time at my disposal I will review a few facts which have an important bearing upon the physiology and the pathology of the pancreas and will emphasize especially those which as yet have attracted little attention. The pancreas performing a variety of diverse functions is more complex in structure than the other glandular organs which it closely resembles. Pathological alterations have given importance to many anatomical details previously regarded as insignificant.

The earlier anatomists, among them Galen and Vesalius, gave, it seems, little thought to the organ, believing that it acted as a cushion to support and protect the adjacent structures, and it was not until the middle of the seventeenth century that the duct of the gland was discovered by Wirsung, who thus made possible a proper interpretation of its physiology. The organ has since been regarded as a type of secreting gland and to its study we owe many of the facts that have served to explain the process of secretion in general. The socalled salivary gland of the abdomen resembles the salivary glands of the mouth, but the peculiarities which characterize it have been known only since Langerhan in 1869 published his dissertation describing its minute anatomy. Yet until the last few years the histological structures which bear his name have attracted so little attention that their significance has remained obscure.

Few organs are subject to greater variation than the pancreas and of these variations particularly I wish to speak. It will be necessary to refer briefly to the normal embryology and anatomy of the gland. Santorini and subsequent anatomists have shown that it is provided with an accessory duct which, in some cases, can act as an outlet for the pancreatic juice, should the larger duct

¹ Read before the Congress of American Physicians and Surgeons, May 12, 1903, at the session devoted to a consideration of "The Pancreas and Pancreatic Disease."

be occluded. In different vertebrate species and even among members of the same species the ducts of the pancreas vary greatly, and until recently it has been believed that the embryonic origin of the organ is subject to equal irregularity, but evidence that is still accumulating has shown that development follows a plan which is common to all species of vertebrates.

The organ, according to most embryologists, makes its appearance as an outgrowth or bud upon the dorsal aspect of the intestinal canal at a point between the hepatic duct which has already appeared and what will subsequently become the stomach. A little later two additional embryonic buds develop at either side of the hepatic duct upon the ventral aspect of what is now the duodenum. The subsequent history of these rudimentary structures varies in different species. In man one of the two ventral outgrowths disappears, fusing, perhaps, with the other, so that the adult gland is formed by the union of a ventral part in contact with the bile duct and a dorsal part which forms the greater mass of the organ.

In accordance with this plan of development the gland is in most cases provided with two ducts of which the larger, the duct of Wirsung, enters the intestine in company with the common bile duct. The smaller accessory duct, the duct of Santorini, terminates in a papilla situated nearer the stomach than that of the larger duct. I hope I will not seem to cite unnecessarily, well-known facts if I recall the usual relation which exists between these two ducts. The duodenal orifice of the accessory duct is very minute; receiving branches from all sides, the duct increases in size and finally joins the duct of Wirsung, into which during life it doubtless pours its contents. Variations from this normal or usual type have been frequently noted. In many instances the two ducts fail to anastomose; at times that which is nearer the stomach, namely, the duct of Santorini, is larger than the duct of Wirsung; often the duodenal orifice of the accessory duct is obliterated, while occasionally one or other duct has not been found. More surprising, in view of the embryologic relations already described, is the claim that the bile duct occasionally enters the duodenum in company with the duct of Santorini, while the duct of Wirsung enters the intestine at a point more distant from the stomach. In such case the dorsal embryonic bud, in which originates the duct of Santorini, could not have arisen from the duodenum at a point between the hepatic duct and what will become the stomach.

Are the variations to which the pancreatic ducts are subject in the adult explicable upon the supposition that the pancreas develops from three original buds which bear a constant relation to the bile duct? Of more practical interest is the functional significance of the two ducts and their relation to lesions of the liver and pancreas. In order to obtain data more accurate than those at present available, I have dissected the ducts after injection in 100 subjects. The results of this examination, differing in some important particulars from those previously obtained, will be, I hope, of some interest.

Though the ducts varied considerably, there was no departure from the embryologic type already described. Two ducts were present in every instance, but occasionally one or the other was so small that it was found with difficulty. The common bile duct always joined the duct of Wirsung, while the duct of Santorini, unaccompanied, entered the intestine at a level nearer the pylorus. In 10 of 100 instances the two ducts failed to anastomose within the gland, and in 4 additional subjects the two ducts were united by such a minute twig that they might be regarded as independent of one another. In 20 instances the duodenal end of the duct of Santorini was not patent. These figures show that in at least a third of all individuals the duct of Santorini cannot act as an accessory outlet when the duct of Wir-

sung is occluded. Moreover, in a considerable number of specimens the orifice of the duct of Santorini, though patent, was so minute that its functional significance was slight, the accessory duct being functionally a branch of the larger channel. In 11 of 100 specimens the duct of Santorini, on the contrary, was equal in size or larger than the duct of Wirsung, so that during life it was doubtless the outlet for a considerable, if not the larger part, of the pancreatic juice.

Since cholelithiasis and other changes in the biliary passages are frequently the cause of lesions of the pancreas, the relationship of the pancreatic duct to the common bile duct has assumed increased importance. The two ducts usually unite to form a short common channel, the diverticulum of Vater, which is subject to almost as much variation as the pancreatic ducts themselves. I have examined the orifice of the two ducts in 100 specimens. In 11 instances no diverticulum was present and the two ducts entered the duodenum separately at the summit of the bile papilla. In the remaining cases the diverticulum varied in length from less than 1 to 11 millimeters, while in only 30 specimens did this measurement equal or exceed 5 millimeters. The duodenal orifice of the diverticulum of Vater had an average diameter of 2.5 millimeters. The figures are cited to show that unless a calculus, which has become impacted within the orifice, be of very small size, it will completely fill the diverticulum and occlude both ducts that enter.

The pancreas consists of a duodenal part, the head, and a narrower body which constitutes the greater part of the organ and is not definable from the splenic extremity designated the tail. This classical description should, I think, be somewhat altered, for the head, I find, consists of two well-defined lobes corresponding to the two ducts of the gland. The anterior and lower part of the head is tributary to the duct of Santorini and consists of lobules grouped about the duct and its branches. A second lobe is formed by a smaller mass of parenchyma disposed about the duct of Wirsung as it passes through the head of the gland, and is situated behind the larger lobe. In the specimens which I have examined a cleft filled by loose areolar tissue separates the two lobes and is demonstrated most readily after the gland has been placed in a hardening fluid. The adjacent lobular surfaces, when exposed, are as smooth and well-defined as the external surface of the gland. This interlobular cleft, in contact with the duodenum, lies midway between the two pancreatic ducts and its depth depends upon the distance from the duodenum at which the ducts anastomose.

Recent observations have disclosed a fact which, seemingly of little importance, serves to explain the occurrence of certain abnormalities of the gland. Within the papilla of the duct of Santorini, Helly has found in many individuals lobules of pancreatic parenchyma situated immediately below the duodenal mucosa. Occasionally provided with an independent duct which enters the duodenum near the orifice of the duct of Santorini, they constitute a true accessory pancreas. Studying the papilla in the embryo, Helly found that this pancreatic tissue originates at a very early period of development from lateral branches which bud from the duct as it passes through the mesoblastic layers of the intestinal wall.

This process, I believe, explains the occurrence of small masses of aberrant pancreatic tissue embedded in the wall of the stomach or of the intestine at a variable distance from the pancreas. Such aberrant glands are by no means so rare as has been supposed. I have collected from the literature only 22 examples, but in 1,800 autopsies performed in the pathological laboratory of the Johns Hopkins Hospital this anomaly has been observed in 10 cases. Nodules of pancreatic tissue 1 or 2 centimeters across have occupied the submucosa or muscularis of the stomach, duodenum or jejunum. In seven cases the accessory gland was situated above the

pancreas in the wall of the stomach or of the duodenum, and in three cases below the pancreas in the duodenum or in the jejunum. Of some importance, as will be shown, is the fact that in two instances two accessory glands occurred in the same individual.

The earlier writers, notably Zenker, assumed that an aberrant gland arose from an accessory embryonic outgrowth or bud from the intestinal canal. The constancy with which the pancreas of all vertebrates develops from three definitely situated duodenal outgrowths has, however, made it improbable that in man such a fundamental process is subject to variation. At the same time, this multiple origin has suggested that one of the embryonic structures which normally disappears may persist as an accessory pancreas.

In one case from the literature and in two of my cases two aberrant masses of pancreatic tissue were situated either above the pancreas, as in my cases, or below the pancreas, as in the case of Zenker. The existence of more than one accessory gland cannot be explained by the persistence of one or more embryonic structures, for in my cases the pancreas itself had undergone normal development and was provided with two ducts. A more probable explanation is the following: At a very early period of embryonic life a lateral branch of the pancreatic duct entangled in the mesoblastic layers of the intestinal wall is, by longitudinal growth of the intestine, carried a variable distance from the pancreas and a new duct is formed in much the same way that the pancreatic duct regenerates after section. In confirmation of this hypothesis I have found pancreatic tissue in the papilla of the duct of Santorini in two cases—the only ones examined—in which aberrant glands were found in the wall of the stomach, and in one case in which an aberrant gland was situated in the jejunum, that is, below the pancreas, lobules of pancreatic tissue were found within the bile papilla about the duct of Wirsung as it entered the intestine. Here pancreatic tissue has been rarely, if ever, found.

Histology of the Pancreas.—The larger ducts of the pancreas are lined by high columnar epithelium. The cells which form the smaller ducts become lower and finally flat as the secreting acini are approached. The acini are composed of large cells containing zymogen granules which, as Heidenhain has shown, present characteristic variation during different stages of secretion. Within the lumen of each acinus Langerhans found cells which resemble those of the terminal ducts and represent, as it were, an invagination of the duct into the lumen of the acinus. The nature and the significance of these centroacinar cells is not known. Of greater importance are the structures to which their discoverer's name has been given, the so-called islands of Langerhans.

Scattered among the secreting acini, several times the size of a single acinus, they are round or oval bodies composed of polygonal cells grouped together to form short, tortuous columns, which unite with one another in such a way that space is left for a network of wide capillary bloodvessels. If the bloodvessels of the pancreas are injected, glomeruli of tortuous dilated capillaries represent the capillary vessels of the interacinar islands, and though they have a superficial resemblance to the glomeruli of the kidneys, unlike the latter, they freely communicate by numerous anastomoses with the capillary network of the surrounding tissue.

The interacinar islands have been found in many species of mammals, birds and amphibia. For a time it was claimed that certain species did not possess them, but extended comparative studies have demonstrated the occurrence of analogous structures in all higher vertebrates and in a constantly increasing number of reptiles and fish.

The embryological studies of Laguesse and others have shown that the cells which form the islands of Langerhans have a common origin with those of the

secreting acini, and in the syphilitic pancreas of the fetus I have found that the columns of the island as a result of retarded development are continuous with the small ducts of the gland. When, however, the organ has completed its development the islands are wholly independent of the secreting elements, and it is not possible to trace a communication between the ducts of the gland and the interacinar islands.

The islands of Langerhans consist of columns of cells in intimate relation to a rich vascular supply and, having no communication with the pancreatic ducts, resemble in structure certain ductless glands, the parathyroid bodies and the adrenal glands and somewhat less closely the thyroid glands. Common to all vertebrate species, they doubtless have some important function. Independent of the secreting elements of the gland, they are not concerned in the elaboration of the pancreatic ferments. The relation of their cells to a rich vascular supply suggests that their action is through the medium of the blood. Abundant evidence in accord with these facts has shown, I believe, that the islands of Langerhans exert that influence upon carbohydrate metabolism which was formerly attributed to the pancreas as a whole.

In the human pancreas as in the human liver the lobules of the gland are not sharply defined, but in certain lower animals they are more clearly outlined by septa of connective tissue. In the pancreas as in many other organs the smallest lobule constitutes a unit of structure which repeats itself throughout the parenchyma. In the pancreas of the cat, for example, such a lobule outlined by connective tissue consists of a group of acini drained by a single duct; in some parts of the gland every lobule contains near its center an island of Langerhans. From the small arteries and veins which lie in the periphery of the lobule capillary vessels penetrate between the acini; several wide capillaries supply the rich vascular network of the island of Langerhans.

In man the individual lobules are often so fused together that their outlines are not discernible, but in general the same plan of structure exists. Of some importance is the fact that islands of Langerhans are not equally abundant in all parts of the gland. Actual count demonstrates that they are about three and a half times more numerous in the splenic extremity of the gland than elsewhere. In the pancreas from different individuals, moreover, the number varies considerably, and it is possible that in some instances as the result of a congenital defect the interacinar islands are too few to exert a normal influence on carbohydrate metabolism. In the pancreas of a child who died with diabetes the number of islands of Langerhans was almost a third of that usually present; the disease in this case was hereditary and affected six members of the same family. It suggests the possibility that diabetes may occasionally be the result of a congenital anatomical defect in the gland. The evidence in favor of such an hypothesis is at present inconclusive.

In conclusion, I may say that two anatomical peculiarities of the pancreas, I believe, have not as yet received the attention they deserve from the physiologist, the pathologist, and the clinician. In the first place, the organ consists of two functionally diverse elements—on the one hand cells which supply to the intestine important digestive ferments, and on the other hand cells having no communication with the ducts of the gland but in intimate relation to the bloodvessels. In the second place, the close anatomical relation of the pancreatic duct to the common bile duct favors the transmission of morbid processes from the liver and bile passages to the pancreas.

To Assist in War Against Tuberculosis.—Charities states that one of the large manufacturing companies in the Argentine Republic has joined the antituberculosis crusade by sending out 3,500,000 boxes of matches each labeled with special instructions relative to the prevention of tuberculosis.

MANAGEMENT OF MALIGNANT DISEASE OF THE UTERUS.

BY

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Medical opinion is prone to move in waves, which are either too high or too low. A note of unwarranted pessimism has been recently struck as to operative treatment of uterine cancer, especially cancer of the cervix. A few men have mourned that nearly all their patients operated on more than two years are dead. The inference that malignant cases are practically unbenefited by surgery is totally unjustified. Hysterectomy for cancer of the body of the uterus is well known to give many years of freedom from recurrence if not permanent cure; but even epithelioma of the cervix, if taken reasonably early, will give operation results by no means discouraging. There is much to show that metastases and gland involvement are relatively late in this disease. Dr. Thaddeus A. Reamy at the 1903 meeting of the American Gynecological Society voiced this view and cited cases. To be sure, where one patient applies to the operating gynecologist in an eradicable stage, three patients come with bladder, rectum and broad ligaments involved by extension, but that is not the fault of the disease. It is partly the fault of the reticence of patients and partly the fault of physicians of all schools. The pitiable histories of the consulting-room show that physicians today are treating with ergot and hydrastis by the year patients in middle life who show increased average bleeding; not in honest doubt over an obscure diagnosis made after reasonable effort, but totally without examination, to say nothing of fair study; though the changes in those particular cases may be gross, and need only a touch or a glance to be recognized. Of course, not all bleeding cases are malignant; witness three private cases:

Z., aged 48, sent by Dr. J. B. H. Gittings. Hemorrhage, palpator. Examination, gangrenous intrauterine fibroma. Removal from cavity; cure.

Y., aged 70, sent by Dr. Longnecker. Soft bleeding mass. Examination showed a polypus long enough to chafe and bleed. Removal; cure.

X., aged 30, sent by Dr. John B. Roberts. Soft bleeding growth of cervix. Microscopic examination, benign papilloma. Excised, cauterized, cured.

It may be worth while to review the principles which may guide us in the management of suspected or proved malignant disease in its various stages.

Diagnosis.—The time has passed when the diagnosis of malignant disease should be expected to rest upon the fully developed series of classic symptoms formally described in textbooks. After a patient has shown emaciation, cachexia, and suffers severe pain of a lancinating character, after the odor of decomposition becomes prominent, and hemorrhage severe and continuous, the tyro may make the diagnosis; and, unfortunately, so far as the patient is concerned, there may be little difference whether it be made or not. It is too late. The only hope of permanent cure is in the early diagnosis at a time when only one of these symptoms may be present, or when no one of them has become marked. The keynote of the whole subject is investigation with the aid of the microscope.

Examination.—If there is cancer of the body of the uterus, absolutely nothing can at first be detected by the eye or hands except possibly slight enlargement of the organ. The cervix will be normal, the uterus entirely movable; there will be no gland involvement. If there is excessive bleeding cureting must be done, and the material obtained examined by a competent pathologist. This treatment is indicated whether the disease proves to be malignant or not. Should there only be hypertrophic glandular endometritis, which is a very common cause of hemorrhage in middle life, there is no treat-

ment so likely to prove quickly and permanently helpful as cureting, and no condition in which office treatment is as useless. It is just at this point that the ideas popularly prevalent among both patients and physicians have been responsible for the long array of patients dying with hopeless cancer when they come to the hands of the gynecologic operator. The old idea that abnormal symptoms, such as excessive bleeding or discharge occurring in a woman after the age of 35, may be due to an approaching menopause, has long since been exploded, but it is still responsible for thousands of deaths. Let the truth be appreciated and acted upon that any average loss of blood continuing for several months, near the menopause or not, which is greater than the normal average of that individual judged by her earlier life, is pathologic and not physiologic, and calls for rigid explanation and immediate correction. If this be done, half the problem of the successful management of cancer will be solved. The physician who waits to add to the symptom of hemorrhage the odor of necrotic material before making an investigation is oftentimes responsible for the patient's early death. She comes to him with the diagnosis ready made by herself and friends that it is the menopause, but the responsibility for better knowledge is his.

Prevention.—Much may be done toward the prevention of cancer by the repair of serious injuries to the uterine cervix and by the correction of its gland degenerations. When these injuries are repaired, systematic examination of the removed tissue will occasionally discover an early malignancy, when a more radical operation can be performed. The repair of slight tears of the cervix, when no degeneration of the uterine surfaces exists, may be rightly termed meddlesome surgery, but, on the other hand, the obligation is strong to remove degenerating surfaces and cicatricial tissue when irritated. The cureting of hypertrophied tissue, which is causing hemorrhage, is also in the direct line of prevention of adenocarcinoma of the uterus, as the malignant disease is often engrafted upon a perfectly benign adenoma of the endometrium. I have had several cases in which there had been excessive bleeding for many years, evidently from benign forms of gland degeneration of the endometrium, and in which this subsequently assumed the cancerous form. In the same microscopic slide may be seen benign adenoma and malignant adenoma side by side. Should cureting fail to cure in these apparently benign cases, it should be repeated persistently, as the beginning adenocarcinoma may occupy but a small portion of the endometrium. The first examination may therefore fail to show the more important disease simply through taking up the wrong piece of removed tissue.

Operable Cases.—All cases are suitable for hysterectomy and complete removal of broad ligaments, tubes and ovaries, as much cellular tissue as is possible about the uterine attachments, and a portion of the upper vagina, when the disease is apparently confined to the parts mentioned. When the broad ligaments are evidently infiltrated out to the pelvic wall, thereby restricting the movements of the uterus, the prognosis is not so good as to return, but the operation should still be undertaken if the diseased tissue can all be removed. The actual cautery should be deeply and thoroughly applied to all accessible parts of the growth before a tenaculum is introduced or any other instrumental traumatism is produced. The vaginal attachments also should be seared by the cautery, and as much of the other structures as the proximity of bladder, ureters and rectum will admit. If the electrothermostat is used, additional cauterization with a fine point should be given to the vaginal attachments in front and behind, where the action of the thermostat is ordinarily wanting. In cases in which a large amount of new tissue presents in the vagina, this should first be thoroughly removed, using the cautery as a knife, preferably several

days before the hysterectomy. If this is thoroughly done necrotic material is entirely removed, and it is possible to do the major operation through apparently healthy tissue, in this way greatly lessening the risk of dissemination of cancerous infection into fresh surfaces. This risk of infection appears to be real, however little we may know of its actual method of working. The importance of this preliminary use of the cautery is insisted upon because in my experience those cases have shown the longest immunity from recurrence under otherwise unfavorable circumstances in which this was carried out, and because the whole trend of surgical experience in combating cancer shows that the cautery is our most effective weapon against the disease. The best statistics of results of a reliable character, that is, which have covered a sufficiently long period of years to be conclusive, have been those of Dr. John Byrne, of Brooklyn, N. Y., whose method of operating upon cancer of the cervix, which is confessedly the most difficult to cure, consisted wholly of the removal with the cautery, and without a cutting instrument, of the upper vagina and as much of the uterus as possible without opening the peritoneum. These statistics have been unimpeached and far surpass in low immediate mortality and freedom from recurrence those in which the cautery did not figure. That it is the cautery and not the extent of tissue removed which gives the improved results is shown by the fact that in his system less tissue is removed than in several methods of either abdominal or vaginal hysterectomy. Vaginal hysterectomy for cervical cancer has been much practised, and it was the comparatively unsatisfactory results from this method which led to the introduction of hysterectomy from above the pubis, and later to those extensive dissection operations which called for the removal of pelvic lymphatics behind the pelvic peritoneum and in the neighborhood of the iliac vessels. The poor results were due to the difficulty in removing a sufficient amount of tissue at the vaginal junction, and probably not to any less amount removed from inside the pelvis. By a well conducted vaginal operation quite as much of the broad ligament is removed by the necrosis which follows the clamp method as is usually removed from within the abdomen by ligature. Later experience with the extensive intrapelvic dissection operations has not demonstrated their value. The high primary mortality, the liability to postoperative complications, and the failure to get improved results as to recurrence, are rapidly placing them on the retired list, even in the hands of some early enthusiastic workers in that line. In some cases of epithelioma of the cervix, well marked and microscopically identified, cure has resulted from removal of the cervix alone under cautery methods. This in itself shows that gland involvement is not always present, and if present may be late, and it gives encouragement for the use of surgical methods at the earliest possible moment, and later on whenever all of the disease is accessible. As to technic I prefer to begin by the vagina, destroying all accessible tissue by the actual cautery as described, ringing the upper vagina with the cautery, and carrying out the earlier dissections from below, then opening the abdomen and separating uterine attachments, cautery methods being used whenever possible. Through the abdominal incision any accessible nodule of disease at or above the point where the ureter passes the cervix may be more readily reached. In cases of adenocarcinoma of the endometrium, the so-called cancer of the body of the uterus, and in very early conditions of epithelioma of the cervix, in my opinion the abdominal operation presents no advantages over the vaginal when properly carried out, except that it gives an opportunity for inspection higher up and for dealing with bowel or bladder disease. In other words, in a case so far advanced as to require extensive pelvic dissection for removal little benefit will ensue from any operation.

The limits of this paper will not permit further discussion of details of technic. The position is taken that each case must be managed according to its peculiarities, but in general both the vaginal and abdominal routes should be adopted as has been stated. The experience with some of my own cases of vaginal hysterectomy combined with cauterization has been so favorable that I do not share the pessimism which some operators express. This better experience is credited to the physicians who have referred to me early cases. In vaginal hysterectomy for very early cases of carcinoma of the cervix, in which the cautery can first be freely used, the mortality will be probably not over 2%, while the late results will be good.

Six illustrative cases may be cited, all private patients and carefully observed:

CASE I.—Mrs. H., aged 54; seven births, three miscarriages; epithelioma of the cervix. Operation April 4, 1896 (*Therapeutic Gazette*, October, 1896). Entirely well June, 1903, seven years afterward, as shown by examination. The epithelioma, which was microscopically demonstrated in the laboratory of the Methodist Hospital, was around the external os uteri, the furthest infiltration extending on the left side about a half inch into the lower lip. There were three easily bleeding warty projections just at the edge of the os. The vaginal portion of the cervix was not diseased except at these points. Thorough preliminary cauterization of the diseased area with the thermocautery was done, followed by vaginal hysterectomy, ligation method. Though the patient had a decided mitral murmur, the pulse at the close was 86. There have been no signs of recurrence, and the patient is now living in excellent health near Philadelphia.

CASE II.—Mrs. E., aged 39, one child. Referred by Dr. W. R. Hoch. Malignant adenoma of cervix uteri and of posterior vaginal wall at the point of contact with the diseased cervix. Operation: thorough use of thermocautery, followed by vaginal hysterectomy and excision of the diseased vaginal wall. Microscopic diagnosis by Drs. Edsall and Cattell. An area of disease 2 cm. in diameter involved both cervical lips. Operation February 13, 1897 (*Medical and Surgical Reporter*, April, 1897, case 29). A slight recurrence in the vaginal wall was cauterized nine months later with the Paquelin cautery without perforating the rectal wall. Since then she has remained in perfect health, now more than six years, and was examined recently. She weighs 160 pounds and performs the duty of postmistress in a small city.

CASE III.—Mrs. W., widow of a physician, six births. Sent by Dr. R. J. Phillips. Microscopic diagnosis by Dr. D. L. Edsall, squamous epithelioma of cervix. Vagina involved all around cervix, broad ligament slightly. Operation April 7, 1898: cautery to vaginal attachments and growth, followed by vaginal hysterectomy. An examination February 13, 1903, showed the patient entirely free from recurrence, five years later.

CASE IV.—X., aged 45, single. Microscopic diagnosis, malignant adenoma of cervix. Operation: cautery and vaginal hysterectomy, October 5, 1898. Frequently examined since. Now well, free from recurrence, and working as a trained nurse, four and one-half years later.

CASE V.—Mrs. S., aged 71. Microscopic diagnosis, carcinoma of body of uterus. Operation December 5, 1899, vaginal hysterectomy. Two months ago reported to be free from signs of recurrence. Private patient. Living out of city, constantly watched by physician; not examined by me. Time since operation over four years.

CASE VI.—Mrs. B., aged 66. Sent by Dr. M. K. Elmer, of Bridgeton. Persistent bleeding. Small growth of the cervix. Microscopic diagnosis, carcinoma (Pathological Laboratory, Presbyterian Hospital). Operation: combined vaginal and abdominal hysterectomy, June 19, 1901. Well. I had also removed a papillomatous cystoma of her left ovary in September, 1898.

Another class of cases may be cited as illustrating the prolongation of life in epithelioma of the cervix of apparently hopeless character:

Over four years ago Dr. Wm. G. Porter, of this city, sent to me the wife of a friend who had been under the care of other physicians for severe hemorrhage due to epithelioma of the cervix. The patient was in bed, extremely weak from long continued hemorrhage, suffering much pain; she had been advised against operation by her previous attendants, who were of another school. A large, soft, friable mass of cancerous tissue, more than three inches in diameter, tightly filled the upper vagina, making it impossible to outline the cervix uteri from which the growth took its origin. Profuse hemorrhage followed examination, and though it was impossible to determine the exact limits of the disease, the case was considered unfavorable for radical operation, both on account of heart weakness and of the probability of speedy recurrence. With the object of arresting hemorrhage and giving temporary relief, in January,

1899, with the assistance of Dr. Porter, I rapidly removed the fungating mass which sprang from the cervix, and thoroughly and deeply cauterized the uterine tissue up to the limit of safety of neighboring organs. When the parts had partly healed and contraction had occurred the uterus was found so movable, and so little infiltration of surrounding tissue was present, that hysterectomy, at first seemingly impossible, was determined upon. Owing to my illness it was carried out at my request by another surgeon, who used the vaginal method. I met this patient on the street a few days ago, looking entirely too stout for comfort, and, except for neurotic symptoms, in very fair health. She passed from under my care and has had various ups and downs in the four years since operation. She had at one time an abscess to the right of the uterus supposed to be appendicitis, but while no return of the cancerous growth has, I am told, been demonstrated, the chances are that she has it. That a patient apparently dying of cancer of the cervix should be fat and healthy looking four years after is in itself a vindication of the operative treatment of an apparently hopeless case. In my judgment the crucial element in the management of this case was the thorough use of the Paquelin cautery about two weeks before the hysterectomy.

Unfortunately, patients whose cases are as advanced as this usually die rapidly from hemorrhage or exhaustion in a few months no matter what treatment is adopted, but the case illustrates the point previously made that in certain patients, even with extensive disease of the uterine cervix, metastasis to neighboring glands has not occurred, and a radical local treatment will produce marvelous results. The cases in which these good results will follow cannot be determined beforehand, but they occur with sufficient frequency to encourage radical operation in all cases in which all visibly diseased tissue can be removed. It is an axiom in surgery to which I know no exception, that attempted radical operation confined within the limits of cancerous growth is harmful rather than beneficial to the patient. This does not apply, however, to the removal by the cautery of soft fungating, readily bleeding or sloughing masses from the cervix. This gives great temporary relief from pain, hemorrhage, and sepsis, and as it is not attended by shock or danger it may be repeated more than once during the downward course of the disease. No lymph spaces are thus opened which are not at the same time sealed by the cautery.

There remains for consideration the management of the later stages of recurrent or inoperable growths. The use of the x-ray as a palliative in the pelvis appears at the present time to be considerably limited by the deep-seated location of the parts. It may be tried, however, through various vaginal speculums and in some cases appears to give relief, at least temporary. In a case of fibrosarcoma (diagnosed by Dr. J. Dutton Steele) of the abdominal wall operated on for Dr. M. B. Hartzell six months ago, there was an involvement of the uterus, the left broad ligaments, the left tube, ovary and rectum which could not be surgically removed, and the abdomen was closed. Under the x-ray treatment by Dr. Newcomet at the Presbyterian Hospital the patient has shown marked improvement in the relief of pelvic distress and a surprising diminution of the superficial portions of the growth. As there was deep-seated pus in the little suprapubic mass it was at first hoped that the whole trouble was inflammatory, which accounts for the operation.

In late cases in which sloughing is going on nothing has given greater satisfaction for daily use in the hands of the patient than strong solutions of potassium permanganate. The surgeon may apply at intervals of several days strong solutions of formaldehyd, one to ten for example, with a decided influence in lessening the progress of superficial growths. This has served to delay a recurrent carcinoma of the uterus for two years in a patient for whom I performed hysterectomy for advanced disease of the corpus more than six years ago. She has little bleeding, has no odor, and suffers little pain, though the disease has slowly invaded the scar tissue between bladder and rectum and also the upper portion of the vagina.

The management of the comparatively rare cases of sarcoma does not differ from that of carcinoma of

the body of the uterus, and calls for early hysterectomy.

In conclusion, a strong plea is made for the early investigation of cases which show *any* of the symptoms of cancer. The method of operating must be determined by the case, but every patient should receive in some form thorough treatment by the actual cautery before any lymph spaces are opened by any other form of operation. Even apparently hopeless cases may show surprisingly satisfactory results. No patient should be denied the benefit of persistent intelligent palliation.

CHLOROSIS.

BY

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In the practice of medicine, many conditions arise which tax the greatest skill of the diagnostician and require a most thorough knowledge on the part of the therapist. Foremost among these conditions stand the various forms of the anemias. With the many varieties, the discouraging course of the disease and the bad prognosis associated with some of them, especially the pernicious type, surely no subject demands a more thorough study. My aim is to discuss only that form of anemia which if recognized early can be treated with the assurance of an ultimate cure. I refer to chlorosis. By chlorosis is meant that variety of the primary or essential anemias in which the blood change is a disproportionate hemoglobinemia without any modification of the leukocytes and which is associated with not only symptoms common to all anemias, but also with those peculiar to itself.

In order to render the study of this subject more simple I will discuss it under the following heads: 1. Etiology. 2. Morbid anatomy. 3. Symptomatology and diagnosis. 4. Blood examinations. 5. Prognosis. 6. Treatment.

Etiology.—Of the etiology little can be said, but nevertheless it is most important in arriving at our diagnosis. The disease is almost always found in girls between puberty and the age of 24. Many writers claim to have seen it in men, but the cases reported are very few. According to Tyson its occurrence is not impossible in men of feminine habits and occupations. Hermann Eichhorst especially mentions tailors. However, so closely is the disease connected with the female generative organs that we must almost doubt its very existence in males.

As to age, we also have deviations from the rule. Although the great majority of cases, as before stated, occur between the ages of puberty and 24, still we have that variety known as "chlorosis tardia" found between the ages of 30 and 40. More rarely it is seen in children. Niemeyer claimed that girls who menstruated at 13 or 14, in whom there was as yet no development of the pubes or breasts, almost always become chlorotic. Another important etiologic feature is bad hygiene; poor food, lack of sunshine, indoor life, and overwork all tend to increase the severity. Again there are repeated emotions such as arise from sexual excitement and masturbation. Flint mentions ungratified sexual desire, disappointment in love, loss of relations and crosses of various kinds.

We are but in the realm of supposition as regards the true exciting cause of chlorosis. Stevens states that the absorption of ptomaines from the bowel may act as an incentive for the onset, but in this I can hardly agree. The frequent association of constipation with chlorosis led Sir Francis Clark to suggest that it might be a copremia, an absorption of ptomaines or leukomains from the large bowel. Such poisons readily interfere with the proper development of the hemoglobin of the

blood disc, without destroying it to a great degree. Forcheimer also advanced this theory. This etiologic feature may be considered in pernicious anemia, but I doubt its plausibility in chlorosis.

The various gastrointestinal disturbances which I shall describe later have been proved to be secondary to the blood changes and in no instances have they been primary. If this absorption is the exciting cause then the intestinal signs would be primary.

Morbid Anatomy.—The study of the morbid anatomy of this disease is embryonic. So few cases come to autopsy that we are unable to get much data as to the real pathologic changes. We know, however, that all show a marked atrophy in the size of the uterus and its appendages.

Many years ago Virchow pointed out certain characteristic circulatory results—the heart was found invariably small, the right ventricle being dilated. This was undoubtedly due to the extra strain upon the heart which we note late in the disease. In the *British Lancet*, R. Wybauw, in discussing cardiac dullness in chlorosis, states that the increase of the ventricular space is generally due to actual dilation, but may sometimes be due to upward displacement of the heart by the diaphragm. The distinction is made that when there is only displacement the apex beat is pushed upward and outward. When dilation is present the apex beat is down and out. Virchow also found the aorta and its large branches poorly developed and thin-walled. Tyson claims that this state of the vascular system, when present, is probably an accidental coincidence. Gautier, in the *German Archives of Clinical Medicine*, denies this theory of Virchow and gives as his reason the fact that the heart returns to normal size when the patient improves. According to Gautier, a congenital narrowing of the arterial system being a permanent condition would bring about a permanent cardiac condition unless absolutely cured, which, as we easily can see, is impossible. Engelhart describes a case of chlorosis in a girl of 18, in which a diagnosis of tumor of the brain was made during life because of a bilateral optic atrophy and choked disc. Death occurred and autopsy showed no alteration in the brain excepting marked anemia. Engelhart believes that optic neuritis and the general symptoms which had given rise to the diagnosis of brain tumor had been the result of the chlorosis. We must admit that our knowledge of this phase of the subject is extremely limited at the best and until the necroscopist obtains more material, our conclusions along this line must be very limited.

Symptomatology and Diagnosis.—This is the most important part of the study of chlorosis. No disease has such typical pictures and no disease, when closely followed, runs a more uniform course, but notwithstanding this, the general practitioner makes his diagnosis more from guess than from a thorough inspection of his patient's condition. In a young girl at or near the age of puberty a peculiar pallor of the skin is first noticed. The lips, which especially in youth have such a fresh tint, gradually become more blanched than by the extremest emotions of fear. Unlike pulmonary tuberculosis, in which the skin is pale and the mucous membranes still retain their brilliant hue, the chlorotic girl shows a peculiar greenish-yellow condition of the skin, especially in the folds of the well-formed cheeks, and the lips and conjunctivas synchronously attain the exaggerated pallor before mentioned. Thomson claims that this is not a bleaching process, but a true discoloration. Noted in blonds as well as brunets, it gives us a picture never seen in any other form of anemia, whether it be febrile or nonfebrile. If it were a variety of jaundice, the conjunctiva would most certainly be involved, but this membrane remains absolutely colorless. No bile can be found in the urine or any other bodily secretions. I will admit, however, that the liver is a factor in the cutaneous change. The normal

destructive metamorphosis of the erythrocyte must be deranged, or there would not be the typical whitened stools. In patients under treatment this is not always seen and its disappearance can easily be explained when we recall the effect produced by the administration of iron even under normal conditions. Pepper describes a condition known as "chlorosis rubra," in which the lips and cheeks grow red upon exertion even when the so-called "valeur globulaire" is considerably diminished. These skin changes, together with the areas of pigmentation often noted about the joints and the pallor of the tips of the fingers present a typical picture of the well-known "green sickness."

Following these metamorphoses, the case is first brought to the attention of the physician. An anxious mother brings her young daughter who has never menstruated, or in whom the function has been long retarded. According to Strümpell, cases of menorrhagia are very rare. I can now recall several cases seen in hospital work in which the patient never menstruated until the age of 17, 18, or 19. I have one patient now under observation who menstruated twice when 14, after which the menses did not appear for several years. I do not mention this as the exception, but as almost the rule. When menstruation does begin it is very scanty and often attended with considerable pain. Some time ago there was quite a diversity of opinion as to whether these menstrual changes, together with the gastrointestinal ones, were primary to chlorosis or chlorosis primary to them. The latter is by all means so. Some years ago I consulted all the literature at my command to determine this, and became perfectly satisfied that chlorosis was the cause and not the effect.

Among the first subjective symptoms the patient complains of are malaise, headache, languor, vertigo, dyspnea, and palpitation. The perversion or loss of appetite then comes with many real or imaginary dyspeptic disturbances. She refuses food, but if suggested will eat almost anything. Often one who could not bear the sight of olives, pickles, vinegar, and other sour articles, will actually crave for these, and be satisfied with nothing else. Schoolgirls have been known to eat chalk, leadpencils, and even earth. The desire for sour food is easily explained when we remember that these girls cannot digest fats of any kind. The digestive symptoms which most trouble the patient at this time are borborygmus and tympanites. These are often intense, causing a marked sense of fullness in the epigastrium which is often hard to relieve. Severe cardialgia may be present. This is usually of purely nervous origin, but is sometimes produced by a gastric ulcer, existing as a complication of chlorosis. When this ulcer does exist there follows the localized pain, especially severe after the ingestion of food, and not relieved until the stomach is again emptied either by the food passing on into the duodenum or by being vomited. Often this vomitus is mixed with blood. When this complication is suspected there should be an examination made of the stomach contents after a test-meal, and if the diagnosis is correct there will be an excess of hydrochloric acid. This is almost pathognomonic. Of course there are many other conditions in which we will find this; in fact one writer claims that he determined by autopsies that 9% of all stomachs contain ulcers of some degree, most of them never having been suspected, before death. Pepper stated that when ulcer does exist and is accompanied by morning vomiting and amenorrhea, especially in a person who has indulged in recent sexual intercourse, he has often been called upon to decide if the patient is pregnant. Of course this can only be determined by thorough examination. I cannot elaborate in this condensed paper upon the symptoms associated with gastric ulcer complicating chlorosis, but I do want to caution against overlooking it and allowing it to go untreated. Upon this the prognosis of chlorosis often depends. Again, when the presence of an ulcer is known it must be

remembered that it is only secondary to the chlorosis and the chlorosis should not be ignored. I have given this warning because several persons, believing that chlorosis is secondary, have given their patients gastric lavage and claim to have obtained good results. Pick, of Prague, has made this statement, but does not substantiate it with sufficient proof. To me the lavage of an ulcerated stomach is extremely poor practice. Not knowing how extensive the ulcerative process is, the risk of filling the stomach with fluid and the introduction of a tube seems dangerous and uncalled for. An acute exacerbation of symptoms and even rupture of the stomach has been known to occur when lavage has been practiced, and this fact ought to condemn the procedure.

The differential diagnosis between chlorosis and many other diseases is apparently quite difficult, but when we consider each one individually it can most readily be seen that, notwithstanding the similarity, chlorosis still maintains its identity.

Organic heart disease is often mistaken for the hemic murmur of the chlorotic heart. In the former hepatic and renal complications often exist; in the latter but seldom. The character of the chlorotic murmur is generally a purely systolic one, mostly at the base or near the pulmonic valve, not transmitted, and generally of a blowing character. This ought to be sufficient to exclude any other valvular disease. Three explanations are given for its existence: (1) It is due to the rubbing together of the abnormally dry pericardial sac; (2) it is the result of interference with the movement of the cardiac valves, following fatty degeneration of the myocardium; (3) it is caused by relative insufficiency from dilation of the heart or imperfect action of the papillary muscles. Strümpell states that murmurs in the large veins of the neck are heard with or without cardiac murmurs. These are known as the "bruit de diable." A. Weil maintained, however, that they are found in healthy persons as often as in anemic. This Strümpell denies, but does not claim any diagnostic value even when they do exist.

Kidney trouble and chlorosis are at times confounded. In this form of anemia the urine is deficient in urea, has low weight, seldom contains albumin, and never casts. In kidney disease the two latter are generally present with their many complications, as seen in nephritis. The absence of jaundice and enlargement of the liver eliminates hepatic disorders. From carcinoma, the absence of cachexia, glandular involvement, loss of flesh and strength, the absence of a mass, together with the age of the patient, makes the distinction quite easy.

From the leukemias, chlorosis can only be diagnosed by a blood examination.

Pulmonary tuberculosis is often spoken of as simulating chlorosis, but the laboratory can easily settle this question.

Lastly, certain febrile conditions are named in connection with this disease. In the former there exists a destruction of fat, muscle, bone, and especially albumin of the blood, hence an emaciation. In the latter only the hemoglobin is destroyed, therefore no emaciation.

Blood Examinations.—We have now arrived at that phase of our subject which perhaps is the most important and the most interesting—the blood change. As I have previously mentioned, the impoverishment of the blood in chlorosis has reference chiefly to the red corpuscles and in less degree to the albuminous constituents of the plasma. Becquerel and Rodier found the albumin in the blood of six patients to be 72.1 per mm. instead of 57, the normal. There is a reduction in the quantity of hemoglobin with or without diminution of the number of the cells. According to Flint, cases have been noted in which the red cells were normal in number but the hemoglobin reduced 50%. This condition of disproportionate diminution of hemoglobin, known as oligochromemia is the distinguishing feature of the disease over all other anemias. If we make an examination of

a chlorotic's blood there will generally be found a slight, at times quite large reduction of the red cells. The white cells will be but little affected but the hemoglobin will be down to 30% or 40%. The blood is generally pale, the centers of the red cells especially so. These red cells may be normal in size or may be microcytes, while a few may be macrocytes. Here and there a poikilocyte will be found. Again the erythrocytes seldom form in rouleaux. In occasional instances there is a considerable number of so-called "granular bodies," the exact character and significance of which are not known.

Prognosis.—As I have already intimated there is a great variety in the course and prognosis of chlorosis. Complete cures in four to six weeks in cases which are quite severe at first are not exceptional. Other cases much more obstinate resist all our efforts for a long time and there are many relapses before a final cure is effected. The disease never endangers life except by complications.

Treatment.—The treatment of chlorosis is comparatively simple when complications do not exist. If we see the patient early, the bettering of hygienic surroundings will often do much. Outdoor life, exercise in moderation, withdrawal from school, no working in shops, good nourishing food, and the internal administration of iron practically completes the treatment. Just which preparation of iron to be used is not important, but I have seen the best results from Bland's, given in increasing doses. Tyson recommends a beginning dosage of .19 grams (3 grains) of Bland's after each meal. The iron should then be run up until the patient receives enough to establish results. Generally one to two grams (15 to 30 grains) daily will accomplish this, but if still unsuccessful, no hesitancy in still adding to it should be had. I recall one instance when 5.8 grams (90 grains) were given every 24 hours without any ill effect, and which brought about absolute cure. Some therapeutists advise the tincture of iron chlorid, but this is a matter of personal preference. Various proprietary drugs are for sale, some of them having exceptionally good qualities, but their chief virtue lies in the iron constituent. Arsenic, either in mass or as Fowler's solution, has been strongly recommended. When the disease is well advanced, the patient, beside this medicinal treatment, should have the absolute rest cure. She should not leave bed for several weeks; much nourishing food should be given, reinforced by massage and electricity if circumstances permit. Some authors suggest mud or sand baths, but of the virtue of this treatment I can not comment upon owing to lack of personal experience with it. When improvement becomes marked, allow the patient to sit up one-half hour daily, gradually increasing the time.

All complications should be met symptomatically and promptly treated. Under a treatment similar to this, Thayer states that in his most severe cases in four weeks an increase of from 40% to 80% of hemoglobin was noted. However, do not be too optimistic at the beginning. Cases often go for months before final cure is established, but persistence in proper treatment will ultimately bring about the very best results.

New Hospital in Washington.—On June 6 the cornerstone of the new Episcopal Eye, Ear, and Throat Hospital was laid, with appropriate ceremony.

Grave Mortality from Pneumonia and Bronchitis.—The Bulletin of the Health Department of Chicago for the week ended May 9 states that during the week previous there were 178 deaths from pneumonia out of a total of 672 deaths, and that pneumonia and bronchitis combined have caused more deaths since January 1 than all the other diseases combined. The bulletin states that some means for filtering the air consumed in public and private houses which will keep out the numerous pathogenic germs should be devised. It states that a device consisting of a screen of cheese-cloth, the upper edge of which is attached to the lower rail of the bottom sash of the window so that when the sash is raised the cheese-cloth is drawn up, completely filling the opening, has been found of value for this purpose.

A NEW METHOD OF TREATMENT FOR CHRONIC ANTERIOR URETHRITIS, AND FOR THE DECLINING STAGE OF ACUTE URETHRITIS.¹

BY

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By the term chronic urethritis is understood an inflammatory process, involving the urethra subsequent to an acute invasion of that canal. It may be localized in any part of the urethra, that is to say, in the anterior or posterior portion.

However, as it is the purpose of this paper to treat of the form of urethritis that is the "bête noir" of the general practitioner, chronic anterior urethritis, I will merely mention the fact that chronic posterior urethritis often times exists independently for some time after the chronic anterior condition is cured, and very frequently coexists with anterior urethritis, but as that condition (chronic posterior urethritis) demands a separate and distinct form of treatment, I will confine my remarks to the treatment of that form which is most common—chronic anterior urethritis. This results from a previous acute, inflammatory condition of the urethra, and as acute urethritis has the natural tendency to linger indefinitely in the tissues, and with the inability to control the physical forces of one's patients, who most generally are obliged to continue at their usual vocations during the acute stages and who are apt at the first indication of the diminishment of discharge, to indulge in alcoholic and sexual excesses, it is not to be wondered at that the condition becomes chronic, especially when one stops to consider the virulence of the gonococcus and the great disadvantages that have to be overcome in the management of the cases.

Too protracted and energetic treatment in the early stage will tend to assist in the disease becoming chronic, and the popular habit of "seeking discharge" by stripping the penis prior to urination, and at various times during the day, adds materially in promoting chronicity by burying the germ-laden pus cells deep into the submucosa.

The condition of anterior urethritis is popularly known as gleet, and numerous are the preparations advertised to cure. Most of them consist of injections of zinc and copper, and the internal medicaments are as a rule, balsamic in character.

The pathologic appearances of the lesions as determined by the endoscope in chronic anterior urethritis vary. Follicular inflammation shows itself in small deep red pus oozing spots varying in size from that of a pin-head to a pea; likewise does inflammation of the lacuna magna and other crypts show itself. A deep red, purplish color of the thickened mucous membrane is the most constant morbid symptom, and may vary in extent, involving a segment of the canal, or simply cover a limited portion; associated with this form one will most generally find a generous pus secretion.

Another condition in which there is epithelial hyperplasia and a budding appearance of little eminences caused by the growth of new capillary vessels is common and is known as granular urethritis; and a further advancement of this hyperplastic and capillary condition has also been honored with the dignity of a name, and is described as a separate and distinct condition under the name of papillomatous urethritis.

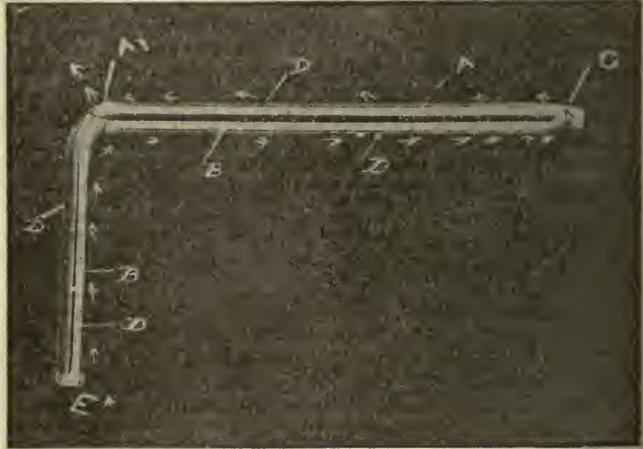
This has always seemed to me to complicate the study of the pathologic condition of the urethra rather than to simplify. As stated, the papillomatous condition is simply a granular urethritis in an advanced and aggravated stage.

Erosions and ulcerations of the urethra are frequently the cause of chronic anterior urethritis. The mucous

membrane in this condition is thickened and red, and does not show the luster and shining appearance of the surrounding tissue, owing to the loss of the epithelial covering. While all these superficial lesions are observable by the endoscope, there is a deeper exudative process at work in the submucosa, and all the superficial appearances are a result of this deeper condition.

"The morning drop" or tear, as it is sometimes called, is the pus accumulation of the night before, and may be small in quantity. It is generally greenish-white in color, and in numerous instances there is just enough of it to seal the meatus; and a separation of these lips will disclose a drop of glairy mucus; and it is the alleviation of this symptom to which your patient looks to you, and in our attempt to do so we are frequently put to our wits' end. I do not believe there is a physician who has not had a case that has proved rebellious to every effort at treatment attempted by him, and it is for this class of cases that I wish to suggest a form of treatment that in my hands has proved most effective.

Hundreds of remedies have been vaunted in the treatment of gleet, and one can hardly pick up a medical journal without seeing this or that remedy suggested as being applicable with good results. It is not my purpose to extol the virtues of any given drug, but to offer



The Townsend Duplex Insufflator. Powder container attaches at E.

a method of application that, as stated before, has proved of value to me, and one which I have given a fair trial in a considerable number of cases in the past five years. The actual statistics I am unable to give, as I treat my patients symptomatically, and have been in the habit of using this form of treatment in a special way, rather than in a routine manner. However, to the general practitioner who is not familiar with endoscopy, and is too busy or has not the inclination to investigate it, the use of the instrument I present will accomplish more toward the cure of chronic cases and in a more scientific manner than the ordinary treatment by means of injections of varying strengths and internal medications.

The instrument consists (see cut) of a (D) glass rod 22, French bent at right angles perforated by a canal B bored through it from end E to air chamber C, and with another canal A extending from air chamber C and having an outlet at A1. The air chamber C, as will be seen, is perforated at its proximal end by the openings of the canals A and B, and its distal end is open except when in the urethra, at which time the urethral walls fall over the end, thus making a closed air chamber.

It is obvious that when this insufflator tube is attached to a powder container at E and the powder forced, it will follow the direction of the arrows, and reaching the air chamber C will become agitated and

¹ Read before the eighty-ninth annual meeting of the Vermont State Medical Society, October 9, 1902.

necessarily a portion will adhere to the moist mucous membrane of the urethral walls, forming the distal wall of the air chamber.

As the powder is forced from the container into the insufflator, the tube is gradually withdrawn, and the mucous membrane of the urethra is consequently covered with the medicament used. To this insufflator, I have given the name of "Duplex;" as will be seen it can be used in any cavity or sinus as well as in the urethra, and will, I believe, find a field of usefulness by supplying a means of thoroughly applying an impalpable powder to any region desired. It offers the advantage of being simple in construction and being easily cleaned.

Sterilization is accomplished by boiling, and it may be dried rapidly by passing through the flame of an alcohol lamp after shaking out any water that may be in the capillary tubes A and B. Special care should be given to the last mentioned detail, for if done carelessly the water will boil in the tubes, and by the generation of steam the tubes will crack. Therefore, keep it in motion while in the flame of the lamp, and be sure all water is out of the capillary tubes before applying heat.

The drugs that I have been in the habit of using are those that are astringent and antiseptic, and any other that suggests itself to me in each individual case. When there is a quantity of pus accumulation, I give several treatments with aristol prior to applying an astringent. It is impossible to set down any hard and fast rule as to the selection of drug or the number of treatments to be given. In my experience zinc, copper and aristol have accomplished the desired effect, and I treat my patients three to four times a week. I want it distinctly understood that I recommend this method of administration in chronic anterior urethritis and in the declining stages of the acute condition, and under no circumstances in the early stages, as nothing but harm could accrue from its use at this time; but in the two first-mentioned conditions I consider it a rational treatment as it is a wellknown surgical fact that astringents and antiseptics are indicated in conditions similar to those in chronic anterior urethritis; and the orthodox treatment for this condition depends upon the unreliable solutions of drugs which are injected into the urethra by the patient and to the ingestion of various balsams which do nothing but cause a bland condition of the urine and do harm by disarranging the assimilation, whereas the condition is a local one and should so be treated.

Those making genitourinary work a specialty treat the condition of chronic anterior urethritis locally with astringents and antiseptics by means of special instruments which the general practitioner is unfamiliar with, and it was to devise a means of easy access to the morbid urethra that prompted the idea of this little instrument which, as may be seen, has a twofold action. That of a sound, as by its passage into the urethra the "ironing out" process of the urethral folds is accomplished, and, at the same time, the drug used is being deposited upon any diseased area that may be covered by these folds.

MAN'S RESPONSIBILITY IN STERILE MARRIAGES.¹

BY

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Before entering upon the subject-matter proper of this paper, I want to emphasize the fact that I shall not touch upon that class of childless marriages in which, for selfish reasons, children are prevented from coming into the world—unfortunately this state of affairs is alarmingly on the increase and the remedy is not yet in our hands.

The condition I propose to discuss is of that class of fruitless unions in which offspring is wanted and yet

fails to come—a true pathologic condition which in many cases can now be corrected and can also be prevented from happening in the future.

I shall endeavor in my remarks to remove the stigma from the barren woman and place the responsibility on the man, where it justly belongs in at least 70% of cases. Vedder says: "Out of 310 sterile marriages, 70% were due to the husbands, either through azoospermia, or impotence, or because of the wife's infection with gonorrhoeal disease from her male partner."

That the husband is more often the cause than the wife is easy to prove; but what is most pitiable in sterile marriages is that the man seldom ever questions his own potency, but allows the woman to consider herself the cause and to undergo manifold operations at the hands of gynecologists to relieve the situation.

The husband, not being aware that the sin has been or is in him, is frequently not only the cause of the wife not bearing him children, but too often is he the unconscious cause of her unsexing or death, he having infected her with a disease contracted before marriage. Writing of such infections, Valentine says: "It can not for a moment be assumed that the men who caused the death of their wives married with the knowledge that they would produce such disastrous results," and yet Noeggerath as far back as 1876 claimed that 90% of sterile women are married to husbands who have suffered from gonorrhoea either previous to or during married life.

Realizing the truth of such a statement, the medical profession as a body is to blame; and family physicians especially for having allowed such a condition of affairs to continue; certainly it was their duty to protect the daughters of the families whose physicians they were, and to advise the sons of those families as to the possible consequences of an uncured or latent specific urethritis. Even if the family physicians had gone only so far as to instruct the parents of daughters eligible for matrimony as to the danger to woman from an infectious disease latent in man, our graveyards would not now contain so many young wives, our gynecologists would have less to do, and there would be fewer barren women.

Statistics prove beyond a doubt that specific urethritis is most often the cause, directly or indirectly, of sterile marriages. When we realize the frequency of the disease the wonder is that all of us are not in the hands of the genitourinary specialist and our wives under the tender care of the gynecologist. Lawson Tait claimed that every man, at least once during his life, acquired specific urethritis. This I believe is too high a percentage, and Noeggerath came nearer the truth when he asserted that 800 out of every 1,000 men in large cities had gonorrhoea. Assuming that Noeggerath's estimate is correct we have then an existing state of society in which 80% of the men have had or now have specific urethritis, a disease in itself and in its complications most difficult to treat. A patient with gonorrhoea will undergo treatment only so long as the discharge continues. He rarely ever remains under treatment until all infection has been removed.

Once anterior specific urethritis is contracted the danger of the posterior urethra becoming involved is great—some authors claiming that in as high as 80% of the cases the posterior urethra is involved. The genital apparatus proper being so intimately connected with the posterior urethra we can readily see how easy it would be for infection to be transmitted from one to the other. The vas deferens, continuing as the duct of the epididymis and testicle, joins with the duct from the seminal vesicle to form the ejaculatory duct and to empty into the posterior urethra. The ducts of the prostate also empty into the posterior urethra. Such being the case the infection from a specific urethritis posterior might easily be transmitted to the prostate, seminal vesicles, epididymis, or testicles. These infections do occur more often than is generally known.

Frank remarks that of 651 cases of specific urethri-

¹ Presented at the fiftieth annual meeting of the North Carolina Medical Society, June, 1903, Hot Springs, N. C.

tis 210 showed involvement of the posterior urethra, and of this 210 the infection had traveled to the prostate in every case. The prostate becoming infected, the danger to the seminal vesicles becomes exceedingly great. The diplococcus of specific urethritis being once lodged in the prostate or seminal vesicles only the most careful treatment long continued can dislodge it.

As to the epididymis, Gouley states that it is involved in 30% of all cases of acute urethritis. The epididymis becoming infected, the natural sequence would be occlusion of the vas deferens on that side; and when there is a double epididymitis at least 50% of the patients will be absolutely sterile. A frequent cause of sterility, and one that is often overlooked, is stricture of the urethra. During erection the penis becomes congested, the lumen of the stricture closes, and although the semen may be potent, it cannot pass when ejaculated.

The danger of the man becoming sterile from specific urethritis, its consequences or sequels, as has been shown, is evident; but a more serious condition exists when the disease, although apparently cured, becomes latent; the germs remaining imbedded in some part of the genitourinary apparatus. Thinking himself cured, or at most only suffering from gleet, he marries. The excesses of early married life produce hyperemia of the sexual organs, and the diplococci of specific urethritis which have been dormant for so long are thrown from their nests and lodged in the virgin tissues of the new wife. The sequel is apparent to all, and unfortunately almost a daily sight in our practices. The woman becomes infected, pelvic troubles begin, and if she be so fortunate as to escape death, a condition ensues which to some is almost as bad, a childless marriage. Indirectly the husband has been the cause, and for the rest of her life the wife must remain barren—all due to the man to whom she has given herself body and soul.

Should a husband with latent gonorrhea not infect his wife, there yet remains in him a condition which might render him sterile. Where the gonococcus lives there must be destruction of tissue, and pus is deadly to spermatozoa. Inflammatory conditions of the sexual organs which produce pus, even though the cause be not specific may render the semen sterile.

I might here mention certain other conditions which cause impotency in the man, first by exhausting his strength and producing undeveloped spermatozoa, and afterward from disease, producing no spermatozoa at all. The conditions I refer to are masturbation, onanism, and sexual excess. To return, however, to gonorrheal urethritis as being the most frequent cause of sterility, I want to cite the following which bears out what I have said: "Benzler, investigating gonorrhea and sterility, followed the histories of 3,000 soldiers of the German army who were infected with gonorrhea during their term of service. Out of 474 authentic marriages of those who had been affected with simple gonorrhea, he found that 10% were without children after three years of married life; of 111 marriages of men who had had epididymitis on one side, 23.4% were sterile; of 24 marriages of men who had had epididymitis on both sides, 41.7% had no children and 52.5% had only one child." It is to be regretted that Benzler did not pursue his investigations so far as the wives of these soldiers were concerned. Had he done so, his statistics would have been doubly valuable.

Having shown how it is possible for specific urethritis to produce sterility, and having quoted statistics as to its frequency, we come now to syphilis, which although not so common as gonorrhea, still ranks high as a producer of sterile marriages. Unlike specific urethritis, it acts on the product of conception and not on the procreative germ. In all textbooks, syphilis is given as one of the principal causes of abortion, and as man is the aggressor in all sexual acts, it is just and reasonable to suppose that in the majority of cases he has infected the woman.

Being cognizant of the above facts as to gonorrhea and syphilis, it is our duty to prevent these diseases.

1. Lectures on venereal diseases should be a part of the curriculum of high schools and of colleges. It is not necessary for these lectures to be vulgar to be instructive. Every boy on reaching the age of 16 should be taught the physiology of the genitourinary apparatus. He should be told of the conditions which follow self-abuse and other unnatural sexual acts. Above all, it should be impressed upon his mind how serious are gonorrhea and syphilis, not only as to his own health, but as to his wife's, should he ever marry. I remember the most instructive lesson I ever received was from a visit to a dime museum when a college student. On either side of the hall, in glass cases, were wax-works showing syphilis and gonorrhea in their most repellent forms. I have never forgotten what I saw, and today whenever I see one of the demi-monde, I think how cruelly she may mark her prey—if she has the disease. I advocate school instruction because few parents ever appreciate the proper time for instructing their sons. It is hard for them to realize that their sons' ambitions rise in all directions at the same time. Putting off this important information from day to day is like playing with fire, for some day the boy of the family will "become a man" according to his playmates; he will have contracted either gonorrhea or syphilis.

2. No patient with venereal disease coming to a physician should be dismissed until there is positive evidence of cure. Patients with venereal diseases are too apt to discontinue treatment the moment all outward manifestations disappear. Because of this fact we have recurrent or latent gonorrhea, tertiary syphilis, etc.

3. Each patient with venereal disease should be instructed as to its possible result to himself and wife, if married. If single, he should be told how necessary it is for him to be cured before marrying.

4. Each family physician should inform the parents of marriageable daughters as to the seriousness of venereal diseases. He should counsel them not to consent to the marriage of a daughter unless the man can present a certificate from his physician declaring him free of any venereal infection. Advice given by public documents or leaflets does good, but much more real benefit is derived from a private conversation. No one can talk to a parent along such lines except his physician; he will listen to and follow the advice of his doctor when nothing else will appeal to him.

5. Establish State laws, making it a crime for a man or woman to marry while suffering from venereal disease. Already several States have passed such a law. All the States should pass it and, more important still, should enforce it.

6. When a husband of a fruitless union consults you, first examine him carefully before subjecting his wife to the ordeal. After several such examinations you will find in the great majority of cases that the man is directly or indirectly the cause of the sterile marriage.

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Pneumonia.—The Chicago Bulletin of the Health Department for the week ended May 31, speaking of pneumonia, says: "A disease which has annually carried off nearly 13 in every 10,000 of the population of the country during the last few years and whose ravages are rapidly increasing year by year, is certainly worth talking about and preaching about, both to the profession and the public. The average pneumonia deathrate per 10,000 of population of 10 principal cities for a series of years prior to 1900 was as follows: Milwaukee, 10.40; Minneapolis, 11.84; Los Angeles, 12.49; Buffalo, 15.86; Chicago, 17.00; San Francisco, 18.12; New Orleans, 18.87; Philadelphia, 20.33; Boston, 25.20; New York, 26.67. Since 1900 these rates have enormously increased and are still increasing."

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

June 13, 1903. [Vol. XL, No. 24.]

1. The Modern Conception of Eczema. Chairman's Address before the Section on Cutaneous Medicine and Surgery. J. A. FORDYCE.
2. Mercurial Treatment of Syphilis. A Further Contribution to the Study of Mercurial Injections. M. L. HEIDINGSFELD.
3. Report of a Case of Fibroma Molluscum. HENRY G. ANTHONY.
4. The Treatment of Leprosy. Discussion on the Paper Read at New Orleans. A. H. OHMANN-DUMESNIL.
5. Notes on the Treatment of Lichen Planus. JOSEPH ZEISLER.
6. The Pathology of Summer Diarrheas of Children. G. W. BOOT.
7. Every Day Problems in Infant Feeding. HENRY ENOS TULEY.
8. Infant Feeding. ALEXANDER MCALISTER.
9. Infant Digestive Disturbances. A. C. COTTON.
10. Suggestions for Reducing the Prevalence of Summer Diarrhea in Infants. J. ROSS SNYDER.
11. Fruit Vessels, Mosquitos, and Yellow Fever. EDMOND SOUCHON.
12. The Weight Wave of Menstruation. A Preliminary Note. WM. T. BELFIELD.

1, 2, 3.—See *American Medicine*, Vol. V, No. 20, p. 782.4, 5.—See *American Medicine*, Vol. V, No. 22, p. 863.6, 7, 8, 9.—See *American Medicine*, Vol. V, No. 21, p. 820.10.—See *American Medicine*, Vol. V, No. 21, p. 821.**11.—Fruit Vessels, Mosquitos, and Yellow Fever.**—

E. Souchon reports that on 12 fruit vessels, making 180 trips between New Orleans and Central America, and which carried medical inspectors for the purpose of capturing mosquitos that their variety might be determined, but 208 mosquitos were caught, of which only 5—that is, less than 2.5%—were stegomyia. In houses 40% are found. Females were enormously in the majority. Between Havana and New Orleans the percentage was 16. During 15 years, from 1886, fruit vessels were forbidden to have communication with the shore, and but 5 vessels arrived with yellow fever on board during the quarantine season. Only 1 of the 5 cases could not be positively traced to infection on the shore. He recalls the impunity of intercourse with noninfected vessels from yellow fever ports. During 10 years 50,000 laborers came in contact for 5 hours with mosquitos before fumigation of the holds, and yet not a case of yellow fever occurred in New Orleans. This was because the mosquitos were not infected. There is great improbability of stegomyia on infected vessels becoming infected before arrival because the percentage is so small, because the females must be impregnated before they will bite; the males are in very small number, the females must bite within the first 3 days. They cannot infect a human being until 12 days thereafter; they do not bite a second time until 5 days have elapsed; they do not breed on bilge or sea water; the bitten subject must be a non-immune. The cases on record are all primary, not secondary cases. It is impossible for a mosquito on an infected fruit vessel to carry yellow fever to the city because the vessels are not more than 6 days in transit, and are then thoroughly disinfected, the mosquitos being destroyed before the 12 days have expired. Mosquitos will not live in baggage without moisture for more than 3 to 5 days in summer. [H.M.]

12.—The Weight Wave of Menstruation.—W. T. Belfield finds that during several days, especially the first, preceding the flow a progressive increase of from 2½ to 5 pounds occurs, which may be from 1¼ to 5% of the usual weight. Half of this may be lost in 8 to 16 hours. The flow begins during rapid loss, the blood often following immediately on the crest of the wave. It terminates about when the weight reaches the premenstrual level. The gain is due to diminished excretion, especially of water; the loss to rapid excretion of carbon dioxide and water, not to the trifling loss of blood. After the weight has fallen there may be another crescendo and diminuendo movement lasting several days, but less pronounced than the menstrual wave. Two cases of irregular habit exhibited the wave where the flow was nearly or quite lacking. For two days preceding the climax in weight there is often marked torpidity of the bowels and scantiness of urine, while with the decline, excretion by bowels, kidney, skin, and lungs is notably increased. A woman of 59 showed no characteristic weight wave. [H.M.]

Boston Medical and Surgical Journal.

June 11, 1903. [Vol. CXLVIII, No. 24.]

1. Dermatomyositis. F. FORCHHEIMER.
2. Policephalomyelitis and Allied Conditions. E. W. TAYLOR.
3. Congenital Inspiratory Stridor. D. CROSBY GREENE, JR.
4. Avulsion of the Tibial Tubercle Occurring in a Girl of 13. FRANCIS D. DONOGHUE.

1.—See *American Medicine*, Vol. V, No. 23, p. 895.

3.—Congenital Inspiratory Stridor.—D. C. Greene has seen 5 cases in 3 years. In all these the epiglottis exhibited an infolding of the lateral borders backward so that they almost touched posteriorly, converting the epiglottis into a tube with a narrow slit behind. One child died of pneumonia, another developed rickets. One outgrew the stridor at 1 year, another at 1½ years, the fifth child still has it at 15 months of age. The weight of opinion favors locating the difficulty in the vestibule of the larynx. There is a lax condition of the cartilages at the attachment of the aryepiglottic folds which permits of abnormal approximation. This is always associated with deformity of the epiglottis. The stridor is always noted immediately after birth or within a few days, and is continuous during waking and sleeping. Infants do not appear uncomfortable, and under favorable conditions the health is good, though such children seem susceptible to pulmonary affections. At 1 year of age stridor becomes gradually less noisy and finally disappears. Laryngismus stridulous usually does not begin until dentition. In stridor due to pressure of enlarged thymus or glands the sound is heard in expiration as well as inspiration. Treatment is purely prophylactic. [H.M.]

4.—Avulsion of the Tibial Tubercle.—The cases previously reported have been those of active, athletic boys between 13 and 16. The author's case is that of a girl of 13, likewise muscular and athletic. While vaulting over a horse in a gymnasium she fell, striking the cushion with her knee. There followed swelling and pain especially noticeable on attempting to kneel. After five weeks she came under the writer's observation. There was swelling, stiffness, and some pain, especially in the region of the tibial tubercle. The patellas were of the same elevation. The Röntgen rays showed plainly the true condition—avulsion of the tibial tubercle. Under treatment by strapping the leg became almost perfect functionally. [A.B.C.]

Medical Record.

June 13, 1903. [Vol. 63, No. 24.]

1. On Neurofibromatosis. JOSEPH FRAENKEL and J. RAMSAY HUNT.
2. Organization of the Bureau of Public Health and Marine-Hospital Service. WALTER WYMAN.
3. Diagnostic and Prognostic Data in Nervous and Mental Diseases. WILLIAM BROADBENT FRITCHARD.
4. Autoplastic Skin-grafting. H. F. MCCHESENEY.
5. Report of an Operation for Carcinoma of the Cecum and One of Carcinoma of the Transverse Colon. C. G. DARLING and DEAN LOREE.

1.—Neurofibromatosis.—Joseph Fraenkel and J. R. Hunt define this condition as the formation of one or more tumors in one or more cerebrospinal or sympathetic nerves. They may occur in any of the former except the optic and olfactory, which are essentially outgrowths of the brain and the supporting structure is glia. The tumors may vary in number from few to hundreds, and in size from a nut to a child's head. The condition is rare. Four cases are reported, one of which came to autopsy and another was operated upon. The pathologic findings and illustrations are given. The interesting article concludes as follows: We believe the following points deserve emphasis: 1. The possible diagnostic aid to be derived from the presence of skin fibromas or nevi in obscure lesions of the nervous system. 2. Choreiform muscular twitchings as observed in the first case. A similar condition was noted by Virchow and Thomas. 3. The absence of characteristic root pain in a case of extramedullary compression of the cord. 4. The fact that neurofibromatosis is occasionally the cause of increased intravertebral or intracranial pressure. 5. The presence of neurofibromas without giving rise to neural symptoms. 6. The indications for surgical interference are given not only by direct neural symptoms, but by the consideration of the fact that sometimes, although rarely, neurofibroma may assume a malignant character and undergo sarcomatous trans-

formation. 7. That the absence of neural symptoms may be explained partly by the presence of an interfibrillary edema and succulent myxomatous tissue within the hyperplastic fibrous tissue, thus diminishing and distributing the pressure, and partly by the absence of a tendency for this fibromatous tissue to contract, in contradistinction to inflammatory hyperplasia. [A.B.C.]

2.—Bureau of Public Health and Marine-Hospital Service.—Surgeon-General Wyman, in his address at the first annual conference of State and National Health Authorities, notes that while the conference is official it is advisory in character, being called in pursuance of a provision looking to cooperation between National and State governments. He describes the work of the six divisions of the Bureau—Marine-Hospitals and Relief, Domestic Quarantine, Foreign and Insular Quarantine and Immigration, Sanitary Reports and Statistics, Personnel and Accounts, Scientific Research. He reports the work accomplished by the Yellow Fever Institute, and announces that a national leprosarium and regulations relating to establishments for the production of vaccine, serums, and antitoxins, are now engaging the attention of the service. He advises the appointment on special committees of members of the conference especially interested in the several subjects to be considered, the reports of these committees to be read at the next full conference. He believes this will stimulate investigation and produce uniformity of effort, and coordination in different parts of the country, such as does not now obtain. [H.M.]

3.—Diagnostic and Prognostic Data in Nervous and Mental Diseases.—W. B. Pritchard holds that the neurologist must be an evolutionary development from the general practitioner. The collateral territory is larger than in any other specialty. He discusses the degree in which such factors as race, environment, temperament, occupation, age, sex, social, and educational status, heredity, etc., must be taken into account. Heredity is of more importance in prognosis than diagnosis. The facies alone of the neurologic patient at times decides the diagnosis. The perceptive faculties must be trained into association habits. The trained touch and trained ear often aid in identifying the disease. Prognosis in nervous diseases and insanities is far better than is generally supposed. All the nonorganic types are recoverable. Etiology is relatively unimportant in its bearing on prognosis. [H.M.]

4.—Autoepidermic Skin-grafting.—H. F. McChesney describes a method of skin-grafting which he has employed with success. The area to be grafted is cleaned with Tiersch solution and then irrigated with normal salt solution. The granulating surface is then dried with gauze. Where the granulations were firm and healthy the graft is placed directly on them; over areas of exuberant growth they are cut down and gently compressed with dry sponges until all bleeding ceases. Soft and flabby granulations are scraped away until a firm fibrous foundation is reached. Then the thin blue line of epithelial cells that has started to creep in along the edge of the wound is dissected up, and small pieces about $\frac{1}{4}$ inch square are cut off and placed on the granulating surface. These are covered with pieces of oiled silk about an inch square, or are protected with sterile gauze. The limb is then put up in a Volkmann splint. The patient experiences little discomfort while the epithelial line is being raised and cut off. It does not disfigure or scar, and at each dressing several new islands can be started without discomfort to the patient. These newly developing epithelial cells are very active in their growth and the grafts take well. [A.B.C.]

5.—Operations—One for Carcinoma of the Cecum, Another for Carcinoma of the Colon.—C. G. Darling and D. Loree report the cases. A man of 46 had a tumor of the right iliac region, diagnosed carcinoma of the cecum. Operation confirmed the diagnosis. The technic of the operation is given. Three inches of the ileum and six inches of the colon were removed and end-to-end anastomosis accomplished by suture, the omentum being brought over the site of anastomosis. The wound was closed with drainage and the patient made a good recovery. Another case is reported, the condition being cancer of the transverse colon. The same method of anastomosis as above mentioned was used, five inches of the colon being

removed. On the second day after operation signs of obstruction appeared. All food by the mouth was withheld for five days, lavage and enemas employed and recovery followed. [A.B.C.]

New York Medical Journal.

June 6, 1903. [Vol. LXXVII, No. 23.]

1. Aids to Cystoscopic Practice. FERD. C. VALENTINE.
2. Pyelotomy with Secondary Nephrectomy on the Left Kidney, Pyelonephrolithotomy on the Right. JOHN F. ERDMANN.
3. Blepharitis Marginalis. DUDLEY S. REYNOLDS.
4. A Consideration of the Operative Methods for the Cure of Astigmatism. A. E. DAVIS.
5. The Management and Prophylaxis of Intestinal Diseases in Infants During the Summer. CHARLES GILMORE KERLEY.
6. Renal Decapsulation for Puerperal Eclampsia. GEORGE M. EDEBOHLS.
7. Torsion of the Testicle. W. W. WILLIAMS.
8. Neuritis from Whoopingcough, with Report of a Case. CHARLES J. ALDRICH.

1.—Aids to Cystoscopic Practice.—F. C. Valentine has devised some aids to the practice of cystoscopy. The first is the *box phantom*, which consists of a small square box, at the bottom of which is a schematic circular device separated into segments. At the extreme of each radius is a figure just as it appears on a watch dial. Near the front of the picture are two holes intended to simulate the ureteral orifices. A lid is held at an angle of 45° to the open surface. The inner surface of the lid has a mirror. In the front of the box is a hole representing the urethral lumen. The manner of studying the location of points in the bladder by means of a ureteral catheter inserted into the Valentine cystoscopic phantom is given in detail. A *larger phantom* is also described, which consists of a heavy wooden stand containing a rubber hemisphere in which the lower two-thirds of the bladder are depicted as they appear in life. A movable mirror is so arranged that it will show the images of the lower part of the bladder just as this region appears through the cystoscope. Practice with this device is the same as with the smaller box. The *ureter-catheter simulacrum* is an instrument intended for the practice of ureteral catheterism without the dangers to the patient or the instrument that expensive cystoscopes would entail. It consists of a short metal tube somewhat resembling a female catheter with large rings attached to its proximal end and a straight tube with one ring at its proximal end. [C.A.O.]

2.—Pyelotomy with Secondary Nephrectomy on the Left Kidney, Pyelonephrolithotomy on the Right.—This case, reported by J. F. Erdmann was that of a woman of 31, who when first seen by him was in shock; pulse, 160; temperature, 104° F.; there was marked indications of tumefaction in the left side and an immediate history of obstruction for four days; agonizing pain, generalized, but most marked in the entire left half. There had been vomiting for three or four days. For 12 years the patient had suffered from attacks of pain limited to the left side and calculi had been passed several times. A diagnosis of nephritic colic with perinephritic abscess was made and immediate operation advised. The usual oblique incision for nephrorrhaphy was made, and about eight ounces of purulent fluid escaped. Examination revealed a large rent in the pelvis of the kidney, through which several small stones were removed. The cavity was packed and drained. There was still evidence of sepsis and five days later a nephrectomy was done. The patient gradually improved for four weeks, when she had an attack of pain in the right side, and a condition similar to that first seen, presented itself. For several months the attacks recurred at intervals, becoming more severe. A Röntgen ray picture showed a large calculus in the kidney pelvis and extending into the kidney substance, and several smaller calculi in the kidney substance. A pyelonephrolithotomy was done. The large stone, when dry, weighed three drams, while the four small ones weighed seven grains. Her convalescence was positive after the first day. [C.A.O.]

3.—Blepharitis Marginalis.—D. S. Reynolds divides these cases into three classes: First, those in which there is slight thickening of the borders of the lids, the anterior margins are dry and red, and the lash is thin, while the cuticle between the hairs is covered with minute scales of desquamating epidermis. Cases of this kind frequently disappear under correction of errors of refraction, of constipation, and of any form of

malnutrition or debility. The author believes that the fungus in the follicles in such cases may be entirely eradicated, and permanent recovery secured for many of them, by the periodic application of pure carbolic acid. The application is made about once in 10 days with a needle as direct and complete as possible to all the hair follicles of the margin of the lid. About the fifth day after each of these treatments a crust of epidermis exfoliates and should be removed and a little yellow oxid of mercury ointment applied. The second group of cases are those which present an excoriated, glazed, red, rounded appearance of the tarsal margin, with no sign of lash. Applications of phenol greatly reduce the thickening of the lid and a fair growth of lash appears. A third group is that in which an abundant accumulation of inspissated sebum mats the lashes together in groups. Reynolds says that in cases in which alopecia is present without ulceration or apparent desquamating conditions, or such as may be due to parasitic or microphytic causes, in persons who have neither syphilis nor leprosy the application of phenol often produces brilliant results. [C.A.O.]

4.—Operations for Astigmatism.—A. E. Davis calls attention to a case reported by G. J. Bull, in which complete tenotomy of the left external muscle relieved the muscular insufficiency and incidentally cured the astigmatism in the left eye. Another case is cited in which astigmatism was produced by tenotomy of the recti muscles. In each instance the operation was performed primarily to relieve an insufficiency of the ocular muscles. Other operations, such as paracentesis of the cornea, section of the cornea, and galvanocauterization of it, have been suggested as a cure for astigmatism. Davis believes that no one of these proposed operations for the cure of astigmatism is a justifiable procedure, except in the most extreme cases, as in keratoconus. [C.A.O.]

5.—Summer Complaints of Infants.—This paper by C. G. Kerley is based upon an observation of somewhat over 3,000 cases of summer diarrhea which were treated to a conclusion of the illness. Change in the diet is more important than all other measures in the management of these cases, that change being a substitution of a carbohydrate, in the nature of a cereal gruel, for the milk food. The milk must be removed entirely from the dietary and must be removed early, and must not be resumed until the temperature is normal, the stools thick and but two or three in 24 hours. One or two drams in each feeding may then be used noting the effect on the temperature and stools. The carbohydrates should be used in the form of barley or rice, gruel, plain, or dextrinized. When flavored with salt, sugar, or beef products, they furnish the best milk substitute. They should be given in the same amount as the child was accustomed to receive in ounces of milk in health, but at more frequent intervals. Half an ounce of the cereal to a pint of water is the usual strength. Raw starch, such as rice or pearl barley, should be cooked for three hours. Calomel in small, frequent, repeated doses is given, if there is a tendency to vomit. Two teaspoonfuls of castor-oil is given by preference on account of its prompt washing out effect. Bismuth subnitrate is of great value and must be given in doses of from .7 gm. 1.4 gm. (10 grs. to 20 grs.) every hour. In order to be of service it must be converted into bismuth sulfid in the intestines, forming black stools. Dover's powder in from $\frac{1}{4}$ gr. to $\frac{1}{2}$ gr. doses every two hours is indicated when there is tenesmus and straining with frequent stools. Irrigation is indicated in cases with high temperature and inactive bowel. Normal salt solution is the best irrigating fluid and may be used as cold as 70° F. in the high fever cases, and as hot as 110° F. in those with low temperature and extreme prostration. For the fever and restlessness, sponging with alcohol and water, equal parts at 80° F. is ordinarily employed. Kerley says the best prophylactic agent against summer diarrhea is a well baby properly fed all the year round. In the case of tenement children safe milk must be supplied, ice furnished, and the mothers taught the details of infant management. [C.A.O.]

6.—See *American Medicine*, Vol. V, No. 21, p. 814.

7.—Torsion of the Testicle.—A case is reported by W. W. Williams in a boy of 16, who had a sudden attack of pain in the right groin and testicle. A distention of the right inguinal canal and great tenderness of the right testicle was

found. The hernia was reduced, but the pain in the testicle continued. The epididymis was turned toward the front; upon turning the testicle about half way around on its axis the boy got immediate relief. A truss was put on the hernia and he had no further trouble for almost a year, when the pain suddenly returned more severe than before. The testicle was found enlarged and tender, and the epididymis turned to the front. The testicle could not be turned in either direction. An incision was made, and the testicle and lower portion of the cord were black, caused by the strangulation. The cord was ligated high up and the testicle removed. [C.A.O.]

8.—A case of polyneuritis complicating whooping-cough is reported by C. J. Aldrich in a boy of 4. The attack of whooping-cough was very severe. During the fourth week it was noticed that he was weak in his legs, and that he shortly began to complain of pain in the toes and ankles, which were slightly swollen and tender to the touch. Soon after this the patient manifested sensible loss of hand-grasp, with swelling and tenderness of the hands and fingers. Nasal speech developed and fluids were regurgitated through the nose. There was also diminution of the kneejerks, loss of both plantar reflexes, and some slight loss of touch and pain sense in the hands and feet. The palate was paralyzed. In about 12 weeks the boy appeared as well as ever. The kneejerks were absent for over four months. [C.A.O.]

Medical News.

June 13, 1903. [Vol. 82, No. 24.]

1. Colchicum in the Treatment of Gout. CHARLES C. RANSOM.
2. Four Months' Experience with Antistreptococic Serum in Pulmonary Tuberculosis. S. G. BONNEY.
3. The Origin of the Eosinophiles and Their Diagnostic and Prognostic Importance. THOMAS R. BROWN.
4. The Morbid Anatomy and Pathology of Tabes. JOSEPH COLLINS.
5. Leukoplasmia in Secondary Syphilis. DOUGLASS W. MONTGOMERY.

1.—Colchicum in Gout.—C. C. Ransom reviews the history of the drug from ancient times and the diverse opinions as to its action. He concludes from his own observations that it does not augment urinary secretion and the uric acid and urea are unaffected. He invariably uses colchicin, and does not believe in pushing it to the point of purgation. Small doses should be given in the intervals between attacks. This relieves the discomfort of chronically affected joints and prevents acute exacerbations. Retrocedent gout is less likely to occur when colchicum is used. In cardiac degeneration it should be given with care. Nephritis is not a contraindication. [H.M.]

2.—Antistreptococic Serum in Pulmonary Tuberculosis.—S. G. Bonney has employed this as a last resort in desperate cases, the sputum containing large numbers of streptococci. The report covers 25 cases treated in four months in which a favorable climate and supervisory control failed to arrest the disease. One case presents improvement so remarkable as to insure permanent recovery. In another there was speedy termination of a streptococic pneumonia, another recovered from severe septic pneumonia following hemorrhage in tuberculosis, four others show marked improvement with probability of ultimate arrest, five cases exhibit definite improvement with uncertain prognosis, eight cases show some improvement, but not enough to modify an unfavorable prognosis; in three cases the effect was doubtful, in three there were no results. In many cases urticaria developed in three to ten days after injection. [H.M.]

3.—See *American Medicine*, Vol. V, No. 7, p. 249.

5.—Leukoplasmia in Secondary Syphilis.—D. W. Montgomery reports the case. A man of 37 came under observation, having contracted syphilis one year previously and had not been vigorously treated. Under treatment by the author several refractory and painful mucous patches in the mouth and on the tongue gradually healed and were replaced, particularly on the anterior dorsum of tongue, by areas of leukoplasmia. While the secondary syphilis was believed to be the prime factor in causing the condition there were local causes which doubtless contributed materially. These were alcohol, smoking, and ill-kept teeth. Rheumatism also doubtless played some part as a general cause. Of four previous cases of leukoplasmia hitherto reported as arising from secondary syphilis three were in women, though in general the condition is more fre-

quent in men. The patient is slowly growing better under mercury, but tobacco and alcohol have doubtless retarded the favorable progress of the case. [A.B.C.]

CLINICAL MEDICINE

DAVID RIESMAN

A. O. J. KELLY

REVIEW OF LITERATURE

Diastolic Murmurs Without Lesions of the Aortic or Pulmonary Valves.—R. C. Cabot and E. A. Locke¹ report four cases encountered during the past year in which a diastolic murmur during life led to the suspicion of aortic régurgitation, but in which autopsy proved the aortic valves to be normal. Detailed notes of the cases are given. The first is thought to belong to the group of cases in which the murmur is caused by genuine regurgitation, due to dilation of the valvular ring. The other three appear to belong to the class of cases studied especially by Sahli, when the murmur is supposed to be due to intense anemia. In one of the three there might have been temporary dilation of the aortic ring, because an accompanying chronic glomerulo nephritis caused high blood-pressure. For the other two there is no better explanation than that of extreme thinning of the blood, though this explanation does not seem to the writers by any means a satisfactory one. [A.G.E.]

Acute Meningitis, with Recovery.—O. Fischer² reports a case in which a young man of 19 presented a seropurulent discharge from the ear, with all the typical symptoms of acute meningitis. Lumbar puncture gave a cloudy fluid, which was rich in polynuclear leukocytes, but no microorganisms. The absence of bacteria in the cerebrospinal fluid is of no significance, according to Fischer; cases which at autopsy showed the presence of a virulent type of meningitis gave a sterile cerebrospinal fluid when lumbar puncture was performed. The author believes that because of the early discharge of the pus the infection of the meninges was too slight to cause death. Fischer concludes that a patient with a well-developed secondary meningitis is not always doomed to death. The primary focus of pus, whether it be acute or chronic, should be immediately evacuated. Even in well-established cases of meningitis the degree of infection may be so slight that death will not follow if further infection be prevented. [W.E.R.]

Behavior of the Healthy and Diseased Animal Peritoneum.—Clairmont and Haberer³ have performed experiments on 200 rabbits to determine the absorbing power of the healthy and diseased peritoneum. The results of these experiments are as follow: 1. Increased peristalsis accelerates peritoneal absorption. 2. The absorptive power is not changed through one inflation of the abdominal cavity with air. 3. Intraperitoneal injection of sterile fluids, as urine, intestinal contents, do not interfere with peritoneal absorption; the same may be said of intestinal contents entering the abdominal cavity through a perforation. 4. At the beginning of peritonitis, serous absorption is accelerated; toward the later stages it is slowed. 5. After dry laparotomies, it is markedly retarded. 6. Moist laparotomies disturb absorption much less. 7. Narcotics influence absorption differently, depending upon the anesthetic used. 8. It is retarded very much when the diaphragmatic peritoneum is destroyed. 9. Transudation of the abdominal cavity is not markedly affected by laparotomy. [E.L.]

Congenital Edema of the Left Arm.—F. J. Collet and Maurice Beutter⁴ report an example of this condition in a woman 27 years old. The family, previous and personal history, was unimportant. The condition was discovered accidentally when examining the patient's lungs. The circumference of the arm on the left high up was 23 cm.; on the right, 23 cm. At the lower third the circumference on the left was 29 cm.; on the right, 23 cm. The circumference of the forearm at the middle part was on the left 34 cm.; on the right, 20 cm. There was a true edema. Pressure, especially on the back of the hand,

caused a depression which persisted for a long time. The patient claimed that she had had the condition since birth. Congenital trophoedema is rare. The author found only the cases of Nouné, Tobiesen, and Rapin. [J.H.W.R.]

Negative Features of Sterilized Milk.—The use of sterilized milk for infant feeding is meeting with more and more opposition. A host of deleterious results are being attributed to the sterilizing process, which bids fair to become abandoned in the near future. N. P. Daniloff¹ has made a series of 175 analyses of milk subjected to high temperatures and draws the following conclusions: The alleged germicidal action of sterilization can only be obtained by temperatures of such height as to destroy the nutritive value of milk; milk subjected to sterilization undergoes quantitative and qualitative alterations which impair its digestibility and vital properties; these changes are physical and chemical in character and render the milk positively harmful as an infant food; such milk, when used over long periods, lowers metabolism, deranges digestion, and furnishes insufficient material for nutrition and growth. The result is frequently constitutional or metabolic disease. Sterilization is thus seen to be a noxious procedure. By means of scrupulous cleanliness in preserving and preparing the raw milk far better results could be obtained in artificial infant-feeding. [L.J.]

Traumatic Pericarditis, Endocarditis, and Myocarditis.—J. H. Pleasants² gives the clinical, and in one case the autopsy, notes of two cases of pericarditis and one of endocarditis in which the causal relation of trauma seems unquestionable. One of the first two patients was thrown from a carriage the other received a blow in the left axilla from a piece of scantling. The latter had also a myocardial infarct. Four other cases are recorded in literature. In one of the writer's cases the injury is believed to have resulted from *contrecoup*. The case of endocarditis occurred in a football player as the result of a kick on the chest. A tabulated summary of 14 reported cases of acute and chronic traumatic endocarditis, developing into valvular disease, accompanies the article. [A.G.E.]

Immunization Against Albuminuria.—Albuminuria follows subcutaneous injection of albumin in rabbits, and is also seen in man, if the diet is very markedly albuminous. It has been proved by specific precipitating serums that this excreted albumin is composed both of eggalbumen and serumalbumin, thus proving that this albuminuria is the expression both of an elimination of a strange, superabundant albumen as well as of actual injury of kidney cells. By means of repeated injections of albumen into rabbits, Hamburger³ has found that the albuminuria gradually diminishes, to disappear completely after the fourth to sixth injection. An immunization of the kidney cells against this albuminuria may therefore be spoken of, inasmuch as albumen is found in the blood in sufficient quantities to produce albuminuria. Alimentary albuminuria may also be immunized against through subcutaneous albumen injection. He finds it impossible to explain this immunizing phenomenon. [E.L.]

Influence of Fats on Gastric Digestion.—K. Walko⁴ finds that the administration of olive oil in small or large doses retards and diminishes HCl secretion. A retardation of gastric motility is also observed. Oil may therefore be used to advantage in the treatment of hyperacidity which is often associated with hypermotility. The presence in the stomach of a fat splitting ferment has been demonstrated frequently. The amount of this ferment is greatest after milk diet, less after meat diet, and least after administration of carbohydrates. The administration of oil does not influence proteid digestion and favors starch digestion. It also has a favorable influence on the constipation which so frequently accompanies hyperacidity. Bone marrow has the same good effect as olive oil, is pleasanter to take, and has a high nutrient value. The author has administered olive oil therapeutically and finds it of great and permanent value in almost all cases of hyperacidity. He has also used atropin and sodium bicarbonate but finds them to be of no benefit, and sometimes even harmful. Carlsbad salts are more useful

¹ Johns Hopkins Hospital Bulletin, May, 1903.

² Prager medicinische Wochenschrift, April 2, 1903.

³ Wiener klinische Wochenschrift, November 6, 1902.

⁴ Lyons Médical, April 5, 1903, p. 545.

¹ Russki Vrach, February 15, 1903.

² Johns Hopkins Hospital Bulletin, May, 1903.

³ Wiener klinische Wochenschrift, November 6, 1902.

⁴ Zeit. für Heilkunde, Bd. xxiv, 1903, Heft v.

and give some permanent results. It seems not improbable that the cause of hyperacidity is to be found in a diet confined exclusively either to meat or to carbohydrates. Hence, a change of diet is of great benefit in the treatment of this condition. Milk and carbohydrates are badly borne but cream and butter are well taken by these patients. [B.K.]

GENERAL SURGERY

A. B. CRAIG

MARTIN B. TINKER

C. A. ORR

EDITORIAL COMMENT

Methods of Intestinal Anastomosis.—The *Lancet*¹ is authority for the statement that the earliest description of intestinal suture is found in a somewhat obscure passage in the Sanscrit Veda; that Celsus advises the use of sutures for wounds of the large intestine, but says nothing as to how they are to be employed; that Galen favored suturing the stomach and large intestine, but warned against usual death from suturing the small intestine. It is further stated that the Arabian physician, Abulcasis, recommended catgut for suture of the wounded bowel, and that Roger, of Parma, and Roland in the thirteenth century made use of a little elderwood tube, which was placed within the bowel and the edges of the wound were united with silk. All of this, together with much else that is recorded should serve to remind us that the principles involved in the present multiplicity of methods in intestinal anastomosis are old rather than recent. It was not that our medical forefathers did not appreciate the feasibility of intestinal anastomosis which prevented its becoming a customary surgical procedure, but rather that sepsis and death were almost universally consequent upon laparotomy. The first successful resection and anastomosis of the bowel was performed by Reybard in 1833, some three inches of the colon being removed. In 1836 Dieffenbach resected the gangrenous bowel involved in a strangulated hernia, did an anastomosis, and the patient recovered. These cases considering the condition of surgery at that time are phenomenal, and because of this and the rarely successful performance of laparotomy then, they remain conspicuous in surgical evolution. It was not, however, until surgical cleanliness made it reasonably safe to enter the abdominal cavity that intestinal suturing or anastomosis became more than a surgical curiosity. Since the attainment of this comparative safety an array of methods, which for variety and ingenuity are truly remarkable, have been introduced, each having its enthusiastic advocate. The authority previously quoted places the number at over 200. The multiplicity is a sufficient commentary upon the fact that no one method possesses many and distinct advantages over all others. Mayo Robson's bone-bobbins were ingenious and served a useful purpose, but are now rarely used; Senn's plates are less popular than formerly; Halsted's inflatable rubber cylinder is now not much employed; the ingenious methods of O'Hara and Laplace have never become widely popular; and Abbe's catgut rings are now no longer used. In this connection, however, distinction should be made between those methods which leave a foreign body within the gut to assist in the approximation, and those like the devices of Halsted, O'Hara, etc., which merely assist in effecting the operation. Among the former the mechanic apparatus which has undoubtedly achieved the widest popularity and use is the ingenious metal button of Murphy. It has served a most useful purpose and is still widely employed, but the evidence is plain that its popularity is distinctly waning. In the hands of the less skilful and in emergency cases it will remain an exceedingly useful device, but the present tendency among those skilled in visceral surgery is to discard any and all methods which require that a foreign

body be left within the intestine, unless speed, often an important factor in intestinal anastomosis, is urgent. There is an ever-present danger, even if not great, in leaving an extraneous body of considerable size in this situation. Of the various methods of effecting anastomosis by suture none appears simpler and easier than that of O'Hara, and yet complaint has been made that it leaves a diaphragm within the lumen of the gut, which practically amounts to a stricture. There are certain inherent disadvantages in relying on any mechanic device to assist in effecting the operation; it may not be at hand; it may be out of order—any one of many hindrances may occur. Manifestly then the fingers of the surgeon, together with needle and thread, are the only implements which can at all times he relied upon, and the progressive abdominal surgeon will cultivate his manual dexterity in this regard. What particular method of suture anastomosis he shall choose, whether lateral implantation, lateral anastomosis, circular enterorrhaphy, or the ingenious methods of Maunsell, Wiggin, Connell, and others, depends entirely upon the choice of the operator and the exigencies of the case. The probabilities are, however, that the near future will see a reduction rather than an increase in the number of methods and devices actually used, and that the suture alone will be the means chiefly employed by the skilful surgeon even when time is an important factor.

REVIEW OF LITERATURE

Actinomycotic Appendicitis.—L. Therenot¹ reports the case of a patient of 18, a farmer, who was in the habit of chewing grass, wheat, corn, etc. He developed symptoms of appendicitis, which disappeared somewhat under medical treatment. In the right iliac fossa a mass remained, however, which was painless to the touch, movable and doughy; it was adherent below to Poupart's ligament. A diagnosis of actinomycotic appendicitis was made and confirmed at operation. The appendix was removed and drainage inserted; the intraappendiceal liquid did not contain the fungi, but they were found in the granulations lining the tract. The wound healed very slowly, until tincture of iodine was applied locally, and potassium iodide given internally in doses ascending to 6 grams (90 grains). The author recommends the latter treatment very enthusiastically. The differential diagnosis of ordinary and actinomycotic appendicitis is discussed at some length. [E.L.]

Sarcoma of the Tongue.—A. D. Fripp and R. H. J. Swan² tabulate 29 cases of true primary malignant connective tissue tumors of the tongue, the remainder of the 44 cases published under the title of sarcoma of the tongue being excluded because of insufficient proof, secondary involvement, etc. The age of the patients varied from 7 weeks to 65 years. There were 17 males and 8 females among the 25 cases in which age is stated. The small round-cell variety of sarcoma was the most frequent. Symptoms are usually not present until the growth interferes mechanically with mastication or deglutition. The mucous membrane covering a lingual sarcoma is in most cases thinned and healthy. The lymphatic glands in the submaxillary space were enlarged in six cases, three of which showed sarcomatous involvement. The submaxillary salivary gland was enlarged in three cases. In the two removed the swelling was found to be inflammatory. The other, left *in situ*, regained its normal size two weeks after removal of the lingual tumor. The enlargement in these cases is possibly due to pressure on Wharton's duct by the growth in the tongue. The general health of patients with sarcoma of the tongue remains good until secondary visceral deposits have appeared or the mass becomes large enough to interfere with deglutition or respiration. Of the 29 cases 25 were operated upon and 11 recovered, remaining well for varying periods ranging from 13 years to 6 months. Seven may be considered cured. [A.G.E.]

The Transverse Incision in Laparotomy.—Ignacio Plasencia³ was the first to introduce this operation into Cuba.

¹ Gazette des Hôpitaux, 1902, Vol. lxxv, p. 1277.

² The Practitioner, May, 1903.

³ Revista Medica Cubana, December 1, 1902.

The curved incision crosses the median line about four centimeters from the symphysis pubis, beginning and ending at the crest of the anterior superior spine of the ilium. The transverse incision passes through the skin and aponeurosis, but when the recti muscles are reached they are divided vertically. The fascia transversalis and the peritoneum are treated as in ordinary laparotomy. After opening the abdomen the patient is placed in Trendelenburg's position and the incision held open to give space for operation. The peritoneum, muscles, and aponeurosis are sutured with catgut, the skin with silk in separate places. Drainage tubes are inserted at the median line. The author used sterilized silver foil over the wound after suturing. When this method is used there is little danger of hernia, because the incision is transverse to the muscular tissue. The scar moreover does not show when the patient stands. An account of two clinical cases in which the operation was entirely successful follows. These present no important features beyond the uneventful and complete recovery of both patients. [G.C.D.]

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

EDITORIAL COMMENT

Age Limit in Uterine Carcinoma.—Although the maximum incidence for the occurrence of carcinoma of the uterus is between the fortieth and fiftieth years, yet the possibility of its development earlier should not be overlooked, and probably should be more frequently emphasized. This fact has been strongly brought to our notice recently by the observation within three months of three patients suffering from well advanced cervical cancer before thirty years of age. In two of them the disease was so extensive as to contraindicate surgical interference. As we have repeatedly said, eternal vigilance is required for the early diagnosis of this insidious disease; and these cases in point indicate the necessity for careful examination and early operation in bad lacerations of the cervix; for it is extremely rare for a nulliparous woman to suffer from cervical cancer unless she has been subjected to some operation or instrumental treatment. When the disease occurs early during the period of sexual activity, its extension is very rapid and recurrence almost inevitable, so that we are confronted by the melancholy truism that we know little about, and can do little for, well defined cases of uterine carcinoma. The chief prophylactic measure is the repair of lacerations of the cervix which are extensive enough to produce an eversion of the cervical mucous membrane, whether they are symptom producing or not.

REVIEW OF LITERATURE

Conservative Nonoperative Treatment of Women's Diseases.—A. Pincus¹ gives an illustrated description of an apparatus which he employs in the conservative treatment of the female genital organs. He recommends the hot vaginal douche and its modifications in all cases in which the promotion of elimination favors the absorption of inflammatory masses. This method must not be used without precautions, but the physician must determine the indications for beginning the treatment by the control of the pulse and temperature, and the sensitiveness of the pelvic organs through bimanual examination. So long as there is the least rise in temperature present, or there is excessive sensibility of uterus or appendages, he advises to wait before treatment; as he believes that in the acute or subacute stages of such diseases there should be complete rest in order to obtain the best results, even to the omission of any examination. Even vaginal examinations, introduction of tampons, or irrigation, in an acute stage of the disease are to be avoided and cold applications should be used, such as an ice-bag on the abdomen, or in case of necessity opium suppositories. In suitable cases he uses tampons and massage in connection with other treatment. But massage is often used

most illogically and should never be employed for hysterical women. In such cases the hot water is the rational remedy. He has used what he calls the resorption cure successfully for the hematocele of extrauterine pregnancy, in many cases of perimetritis, oophoritis and salpingitis, and especially in long-standing pyosalpinx. Great care must be exercised that no exacerbation of tissues arises from the hot douches; constant watch must be kept over pulse and temperature. Pincus repeats in conclusion that he is not an absolute opponent of operative treatment; but it should be resorted to only after other methods in all suitable cases have been tried and have failed. [W.K.]

Pregnancy and Labor Following Nephrectomy.—J. F. Baldwin¹ reports two cases in which unilateral nephrectomy has been done, the women having afterward married and passed through a normal labor. The urine in Case II was normal throughout the pregnancy, and was also apparently normal in Case I. [D.R.]

Therapy of Hematocele in Extrauterine Pregnancy.—F. Schenk² says that we should operate usually not only in cases of uninterrupted extrauterine pregnancy, but also in interrupted pregnancy with the formation of hematocele, since another attack of hemorrhage, or long uterine bleeding, or appearances of decomposition may set in. In uncomplicated hematocele the waiting method without operation may be followed. The advantage of early operation is that the operation may be more conservative than if it has to be done later under unfavorable conditions. [W.K.]

Treatment of Uterine Fibromyomas.—F. W. N. Haulbain³ reported nine years ago 20 cases treated by electricity. He has traced the subsequent history of 15. Of these 9 were cured, in 2 hemorrhage recurred, in 2 the tumor continued to grow, and in 2 others underwent active degenerative changes. In soft, edematous fibroids, removal of the appendages is valuable. Vaginal myomectomy may be performed for stalked growths or submucous polypi, especially when the cervix has already been dilated by the downward growth of the tumor or thinned by pressure. It is a debatable question how far conservative surgery warrants us in proceeding in the removal of sessile, subserous, and interstitial tumors by the abdominal route, as the risks of lengthened manipulation are great and the organs doubtfully serviceable. When symptoms call for hysterectomy, Haulbain prefers the supravaginal abdominal method as the quickest. He believes that electrical treatment is decried because it has been used in unsuitable cases, as submucous tumors, in which it tends to aggravate hemorrhage by stimulating uterine contractions. In interstitial tumors of medium size it seldom fails, and if it does, no harm is done. Diagnosis of the variety of tumor is important in all cases, and can be achieved only by dilation of the cervix and digital examination of the uterine cavity. [H.M.]

Contemporaneous Extra and Intrauterine Pregnancy.—K. Reifferscheid⁴ relates the history of iipara, aged 26, strong and healthy, admitted to the hospital because of pain and persistent hemorrhage. Examination resulted in a diagnosis of left-sided ectopic gestation with a possible intrauterine three months' pregnancy. Median abdominal incision was made, left tube and ovary removed, the adherent parts of omentum resected and all done with the most careful consideration for the large pregnant uterus. Operation occupied 20 minutes. Convalescence was ideal, and the intrauterine pregnancy, undisturbed, ran on its normal course. [W.K.]

Epidemic Parotitis with Metastasis to the Female Genitalia.—A summary of the literature of the subject leads G. McNaughton⁵ to state that the localization of the disease in the region of the ovaries is in mumps more frequent than commonly mentioned in textbooks. He reports the case of a girl of 18 who, as the parotitis began to subside two weeks after a menstrual period, experienced pain in both ovarian regions. After two days a bloody flow appeared. The pain was severe enough to require the use of an opiate for five days. The case

¹ Cleveland Medical Journal, May, 1903.

² Münchener medizinische Wochenschrift, April 21, 1903.

³ Edinburgh Medical Journal, March, 1903.

⁴ Zentralblatt für Gynäkologie, March 21, 1903.

⁵ Pediatrics, May, 1903.

¹ Berliner klinische Wochenschrift, April 6-13, 1903.

is believed to be an illustration of the specific poison of parotitis affecting the female genitalia. The term genitalia instead of ovaries is used because the writer believes it impossible to exclude pelvic inflammation or engorgement beside that of the ovary. [A.G.E.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPLEMAN

REVIEW OF LITERATURE

Aftereffects of Aspirin.—Unpleasant aftereffects, especially skin eruptions, are not so common after aspirin as after other compounds of salicylic acid. A patient of Otto's¹ took a 1 gram (15 grains) powder and shortly after was attacked with violent itching, followed by a board-like swelling of the skin of the entire body and the mucous membrane of the mouth, throat, nose, etc. After a second powder of 1 gram (15 grains) the symptoms of itching and tension of skin became almost intolerable; violent thirst, oppression, dizziness, and vomiting set in and later the entire body became covered with deep red elevated spots; the eyes were completely closed by edema of surrounding structures. A similar case is related by Meyer after 1 gram (15 grains) of aspirin. [E.L.]

The Solution of Menthol.—The value of menthol as a local anesthetic is sometimes interfered with on account of its insolubility in water. De Crescentignes² recommends for the proper preparation of menthol solution, or more properly emulsion, the use of soap bark, as in the following prescription:

Menthol . . . . .	.03 gram	(.5 grain)
Tincture quillaia	5 cc.	(75 minims)
Glycerin	9 cc.	(2.5 drams)
Water enough to make	120 cc.	(4 ounces)

A tablespoonful at a dose.

The menthol is dissolved in the tincture of quillaia, the glycerin added first, and then the water with constant stirring. In this way there is formed a permanent emulsion.

It is counterindicated in gastralgia. For local use de Crescentignes recommends the following:

Menthol . . . . .	.13 to .32 gram	(2 to 5 grains)
Tincture quillaia	9 cc.	(2½ drams)
Water enough to make 150 cc.		(5 ounces)

For a gargle this prescription may be diluted with 6 to 8 times its volume of water. It must be remembered, however, that soap bark is a local irritant and that its active principle, saptoxin, is a powerful protoplasmic poison, and we believe the following formula recommended by Wilber³ is therefore frequently preferable:

Menthol	1 gram	(15 grains)
Chloroform	5 cc.	(75 grains)
Spirit of camphor	10 cc.	(2½ drams)
Alcohol	20 cc.	(5 drams)
Soft soap	15 cc.	(4 drams)
Oil of wintergreen	2 cc.	(30 minims)

Mix for internal use. [H.C.W.]

Treatment of Simple Jaundice.—A. Robin⁴ reports the case of a young woman suffering from jaundice which came on as a result of fright. In such cases Robin begins treatment by placing the patient on a purely milk diet, which acts in two ways: It increases diuresis and causes the biliary and intestinal toxins to be more easily eliminated. It also lessens biliary secretion and in this way modifies hepatic activity. This diet should be continued until there is a modification in the urine as follows: In making Gmelin's test for biliary pigments in the urine, when it is noticed that the green discoloration is replaced by a mahogany discoloration it denotes the presence of urobilin or hemaphein which indicates that the biliary passages are open. The presence of urobilin indicates that there is insufficiency of the liver; it is then necessary to stop the milk diet and stimulate the hepatic functions by other food and by alkalis. In order to hasten the flow of bile, 10 mg. to 16 mg.

(½ gr. to ¼ gr.) of belladonna extract may be given night and morning. The rectal injection of 1½ quarts of water at the temperature of the room acts as a stimulant to biliary secretion, the biliary passages and the intestine. These injections should be given by means of a soft catheter inserted high into the rectum, and should be repeated twice daily. Vichy water is useful when taken in the morning and at night, or a solution of sodium bicarbonate may be substituted. The food should not comprise raw materials nor acids, fats, butter, sauces, or stewed articles. Constipation, if present, may be relieved by sodium sulfate. [L.F.A.]

Adrenalin an Abortive Agent in Asthma.—Aronsohn¹ used adrenalin in a solution of 0.5 gm. (7½ grains) to the ounce to cut short an asthmatic attack. He applied it directly to several inflamed-looking spots in the nose, and the attack disappeared within five minutes. He employed it successfully in several recurrences with the same patient. He does not see a curative agent in it, but considers it superior to cocain as an abortive agent. By diluting it with two parts of oil vaselin it may be used as a spray in cases where the asthmogenic points can not be isolated. [E.L.]

Anesthesin.—Chevalier² gives the results of his study of anesthesin the ethylic ether of paraamidobenzoic acid. It is very slightly soluble in water, more soluble in alcohol, glycerin, and oils. It is a very stable preparation and is absorbed very slowly. Anesthesin is used as a local anesthetic in all such cases as those in which orthoform is employed. Hypodermic injections of anesthesin have not given very satisfactory results. Chevalier considers it superior to orthoform because its action is more pronounced and of longer duration. No toxic symptoms have been observed. [L.F.A.]

The Value of Exercise in the Treatment of Pulmonary Tuberculosis.—Trjœn³ takes exception to the prevalent idea in the treatment of tuberculosis that all that is necessary is to have the patient gain weight. A large deposit of fat is neither a sign of health nor a source of strength. The use of properly modulated exercise is not only harmless but a very valuable aid in the cure of pulmonary tuberculosis. It increases the assimilation of food, brings about freer circulation of the air in the lungs as well as the blood through the body and heightens vital resistance. He is convinced that in his sanitarium the patients have done better since the introduction of regular exercise as part of the treatment. The exercise should not be begun until subsidence of the severer symptoms, and should be at first very light, a couple of half-hour walks along the level. Gradually the amount may be increased so that five or six hours daily may be spent in walking, preferably in "broken doses," with a portion of it in ascending hills. Sometimes "lung gymnastics" are useful. [H.C.W.]

Yearly Variations in the Strength of the Official Digitalis Leaves.—The variations in the strength of digitalis leaves have been known for a long time. Focke⁴ concludes from his observations in practice that the greater part of these variations arise in the drug store and are connected regularly with the portion of the year in which the preparations are sold. The leaves used in July and August (immediately after harvest) are four times as strong as those displaced by them. Until the beginning of October they lose half the strength, until January two-thirds, and until summer three-quarters. After observing this in actual practice he demonstrated it also by animal experiments. Cases of poisoning are therefore more common, and occur with smaller doses in the second half of the year than in the first. When occurring in the first half the doses have invariably been found to be very large. [E.L.]

Mercuriol.—H. Dreesman⁵ uses mercuriol, a combination of mercury and nucleinic acid, in leg and other chronic ulcers, in the form of a 2% to 5% ointment; in soft chancre and granulating wounds as a dusting powder; in gonorrhœa as a ½% to 2% injection; in syphilis internally in doses of 0.05-0.1 grains (¼-1½ grains) twice daily. [E.L.]

¹ Deutsche medicinische Wochenschrift, February 12, 1903.

² Klin. therapeutische Wochenschrift, 1903, Vol. x, p. 258.

³ Amer. Journ. Pharm., 1902, 74, 590.

⁴ Bulletin Général de Thérapeutique, Vol. cxiv, No. 9, 1903, p. 325.

¹ Deutsche medicinische Wochenschrift, January 15, 1903.

² Bulletin Général de Thérapeutique, Vol. cxiv, No. 10, 1903, p. 371.

³ Zeitschr. f. Tuberkulose u. Heilstät., 1903, iv, 208.

⁴ Zeitschrift für klinische Medizin, 1902, Vol. xlv, No. 5.

⁵ Münchener medicinische Wochenschrift, February 3, 1903.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended June 13, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
Alabama:	Mobile.....May 30-June 3.....	3	
California:	Fresno.....May 1-31.....	13	
	Los Angeles.....May 23-30.....	4	
	San Francisco.....May 24-31.....	4	
Connecticut:	Stamford.....May 1-31.....	1	
Florida:	Columbia County.....May 23-30.....	1	
	Duval County.....May 23-30.....	4	
	Escambia County, Pensacola.....May 23-30.....	2	
	Leon County.....May 23-30.....	5	
Georgia:	Atlanta.....May 23-June 3.....	2	
Illinois:	Chicago.....May 31-June 6.....	12	
	Danville.....May 31-June 6.....	1	
Indiana:	Indianapolis.....May 31-June 6.....	2	
Iowa:	Des Moines.....May 31-June 6.....	1	
Louisiana:	New Orleans.....May 31-June 6.....	4	
Maine:	Bucksport.....June 3.....	1	
Maryland:	Baltimore.....May 30-June 6.....	1	
Massachusetts:	Fall River.....May 30-June 6.....	9	
Michigan:	Detroit.....May 28-June 6.....	17	1
	Flint.....May 23-June 6.....	2	
	Grand Rapids.....May 28-June 6.....	4	
	Port Huron.....June 1-3.....	1	
Nebraska:	Omaha.....May 29-June 6.....	3	
New Hampshire:	Nashua.....May 29-June 6.....	9	
New York:	New York.....May 29-June 6.....	1	
	Rochester.....May 24-June 7.....	3	
Ohio:	Cincinnati.....May 28-June 5.....	4	1
	Cleveland.....May 30-June 6.....	5	
	Hamilton.....May 30-June 6.....	1	
	Toledo.....May 16-30.....	8	
Pennsylvania:	Altoona.....May 29-June 6.....	3	
	Erle.....May 29-June 6.....	1	
	Johnstown.....May 29-June 6.....	1	
	McKeesport.....May 29-June 6.....	2	1
	Philadelphia.....May 29-June 6.....	31	4
	Pittsburg.....May 29-June 6.....	9	6
South Carolina:	Charleston.....May 28-June 6.....	4	
Tennessee:	Memphis.....May 23-June 6.....	6	
Texas:	San Antonio.....May 1-31.....	2	
Wisconsin:	Milwaukee.....May 23-June 6.....	51	

SMALLPOX—INSULAR.

Hawaii:	Honolulu.....May 7.....	1	
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SMALLPOX—FOREIGN.

Austria:	Prague.....May 16-23.....	4	
Belgium:	Antwerp.....May 16-23.....	6	
	Brussels.....May 16-23.....	8	
China:	Hongkong.....Apr. 11-25.....	2	
	Shanghai.....Apr. 24-May 2.....	3	
Colombia:	Barranquilla.....May 17-24.....	1	
	Bocas del Toro.....May 19-26.....	5	
France:	Paris.....May 16-23.....	1	
Great Britain:	Dublin.....May 16-23.....	12	4
	Dundee.....May 8-16.....	5	
	Liverpool.....May 16-23.....	49	6
	London.....May 16-23.....	19	
	Manchester.....May 16-23.....	14	
	Newcastle-on-Tyne.....May 8-16.....	3	
	Sheffield.....May 8-16.....	4	
	South Shields.....May 8-16.....	1	
	West Hartlepool.....May 16-23.....	2	
India:	Calcutta.....Apr. 11-18.....	3	
Russia:	Moscow.....May 8-16.....	4	
	St. Petersburg.....Apr. 25-May 16.....	103	10
	Warsaw.....Apr. 18-May 2.....	5	

YELLOW FEVER.

Colombia:	Panama.....May 18-June 1.....	10	6
Costa Rica:	Limon.....May 21-28.....	3	2
Mexico:	Coatzacoalcas.....May 23-30.....	1	1
	Progreso.....June 3.....	1	
	Tampico.....May 23-30.....	8	5
	Vera Cruz.....May 23-30.....	16	4

CHOLERA—INSULAR.

Philippines:	Manila.....Apr. 11-May 2.....	52	47
	Provinces.....Apr. 11-May 2.....	1,342	729
	Not previously reported.....	81	79

CHOLERA—FOREIGN.

India:	Calcutta.....Apr. 11-18.....	129	
Turkey:	Damascus.....Mar. 29-Apr. 13.....	33	

PLAGUE.

China:	Hongkong.....Apr. 11-25.....	130	119
India:	Calcutta.....Apr. 11-18.....	588	
Peru:	Callao.....To May 12.....	10	4

Changes in the Medical Corps of the U. S. Army for the week ended June 13, 1903:

MABRAY, WILLIAM C., contract surgeon, Columbus Barracks, ordered to San Francisco, Cal., with recruits, is granted leave for ten days, the leave to begin and end at San Francisco, when Contract Surgeon Mabry will return to his station.

PEASE, LOUIS W., contract surgeon, leave granted on surgeon's certificate is extended one month.

GREGORY, WILLIAM G., contract surgeon, leave granted on surgeon's certificate May 14 is extended one month.

PEDDICORD, HARPER, contract surgeon, will proceed, via Skagway, Alaska, and the White Pass Railroad, to Fort Gibbon, Alaska, for duty, to relieve Contract Surgeon Verdo B. Gregory, who will proceed to Vancouver Barracks, and report for temporary duty.

STEDMAN, CHESTER J., contract surgeon, now in Washington, D. C., will proceed to Fort Adams for duty.

HATHAWAY, First Lieutenant LEVY M., assistant surgeon, now at Vancouver Barracks, will proceed to Fort Davis, Alaska, by steamer, sailing from Sea tie, Wash., June 6.

VAN KIRK, HARRY H., contract surgeon, is granted leave for twelve days from about June 4.

WICKLINE, W. A., contract surgeon, is granted leave for one month, to take effect when relieved by Contract Surgeon H. L. Wood, with permission to apply for an extension of fifteen days.

HADRA, FREDERICK, contract surgeon, is granted leave for twenty-one days from about June 10.

JENKINS, FRED. E., contract surgeon, is granted leave for thirty days from about June 11.

GREGORY, WM. G., contract surgeon, is relieved from further duty in the division of the Philippines, and upon the expiration of his present sick leave will proceed to Fort Apache for duty.

BANISTER, Major JOHN M., surgeon, is relieved from duty at the First Reserve Hospital, Manila, P. I., and will report to the commanding general, department of Luzon, for assignment to duty.

RUTLEDGE, JAMES C., contract surgeon, is granted leave for one month, with permission to visit China and Japan, to become available when his services can be spared.

WILSON, ROY A., contract surgeon, is relieved from further duty at the Presidio and will proceed to his home, Dennison, Ohio, for annulment of contract at his own request.

WHITCOMB, First Lieutenant CLEMENT C., assistant surgeon, now at San Francisco, Cal., is relieved from further duty in the division of the Philippines, and will proceed to Governor's Island, N. Y., and report to the commanding general, department of the East, for assignment to duty pertaining to the Army and Navy maneuvers during the ensuing year.

ROBERTS, D. M., contract surgeon, leave granted May 6 is extended two months.

Changes in the Medical Corps of the U. S. Navy for the week ended June 13, 1903:

SPRATLING, L. W., surgeon, detached from the Navy Yard, New York, and ordered to the Columbia—June 6.

LEACH, P., surgeon, detached from the Columbia and ordered to the Massachusetts—June 6.

BLOCK, W. H., acting assistant surgeon, detached from the Naval Recruiting Station, Chicago, Ill., and ordered to Navy Yard, New York—June 6.

STEELE, J. M., surgeon, detached from the Massachusetts and granted leave for six months—June 8.

Surgeons Means, Cordelro, Wieber, Norton, Kite, Wentworth, Decker, Berryhill, Stone, Pickrell, Crandall, Harris, Urle, McCormick, Arnold, Wilson, Stokes, Stitt, Gates, Lowndes, Barber, Rothganger, Smith, Lung, Von Wedekind, Bogert, Spratling, Kennedy, Blackwood, Braisted and Evans commissioned surgeons, with rank of lieutenant-commander, from March 3, 1903—June 8.

Passed Assistant Surgeons Orvis, Kerr, Narr, Grow, Grunwell, Langhorne, Thompson, Benton, Carton, McCullough, Furlong, Agency, Bell, Curl, Bell, Holcomb, Parker, Wright, Plummer, Odell and Taylor commissioned passed assistant surgeons, with rank of lieutenant, from March 3, 1903—June 8.

MORGAN, D. H., passed assistant surgeon, detached from the Boston and ordered to Naval Hospital, Mare Island, for treatment—June 8.

RENNIE, W. H., VERNER, W. W., KOHLHASE, O., and ROSSITER, P. S., doctors, appointed assistant surgeons from May 25, 1903—June 9.

SMITH, W. B., and HOEN, W. S., doctors, appointed assistant surgeons from June 2, 1903—June 9.

GRAYATT, C. U., medical director, retired on account of disability incurred in active service—June 10.

ANDERSON, F., medical director, detached from the Alabama and ordered to the Brooklyn—June 10.

BYRNES, J. C., surgeon, ordered to the Texas—June 10.

DECKER, C. J., surgeon, ordered to the Alabama—June 10.

STOKES, C. F., surgeon, ordered to the Navy Yard, League Island, Pa.—June 10.

PICKRELL, G., surgeon, detached from the Texas and ordered to the Iowa—June 10.

SMITH, R. K., passed assistant surgeon, detached from the Independence and ordered to duty at the Naval and Marine Recruiting Stations, San Francisco, Cal.—June 10.

KINDELBERGER, C. P., passed assistant surgeon, detached from the Iowa and ordered home to wait orders—June 10.

FARENHOLT, A., passed assistant surgeon, detached from the Boston and ordered to the Concord—June 10.

ELMER, M. K., assistant surgeon, detached from the Ranger and ordered to the Independence—June 10.

HUNTINGTON, W. H., pharmacist, retired from active service on account of disability incident to service—June 10.

Changes in the Public Health and Marine-Hospital Service for the week ended June 11, 1903:

CARMICHAEL, D. A., surgeon, leave of absence for seventeen days from May 19, 1903, granted by Bureau letter of May 9, amended so that it shall be for thirteen days only—June 6, 1903.

EAGER, J. M., passed assistant surgeon, granted leave of absence for two months from August 1—June 9, 1903.

GARDNER, C. H., passed assistant surgeon, granted leave of absence for seven days—June 5, 1903.

PARKER, H. B., passed assistant surgeon, directed to report at Washington, D. C., for temporary duty—June 8, 1903.

VOGEL, C. W., assistant surgeon, granted leave of absence for one month from June 8—June 5, 1903.

LLOYD, B. J., assistant surgeon, reported to Passed Assistant Surgeon R. Blue, Plague Laboratory, San Francisco, Cal., for temporary duty—June 9, 1903.

BREADY, J. E., acting assistant surgeon, granted leave of absence for three days—June 6, 1903.

MCCONNELL, A. P., acting assistant surgeon, granted leave of absence for two days from June 10—June 8, 1903.

MASON, W. C., acting assistant surgeon, granted leave of absence for ten days from June 17—June 9, 1903.

RODMAN, J. C., acting assistant surgeon, granted leave of absence for thirty days from June 20—June 9, 1903.

WALKLEY, W. S., acting assistant surgeon, granted leave of absence for seven days from June 11—June 9, 1903.

ALLEN, G. C., pharmacist, granted extension of leave of absence for twenty-three days from June 5—June 8, 1903.

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The Medical Charities of London.—*The Lancet* of June 6 includes a supplement in support of the Metropolitan Hospital Sunday Fund, which shows at a glance the vast amount of work that is being done by the hospitals and dispensaries of greater London. One is astonished to find that there are 204 of these in all, 31 general and 60 special hospitals, 57 cottage hospitals and Convalescent Homes, and 56 Dispensaries. In 1902 these treated 128,974 in-patients, and 5,025,058 out-patients, and 406,108 accidents and emergencies. In all the institutions there were 8,692 deaths during the year. They received from the Hospital Sunday Fund award, \$289,045. The progress of this fund is shown in a table in which the total fund in 1873 was \$138,500, rising fairly steadily to \$313,345 in 1902. How many of these millions could have paid for the medical service would of course be mere guessing, but the constant increase of the total amount of such charitable work, the growing difficulty of securing voluntary support, the doubts and injustices contingent upon "bad years" bring always nearer the thought that some more stable manner must be devised of meeting the difficulty.

The Newspaper Mouth Padlocked.—We have noticed with satisfaction the extensive, continual, and habitual quotation from the columns of *American Medicine* by the lay press, but our interest has been more constantly excited by the fact that articles on one class of subjects is never quoted. Any facts or articles *e. g.*, upon patent medicines are received in utter silence, so far as the newspaper is concerned, and as Hans Breitman would say, are at once lost in die Ewig-Keit. A correspondent at last points out the reason. He called the attention of a "syndicate writer," one whose specialty was humorous articles on popular fads and fancies, to the field open to him in the exploitation of the nostrum drinkers, the electric belt men, the oil-of-mustard actina people, the women with wires about their ankles connected with a wonder-working liquid yonder, etc. In especial was pointed out the man who had taken 792 bottles of patent medicines, washed down with two gallons a week of a prized mineral water. He had failed to support his family, and had the ungratefulness to die. The fun-maker saw the opportunity and regretted his inability to work the vein. The newspapers and their writers could nag the Christian scientists, and such,

every day, because these do not advertise. But to touch the sacred alcoholic nostrum traffic, the magnetic belt business, and all that, that of course would be suicide, speaking from a newspaper point of view. And suicide is not in their intent at present. They, the solemn "guardians of public morality," prefer their mouths padlocked and the key given to the patent medicine syndicates.

Medical Editors in Newspaper Offices.—The newspaper accounts of the operations performed by famous foreign surgeons that have visited and are visiting this country have, in many instances, been entirely erroneous, and unjust to the visitors and to our American surgeons. The visiting surgeons have been credited with having performed operations that had never before been done in the United States, although they had never made such a claim for themselves. Such statements bring the visitors into disfavor with their American colleagues, and also lessen the respect in which our surgeons are held by the public. It appears to us that a reputable newspaper should have sufficient pride not to print accounts of operations that are the product of the uncontrolled mind of the imaginative reporter without submitting them to a medical man for revision. If it is impossible—and it seems that it is—to prevent the lay publication of medical items, every newspaper should have attached to its editorial staff a competent physician who, as medical editor, should revise all articles pertaining to professional subjects. Newspaper science would then, to some extent, be relieved from the contempt in which it is at present held. Every self-respecting newspaper should feel as much pride in accounts of medical matters as in those of financial, real estate, or other affairs.

The no-breakfast fad illustrates the fatal and foolish tendency of humanity to go from one extreme to another. If we have overeaten or overdrunken let us not eat or drink at all. If we have been hogs let us be angels. People without a sense of moderation and avoidance of extremism who have gorged themselves with animal food feel that they must be vegetarians. No-breakfast is their latest reaction. To the do-nothings and the fussers-about-themselves this nonsense may do no harm, but for people who work with muscle or brain the faddism can do nothing but injury. It will perhaps

end in coffeeism and drugism, or some other pernicious evidence of lack of balance and control. Many Europeans make merry or wax disgusted over "the American breakfast," but they are easily caught up by the observation that they eat late at night, so that in the morning the stomach or intestines are still filled with undigested and unassimilated food. Moreover, they do not fail to pour into the stomach a lot of coffee at breakfast time, and they will also take a late breakfast as one of their five or six meals a day. The stomach should be empty on going to bed, and if so the normal system demands a breakfast of good food soon after rising. Harm may result from the no-breakfast folly if people do not properly regulate their general dietary and personal habits.

Concerning Antimony.—The destructive properties of the salts of antimony have, during the past half century, been from time to time brought with painful prominence under the notice of our British confreres on the other side of the Atlantic. The physical properties of the element itself have long been known to possess great interest for the scientific chemist. Its history savors somewhat even of the romantic. This is in some degree indicated by the account of its—still problematic—etymology given by the great English lexicographer as: "the stibium of the ancients, by the Greeks called *στίμμυ*. The reason of its modern denomination is referred to Basil Valentine, a German monk, who, as the tradition relates, having thrown some of it to the hogs, observed that, after it had purged them heartily, they immediately fattened; and therefore he imagined his fellow monks would be the better for a like dose. The experiment, however, succeeded so ill that they all died of it; and the medicine was thenceforward called *antimoine*, *antimonk*." Johnson, with all his startling roughness, frequently displays a keen, as well as ponderous, appreciation of the ridiculous; and he very evidently could not resist the temptation which opportunity afforded of inserting on his page this preposterous item of mythologic therapeutics. The account is proved false by Basil Valentine's own references in the pages of his quaintly interesting "Triumphant Chariot of Antimony" (English version, 1678) to the very remarkable cures which he had effected by its employment in cases of otherwise desperate diseases occurring among his "Brethren." The medicinal value of the preparations of antimony have for several centuries aroused, at intervals, the very emphatic testimony of enthusiastic advocates. Dr. James, the friend of Samuel Johnson, and (nominal) author of the great Medical Dictionary, in the preparation of many of whose articles the latter is said to have taken a prominent part, was a votary of antimony; and the "powder" which bears his name is now better known than his great lexicon. But of recent years the poisonous properties of antimony have secured more attention than the medicinal.

The Chemistry of Antimony.—The history, as well as the physical properties of antimony, one of the best-known preparations of which was used in the perpetration of the horrible crime for which George Chapman was recently executed in London, is of peculiar interest.

Like other poisons, the preparations of antimony are extensively used in medicine; and always prove most valuable remedies when judiciously employed. The properties of antimony were first brought prominently under the notice of European scientists by the shadowy investigator, Basil Valentine, referred to in the definition of the great English lexicographer already quoted, "Monke of the Order of St. Bennet" (Benedict), whose remarkable work, "The Triumphant Chariot of Antimony," informs the reader that "The Life of no one Man is sufficient for him to learn all the mysteries thereof. It is Venome and a most swift poyson, also it is void of Venome and a most excellent Medicine; whether it be used outwardly or inwardly. Which is a thing hid from most men by reason of their own blindness; and they judge it an incredible, foolish and vain work, because (through their ignorance) it is unknown to them, who can no otherwise be excused, then that they deserve the name of Stupidity. Yet that is not to be suffered in them, because they desire not to learn or be better informed, either here, or elsewhere." The chemical classification of antimony was long regarded as doubtful, but the rapid advances of modern research have thoroughly established its position. It ranks, in the elementary form, as a "metal;" but like arsenic, many of whose properties closely resemble its own, it occupies a place close to the borderline of the "nonmetals." Like arsenic, it is an "irritant" poison, causing inflammation of the mucous membrane of the stomach and intestines when brought into contact therewith. Hence the prolonged use of its preparations in small doses causes the development of symptoms which simulate those of typhoid fever, as was shown in the investigation of the celebrated "Bravo case." Like arsenic, too, its combining power is that of a "pentad," that is to say, one of its atoms possesses the physical property of attaching to it, in the formation of a molecule, five atoms of one of the elements of single affinity, such as hydrogen. It is interesting in this connection to note in passing that when elements of such combining power unite with those whose affinities are of an even number, thus leaving some bonds unsatisfied, the resulting molecular compounds are often peculiarly unstable; they disunite rapidly when agitated; that is to say, they "explode." Nitrogen, which forms (approximately) four-fifths of the bulk of the air we breathe, is an element whose affinities correspond to those of antimony, and all the most violent "explosives" are essentially formed of its compounds. Hydrocyanic acid, too, which is the most rapidly acting—the most *explosive* in its effects—of all known poisons, is a compound of nitrogen.

Newspapers and magazines "For the Home," and "For the Young."—Among the samples of morbid serial literature that we have gathered we notice many that need the attention of the Postmaster-General. Depravity can go no lower than some of these illustrate. To appeal to the ignorant and innocent in the disguise of a "periodical for the home," and sneak into their hands the pollution of the abortionist and purveyor of obscene literature shows a depth of degradation meriting the punishment instead

of the support of the government by extending to the scoundrels the help of the mail department. The meanness of the debauchers is also shown in the fact that these periodicals are furnished at prices far below the cost of printing, the pay, and the profit coming from the filthy advertisements. Let us take one published at 25 cents a year. It has "Household Departments," "For Girls and Boys," "The Family Physician," "For Nurses," etc. In the interlarded advertisement columns are found the following disgusting headings:

"For ladies only. Private tips. Should the number of babies be limited? This book will bring you relief."

"A sure rheumatism-cure."

"Why suffer with kidney and bladder disease?"

"Ladies' never-failing monthly remedy."

"The folly of being good; 4 full-length pictures."

"How to be happy in love."

"An easy road to marriage life."

"A young girl's book of experience."

"Only a boy; for sports only; exposes the wiles of the libertine."

"Free clairvoyance."

"Ladies! Harmless; relief sure and certain."

"Ladies! Our regulators."

"Ladies! If you are afflicted."

"All troubled and despondent women."

"Your fortune free."

"Ladies! I have studied your menstrual periods."

"Gold and California oil stocks."

"Ladies! Our never-failing monthly remedy."

"Ladies! Our monthly-regulating tablets."

"The magic dice."

"Eyebright!"

"A test-medium."

"Catarrh cured!"

"Self-hypnotic healing."

"Ladies, when in need!"

"Stops earache."

"The social hell."

"Lost vitality."

"Weak men cured free."

"To mothers or daughters with female troubles."

"The Philomathean" describes itself as the official organ of the Society of Oriental Mysticism, and devoted to magic, mysticism, astrology, palmistry, hypnotism, spiritualism, occult science, and kindred subjects. It is a monthly, published at Union City, Michigan, at \$1.00 a year, although the editor begs earnestly for subscribers, without money, and says if they can't pay, he will never dun them. It is against the "so-called christian churches," "which have become as whitened sepulchres." There are about 22 pages in this issue of October-November, so we suppose a single issue would be perhaps 11 or 12 pages. There are 9 or 10 pages of advertisements, nearly all of which are "medical." The following are the principal: Olivene, the great female specific, positively cures, etc.; Dr. M. Rogers, the vitapathic healer, positively cures the worst cases of cancer, dropsy, Bright's disease, etc.; The great heart and nerve food cures all affections of the nerves, etc.; The little vitalizers; Dr. Rogers' rheumatic specific; How to live to ripe old age without doctor or medicine; Self-hypnotic healing; Medicine taught by mail; The science of psychraticism; Epilepsy positively cured by Dr. M. Rogers; The living fire, or healing by the power of the spirit; Water of life, a safe pleasant remedy, cures consumption, disease of the sexual organs,

etc.; Elixir of youth, for the cure of nervous debility, lost manhood, and the rest; Consumption positively cured; The magic belt of India gives health and 100 years of life; White magic; A new work on sexual debility. The larger part of the advertisements are by the New Union Publishing Company, which is the publisher of *The Philomathean*, or by the editors of that journal. The editorial page says this periodical is entered as second-class matter.

Ruined Eyes from a Professional Error.—In the private office of capable oculists there frequently appear patients, one of whose eyes has been ruined by a widespread error. The large hospital clinics get many more such cases, and altogether there are certainly thousands of such blunders every year. A child has strabismus or a high degree of heterophoria so that during several years one eye at least has been out of function. The mother reports the matter thus: "My doctor told me to let it go until the child is seven years old, and the eyes would then come straight, or they could be operated on then." There is a growing suspicion among patients that this advice is not all due to professional blundering, but is sometimes in the interests of the consultant operator, to whom the parents are urged to go. Three things at least are beyond question: 1. With every month of delay the disused eye is losing its power of vision, and at the age of seven it is often too late to save the vision. 2. The cure is not effected either spontaneously or by operation. 3. The prevention of the condition can be brought about without operation. The advice to postpone is inexcusable.

Yellow Journal Lies.—Is there not some way of stopping the lies of the newspaper dispatches as regards medical matters? Can not the readers of the papers do something to make the editors punish the egregious reporters and authors of their press-dispatches? For years there has been a constantly recurring outbreak (every summer especially, when news is scarce) of stories of triplets, quadruplets and even quintuplets born in some family in some far-away part of the country. There is always an exact giving of name, place and date. We have repeatedly investigated these reports and have never found even a rag of truth in them. Recently there has been republished all over the country such a circumstantial press-report of the adoption by Mr. and Mrs. John Shandrow, of South Haven, Mich., of twenty-two orphan children. There was no truth whatever in the report. Why does the ordinary yellow newspaper prefer lies to truth? To one of our hospitals there recently came, as a patient, a man who had made a fine income for years inventing such stories. He had an especial art in concocting medical and scientific nonsense and falsehoods with an air of truth about them intended to deceive the ignorant. His work was "syndicated" and illustrated. When taken sick he was writing an account of a new species of eels he had discovered that walked on their tails, he said, and he had told many absurd yarns about hospitals, medical men, etc., whose gratuitous aid he now sought. He said the newspapers that paid him for his stuff knew perfectly well what they were buying.

AMERICAN NEWS AND NOTES.

GENERAL.

Pulmonary Tuberculosis in Hawaii.—The mortality report of the Board of Health for the last month shows an unusual percentage of deaths from pulmonary tuberculosis. Almost 20% of the deaths were due to that disease.

To Navigate the Air.—M. Santos-Dumont is trying a 60-horse power motor airship, "No. 7," intended for the St. Louis exposition. He expects to make his first ascension in a fortnight, and says he will go to St. Louis unless the prize of \$100,000 is reduced, in which case he will not attend because of the heavy expense. He expects "No. 7" to be capable of making fifty miles and hour.

Miscellaneous.—CHICAGO, ILL.: Dr. Wm. L. Ballenger, has been elected professor of otology, rhinology, and laryngology, at the College of Physicians and Surgeons. He will fill the vacancy made by the resignation of professor M. R. Brown. Dr. J. Elliott Colbrun, has been elected professor of ophthalmology in the Eye, Ear, Nose, and Throat College, Chicago. Dr. U. S. Christopher has resigned as Professor of Pediatrics in the College of Physicians and Surgeons, Chicago.

Philippine Opium Bill.—Secretary Root has decided that nothing further shall be done regarding the proposed opium act of the Philippine Commission until it has had the most careful consideration in Washington. The Commission has been so informed by cable, and the opium bill, which had passed its second reading, will remain in its present condition until the Secretary of War reaches a conclusion. Many protests have been received at the department against the proposed law, and the Secretary has been urged to take steps to prohibit its sale.

Shall Lepers be Divorced?—From Honolulu comes the news that as a result of the report of the United States Senate Committee that visited here last fall, and local agitation, the Board of Health is trying to arrange about 60 divorces at the leper settlement of Molokai, and the assistance of the attorney-general has been invoked. In all the cases under consideration the husband or wife is at the settlement, while the other person is away. These partitions have resulted in conditions at the settlement that the Senate Committee strongly condemned, and it is the opinion of many that the moral situation would be greatly improved if the lepers were free to intermarry at Molokai. The plan has aroused much local opposition, chiefly of a religious nature.

Oppose Patent on Drugs.—The National Association of Retail Druggists has begun a movement looking to the repeal of the patent laws on drugs. An official of the Association gives the following reason for the attitude of the druggists: "Few people know that at present the patent laws of our country make it possible to levy a blood tax on many articles made in Germany, and used by the sick, the very persons the government would naturally be expected to shield from imposition. Our laws should be so changed that no patent shall be granted on articles used for food or for medicine. It is beyond all reason that the inventive genius of Americans and the conspicuous ability of our chemists should be kept down by these laws, especially when the greatest sufferers from the injustice are those least able to bear the burden."

Typhoid Panic in England.—An editorial in the *New York Times* says: "A curious panic has been started in England by the discovery that a large number of infected army blankets from South Africa—many thousands, indeed—'swarming,' we are told, with the bacilli of typhoid fever, have been returned to Great Britain by the speculators who purchased them at the sales of condemned military stores, or acquired them less honestly, and widely distributed at retail. A great many thousands of these blankets have been sold in some 150 English cities, and the discovery of the fact has furnished the London newspapers a first-class sensation. According to British army regulations every discarded blanket condemned and sold at auction must be torn in at least four pieces and invoiced as rags, useful only in the manufacture of wool shoddy. Some of the army blankets found on sale had been neatly pieced together again, and the seams were difficult to distinguish, but many had obviously never been torn at all."

EASTERN STATES.

Myopia and School Life.—Examinations of over 200,000 pairs of eyes and careful tabulation of the results in the Boston public schools show that nearly all children enter the primary schools with normal eyes. In the higher grades one-fourth of the pupils are myopic, and in universities this increases until from 60% to 70% of the students are myopic. In other words, nearsightedness increases steadily from the lower to the higher grades, and in exact proportion to the length of time devoted to the eyestrain of school life.—[*Annals of Gynecology and Pediatrics*, Boston, Mass., May, 1903.]

NEW YORK.

Children's Hospital on Randall's Island.—Plans have been filed with the Building Bureau by architects for the city for a new Children's Hospital to be built on Randall's Island. It is to be a two-story building of brick and marble, 112 feet front and 44 feet deep, and will cost \$30,000.

Tuberculosis Congress for St. Louis, 1904.—At the annual session of the American Congress on Tuberculosis held recently in New York the new council provided for the revised constitution of last year was elected and was instructed to arrange for the Congress of Tuberculosis at St. Louis in 1904. Proper officers, embracing many of the wellknown physicians of the country, were elected.

Changes at Columbia Medical College, N. Y.—The announcement of courses for 1903-04 at the College of Physicians and Surgeons of Columbia University, just issued, shows a radical reorganization in the curriculum and teaching staff. President Butler is planning to place the medical school on a postgraduate basis similar to that of the school of laws. No student will be permitted hereafter to take medical work who has not completed three years' course in a scientific school or college, or who has not passed the Columbia entrance examinations. The course for the last two years will lay greater stress on bedside practice. The inclusion of laboratory work in chemical pathology with that in pathologic anatomy and plain pathology is an innovation. The fourth year man will spend most of his time in hospital and dispensary work.

PHILADELPHIA, PENNSYLVANIA, ETC.

The new home for the nurses of Cooper Hospital (Camden, N. J.), erected by the board of trustees from endowment funds at a cost of \$30,000, has been formally opened.

New Insane Hospital for Pennsylvania.—The commission elected by the Legislature of Pennsylvania for 1901 to secure the site and erect a building for the Homeopathic State Hospital for the Insane has bought a tract of land containing 200 acres near Allentown, on which the hospital will be erected.

Bill Giving Homeopaths Charge of Certain Wards in Philadelphia Hospital Vetoed.—Mayor Weaver has vetoed the bill which was lately passed by City Council giving control of five wards in the Philadelphia Hospital into the hands of the homeopaths. The reason given by the Mayor for his action is because the bill provided that the physicians and surgeons to be appointed to take charge of these wards should be nominated by Hahnemann College.

Smallpox in Bordentown, N. J.—The State Board of Health has been called upon to assist in preventing the spread of smallpox in Bordentown. There are now 12 cases and a number of suspects. An appeal was made to the Trenton Health Board for the use of the municipal hospital, but the consequences to that city were feared. The Bordentown authorities have begun the erection of a pesthouse. The epidemic has caused almost a complete suspension of business in Bordentown.

Kerosene Debauch.—According to the police of the city it is not an unusual thing for boys to become intoxicated by inhaling the fumes from kerosene. The vicinity where these debauches have been observed is usually in the neighborhood of the railroad yards, where the empty oil cars are stationed. The method of obtaining the fumes is for the boys to climb upon the tank car, place their noses over the manhole and thus inhale the fumes. The effects produced are similar to those produced by alcohol: First a feeling of exhilaration, then a period of stupor, and following is the period of deep sleep. It is stated that in several instances boys, drunk from these fumes, have been taken to hospitals in the vicinity. From the meager amount of observation in such cases it is believed that the effects on the system are similar to those produced by alcohol.

Red Bank Sanitarium.—Dr. Martin, Director of Public Health, with his able staff of advisers, has discussed with Mayor Weaver the all important subject of milk supply in the city of Philadelphia, together with the best means of alleviating the suffering of the city's poor children in the slum districts during the summer months. The proposition to establish summer tents in Fairmount Park for the care of suffering children was abandoned in favor of the plan to establish tent hospitals at Red Bank, N. J., five miles below Philadelphia. Here a number of tents will be erected and 25 nurses employed during the summer months to care for the children. In this work the health authorities are working in conjunction with the Red Bank Sanitarium Association, whose boats run hourly to and from Philadelphia, carrying the children to the ample playgrounds, shaded lawns, and bathing places at Red Bank. The Red Bank Sanitarium Association has heretofore accomplished great work in thus caring for the poor children of the city during the summer months. In some instances as many as 5,000 children have been conveyed from the city to the associator grounds at Red Bank and returned in a single day. The cooperation during the present summer with the city authorities will doubtless vastly increase the good work accomplished in this particular line.

WESTERN STATES.

New Hospital for Englewood.—A hospital which will be a four-story, brick building, 147 by 147 feet in dimensions, with a capacity for 150 patients, is to be built at Englewood in the near future. The cost is estimated at \$120,000.

Notice to Milk Shippers.—The Bulletin of the Chicago Health Department, week ended June 6, gives the following as a notice to milk shippers, from Dr. Reynolds, Commissioner of the Health Department: "Milk-cans must be clean inside and out. No matter how clean a can looks, before using it should be washed with hot soap suds, rinsed with clean water and then scalded. Milk shipped in dirty cans is liable to confiscation."

Cheap Pasteurized Milk for Chicago.—Nathan Straus, of New York, has offered to equip a plant in this city for the pasteurizing of milk. The offer of Mr. Straus was made to the Children's Hospital Society and was accepted. The plant will be situated somewhere in the West Side and pasteurized milk will be sold at cost, about two cents a pint. The hospital society is without funds and an effort will be made to raise \$5,000 to buy pure milk for poor children.

Two Sanatoriums for Colorado Springs.—An attempt is being made to secure funds to erect two sanatoriums in Colorado Springs, one for the poor who cannot afford the expense of treatment and another for those who are able to pay for their care. It is believed by those having the matter in charge that the receipts from the institution which receives pay for the treatment of patients will pay the expenses of both. The estimated cost for each hospital is \$200,000.

FOREIGN NEWS AND NOTES

GENERAL.

Ozone to Purify Water.—The Chemical Congress at Berlin has revived interest in the feasibility of purifying water by means of ozone. Just how this may be accomplished has not been made clear, but since scientists have already demonstrated that ozone may be liberated in water by a process of electrolysis it is assumed that some such means may be instituted for ozonizing the water. Should this be found practicable it may in time work a revolution in the process of purifying water. It is said that tests were made with water artificially impregnated with the most deadly germs, including cholera and dysentery, that the water was pumped through an ozonizing tower and then carefully analyzed. All the germs were found to be killed, while the passage of water through sand filters failed to kill many of them. Another feature of less importance is that the presence of the increased amount of oxygen in the water from the process improves the potable quality. It is said that Weisbaden already has a small ozonizing plant, and so far as reports go it appears to be successful. How the plan will work on a more extensive scale yet remains to be demonstrated.

GREAT BRITAIN.

Insurance Against Appendicitis.—The recent increase in the popular knowledge of appendicitis has given rise to the idea that it occurs more frequently than is really the case, and in consequence a London Assurance Company now issues special policies guaranteeing to holders all the medical, surgical, and nursing expenses, up to the amount insured, incurred in an attack of this malady.

OBITUARIES.

Isaac N. Love, of New York City, June 17, aged 55. He was graduated from the St. Louis Medical College in 1872. He was the city physician of St. Louis for a time, and an instructor in the St. Louis Medical College. He devoted special attention to the diseases of infancy and childhood. In 1887 he became secretary of the Pediatric Section of the Ninth International Medical Congress at Washington and president of the Mississippi Valley Medical Association. Two years later became professor of pediatrics in the St. Louis College of Physicians and Surgeons; he was also elected president of the Section of Diseases of Children of the American Medical Association, and one of the trustees of the American Medical Association Journal; he was also chosen president of the American Editor's Association. He was one of the charter members of the Marion Sims College of Medicine in St. Louis. In 1890 he issued the first number of the *Medical Mirror*, of which he continued editor until his death. Of late years, he devoted himself especially to editorial work. He moved to New York City three years ago, and became a member of the County Medical Association, and of the New York State Medical Association.

Albert T. Henley, in Birmingham, Ala., June 2, aged 54. He was graduated from the New York University in 1869 and had served as medical inspector of State convicts for twelve years. He had also served as President of the Jefferson County (Ala.) Medical Association and was senior councillor of the Alabama State Medical Association.

Robert Boal, of Lacon, Ill., in Peoria, June 12, aged 97. He was graduated from the Medical College, of Ohio, Cincinnati, in 1828. He was a member of the American Medical Association, founder and president of the Illinois State Medical Society, and was one of the trustees of the Deaf and Dumb Asylum at Jacksonville, Ill.

Orpheus Everts, of Cincinnati, O., June 19, aged 76. He was graduated from the Rush Medical College, Chicago, in 1876. Since 1880 he had been superintendent of the Cincinnati Sanatorium. He has made a number of contributions to medical literature on the use of stimulants and the treatment of the insane.

Julius A. Crane, in Santa Ana, Cal., June 6, aged 58. He was graduated from the Cleveland Medical College in 1870, and was formerly superintendent of the Agnew's California State Hospital for the Insane.

Charles T. Pepper, at Grasland, Va., May 28, aged 74. He was graduated from the University of Virginia, Charlottesville, in 1855. He had served as a surgeon in the Confederate Army during the Civil war.

J. Robert Shaw, in Ashland, Wis., June 2. He was graduated from the College of Physicians and Surgeons, Baltimore, in 1887, and was a member of the American Medical Association.

John Gillespie, of Warnersburg, N. Y., died at Silver City, N. M., May 26, aged 44. He was graduated from the University of Pennsylvania, Philadelphia, in 1880.

Charles J. Wright, of Glenville, Ohio, died in Cleveland, Ohio June 1, aged 28. He was graduated from the Cleveland Homeopathic Medical College, in 1898.

John W. Sykes, of Pittsburg, Pa., died at Ocean Grove, N. J., May 29, aged 76. He was graduated from the Hahnemann Medical College, Philadelphia, in 1855.

Alden E. Bessey, of Waterville, Me., June 15, aged 65. He was graduated from the Maine College of Medicine, Bowdoin College, Brunswick, in 1870.

Theophilus J. Batchelder, of Machias, Me., May 26. He was graduated from the Eclectic Medical College of Pennsylvania, Philadelphia, in 1871.

Richard V. Cenn, in Tacoma, Wash., June 1, aged 79. He was graduated from the Bellevue Hospital Medical College, New York City, in 1852.

Hiram K. Jones, of Jacksonville, Ill., June 16, aged 82. He was graduated from the Medical Department of the Illinois College in 1846.

Eibert S. Miller, in Johnson City, Tenn., June 6, aged 83. He was graduated from the Transylvania University, Lexington, Ky., in 1846.

Lucius Nutting, at Helena, Mont., June 22, aged 81. He had studied medicine in Chicago but gave up practice half a century ago.

Curtis E. Marriot, in New Kingstown, Wickford, R. I., May 29, aged 62. He was graduated from the New York University, in 1866.

Madison A. Kelly, of Lewiston, Idaho, May 27, aged 75. He was graduated from the Jefferson Medical College, Philadelphia, in 1876.

Edwin K. Fernsler, in Terre Hill, Pa., May 22, aged 61. He was graduated from the Jefferson Medical College, Philadelphia, in 1867.

David McLellan, of West Hoboken, N. J., June 1, aged 68. He was graduated from the Hahnemann Medical College, Chicago, in 1880.

Joseph H. Hilton, in Maywood, Ill., May 27, aged 67. He was graduated from the Miami Medical College, Cincinnati, in 1874.

John M. Brooke, of Portland, Ore., May 24, aged 37. He was graduated from the University of Virginia, Charlottesville, in 1888.

Fiske H. Day, at Lansing, Mich., May 30, aged 77. He was graduated from the Jefferson Medical College, Philadelphia, in 1849.

David A. Pletts, of Brunswick, Me., died at Portland, June 7. He was graduated from the McGill University, Montreal, in 1879.

O. L. Watson, in Montpelier, Vt., May 25, aged 75. He was graduated from the University of Vermont, Burlington, in 1861.

L. F. Calhoun, of Black River, La., June 2. He was graduated from the Kentucky School of Medicine, Louisville, in 1835.

L. S. Rice, of Springfield, Ohio, May 25, aged 72. He was graduated from the Medical College of Ohio, Cincinnati, in 1869.

W. S. Wolfe, of Shoemakersville, Pa., June 17. He was graduated from the Jefferson Medical College, Philadelphia, in 1897.

R. P. Evans, of Franklin, O., May 31, aged 74. He was graduated from the Yale Medical School, New Haven, Conn., 1850.

I. Van Camp, in Omaha, Neb., June 1, aged 74. He was graduated from the Eclectic Medical Institute, Cincinnati, in 1867.

William Y. Thompson, in Luzerne, Pa., May 28, aged 80. He was graduated from the Castleton Medical College, in 1844.

William L. Bradley, of New Haven, Conn., June 13, aged 66. He was graduated from the Yale Medical School, in 1864.

L. V. Lacount, in Merrill, Wis., May 25, aged 60. He was graduated from the Rush Medical College, Chicago, in 1868.

Frederick W. Ruhe, in Louisville, Ky., June 7, aged 37. He was graduated from the University of Louisville, in 1886.

W. C. Baleman, in Butler, Ga., June 5, aged 32. He was graduated from the Atlanta (Ga.) Medical College in 1891.

Chester Howard, in Dayton, N. Y., May 27, aged 35. He was graduated from the University of Buffalo, in 1879.

Joseph L. Carr, of Clarksburg, W. Va., June 9, aged 85.

SOCIETY REPORTS

SIXTH TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Held in Washington, May 12, 13 and 14, 1903.

ASSOCIATION OF AMERICAN PHYSICIANS.

[Specially reported for *American Medicine*.]

THIRD SESSION (CONTINUED).

Studies in the Action of Alcohol Upon the Circulation in Fevers.—RICHARD C. CABOT (Boston), in his experiments, had used the Oliver and Riva-Rocci instruments. Charts were exhibited showing the blood-pressure before, during and after the administration of alcohol. In 41 cases, mostly cases of typhoid fever, 1,105 measurements had been made. The blood-pressure showed no variations that could reasonably be referred to the action of alcohol; its action upon the circulation was nil. The same was found to be true in 309 patients suffering from a variety of diseases in which 2,160 measurements had been made. The writer drew no conclusions as to whether alcohol was useful or useless in disease. As a narcotic and vasomotor dilator it might be of use.

Discussion.—WELCH (Baltimore) called attention to the great diversity of results in experiments upon animals, but said there was one point on which there was uniformity of opinion—that was that alcohol administered to the point of intoxication increased the susceptibility to infectious disease. He thought the selection of the colon bacillus in Hare's experiments unfortunate because of the fact that that particular organism was so readily killed by human blood. He considered that there was no relation between the susceptibility to infection and the bacteriolytic power of the blood as determined in this manner. Great caution, he thought, should be used in applying to the treatment of disease the results of these experiments. JACOB considered the results of Hare's experiments as very conclusive and thought they taught a great deal about the effects that had been-observed clinically for a long while. He had always believed and taught that alcohol should be given in large doses in a number of the infectious diseases. Large doses of alcohol undoubtedly had a most beneficial effect on these cases. ABBOTT (Philadelphia) had found in his experiments that the administration of alcohol to rabbits diminished the hemoglobin complement at first, but later it increased it. Wherever such increase was produced there was found an inflammatory action in some part of the body, which was suggestive of a compensatory action. SHATTUCK (Boston) had had a uniform experience that alcohol did good in infectious cases and thought it capable of saving many of these lives. The clinical proof was so striking, he thought, that until stronger evidence against its value might be produced it was a duty to use it in such cases. MUSSER (Philadelphia) thought its routine use in typhoid fever was not justified. In a series of 80 cases, with no death, he had not used it at all. He used it, however, in cases of septicemia and with good results always. DOCK (Ann Arbor) had not used it for a good many years, and said often the most desperate cases of sepsis would pull through without its use. CABOT (Boston) thought that if the use of alcohol on the principles referred to by Hare and Jacobi was right, then it should be used in a routine way, and not simply in selected cases. If the bacteriolytic power of the blood was increased by the administration of alcohol then large doses should be given in every case. He thought the number of those who use alcohol on the ground that it does increase the protective power of the blood was increasing.

The Morbid Changes in Hereditary Ataxia.—L. F. BARKER (Chicago) considered the brain and spinal cord of two brothers dead of hereditary ataxia, the morphology of the gyri and sulci being described, with a microscopic study of the cord, cerebellum, brain stem and cerebral cortex. The principal changes were extensive atrophy of the direct cerebellar tract and of Clarke's column, on both sides; an elective degeneration of the dorsal funiculi involving the fibers that correspond closely in distribution to the so-called third fetal system of Trepinski. Illustrations of the lesions were shown.

Discussion.—STARR (Philadelphia) said the work had thrown a good deal of light upon the physiology of the muscular centers and established the fact that there were two independent and separate systems controlling the muscular centers.

Autolysis in Lobar Pneumonia.—SIMON FLEXNER (Philadelphia) studied the capacity for autolysis in a number of instances of lobar pneumonia, the special purpose being to throw some light upon the unresolved pneumonias, of which several examples were found to undergo autolysis slightly or not at all. A revision of existing views upon the absorption of exudates seemed necessary.

Discussion.—JACOBI thought that when uncomplicated absorption in lobar pneumonia was always rapid, as it was a surface affection; when complicated with interstitial connective tissue absorption did not occur so rapidly.

[To be continued.]

AMERICAN SURGICAL ASSOCIATION.

[Specially reported for *American Medicine*.]

THIRD SESSION.

The Significance of Albumin and Casts in Surgical Patients.—JOHN C. MUNRO (Boston, Mass.) stated that while he believed that there was no doubt that there was danger in operating on a patient whose kidneys are incapable of sufficient elimination and where there are secondary organic changes, because a patient exhibits a small amount of albumin, hyaline, and fine granular casts with renal cells, the conclusion should not be hastily reached that he is not a fit subject for operation; on the other hand the presence of any of these symptoms should be sufficient to cause a thorough examination. He reported a series of 500 cases showing albumin and casts in the urine, not including those, however, that showed renal degeneration, glycosuria, genitourinary diseases, burns, erysipelas or similar diseases, most of whom were subjected to ether anesthesia, and in none of them was it noticed that any renal damage was inflicted. Out of the series of 500 cases 63 died; 8 from shock; 2 after operation for general peritonitis; 5 from pneumonia; 3 from tuberculosis; 19 from sepsis or severe peritonitis; 4 from senility, and in addition there were deaths from embolism, malignant disease, cardiac disease, skull fractures, and pancreatitis where the role of the urinary organs must have been insignificant. Of the 4 cases in which death was ascribed to senility 1 with cellulitis of the arm had 0.25% of albumin and casts; 1 with intestinal cancer had profuse diarrhea; 1 had a strangulated hernia, and the fourth died one month after fracture of the femur, showing only the slightest possible trace of albumin with hyaline and granular casts.

The Treatment of Aneurysm of the External Iliac Artery by Digital Compression, with Report of a Case.—FRANCIS J. SHEPHERD (Montreal, Canada) referred to the great dangers of surgical interference with the tumor, making amputation of the extremity preferable in many cases to trying to remove the aneurysm. He gave a careful review of the literature on the subject. The advantages of digital compression are that no apparatus is necessary, the finger being the sole means by which the artery is controlled above the aneurysm. This, of course, requires quite a number of assistants, and does not usually require to be kept up more than 24 hours, in the case reported the pulsation ceasing at the end of 12 hours. This case occurred in a man 43 years of age who had strained himself by lifting a heavy weight, and some months afterward a swelling appeared in the left groin, which pulsed; was at first soft and painless, but gradually became harder and seemed to grow upward into the abdomen. The patient objected to operation and it was decided to put him on palliative treatment until the session opened, so that relays of students could be secured. He was put on Tuffnell's treatment and ice-bags applied over the tumor, potassium iodid being given internally and very little fluid. At the end of 12 hours pulsation had entirely ceased, the pain having been severe after the first 4 or 5 hours until the end of 12 hours, being controlled by hypodermic injections of morphin. After 12 hours the patient had no excessive pain but compression was continued in a moderate degree for 12 hours more, when the leg was wrapped in cotton wool and carefully bandaged, he being kept in bed for a couple of weeks more, and six months after the operation, although the tumor could be easily felt, there was no pulsation and it was very hard.

Strangulated Left Duodenal Hernia, in Which the Sac Contained the Entire Small Intestine, the Cecum and a Portion of the Colon.—LEONARD FREEMAN (Denver) referred to the fact that the abdominal viscera and peritoneum are subject to various malformations and malpositions, sometimes acquired and often congenital, and unless the surgeon be familiar with these unusual phenomena his diagnostic ability will be curtailed by confusing conditions, for which he can find no adequate explanation. The peritoneal fossas may be responsible for the most remarkable forms of hernia, and this is especially true of the duodenal fossa. He carefully reviewed the anatomic formation in this region, and reported a case of strangulated left duodenal hernia in a strong, well-developed man 39 years of age. He had always enjoyed good health, with the exception of occasional indefinite abdominal pains, and five days before the author saw him he developed a severe ileus, with the usual symptoms of acute intestinal obstruction, with a pulse of 120, temperature subnormal, and capillary circulation poor. Immediate operation was performed. On opening the abdomen the cavity was found to be occupied by an immense tympanitic tumor, resembling an ovarian cyst, which could be outlined on each side by passing the hand between it and the abdominal walls. Upon opening the membranous sac it was found to contain the entire small intestine, together with the cecum and some six or eight inches of the colon. There was considerable foul and bloody serous fluid, no traces of which existed outside the sac, showing how completely the inner cavity was separated from the outer. The cecum, which was distended with fluid feces to the size of an infant's head and largely gangrenous, lay in the left upper quadrant of the abdomen, just beneath the spleen, in the vicinity of which the swollen appendix was attached by recent inflammatory adhesions. In attempting to relieve the

condition it was necessary to resect the gangrenous cecum, together with some six inches of the large intestine and a considerable portion of the small bowel. In doing this the gut was crushed with an angiotribe, the cut ends invaginated, and the opening closed with an over-and-over suture. A side-to-side anastomosis was then made with the Murphy button between the lower end of the ileum and a loop of the colon in the right iliac fossa, but the patient's resisting powers were so poor and the operation so complicated that death resulted.

[To be continued.]

THE AMERICAN CLIMATOLOGICAL ASSOCIATION.

Twentieth Annual Meeting, Held in Washington, D. C.,
May 12, 13 and 14, 1903.

[Specially reported for *American Medicine*.]

Complications of Pneumonia.—THOMAS D. COLEMAN (Augusta, Ga.) gave increasing mortality from pneumonia as about 21%. The complications discussed were pleurisy, which was stated to be almost a part of the disease; endocarditis, myocarditis, meningitis, venous thrombosis, cerebral and pulmonary embolism and uremia. Illustrative cases were given. Regarding venous thrombosis Da Costa's investigation was referred to in which he could collect only nine cases in medical literature. Steiner, in 1902, collected 38 cases and added three. The latter occurred among the 500 cases treated at the Johns Hopkins Hospital. Dr. Coleman's case occurred in a white male, aged 17. He was admitted to the Augusta City Hospital with the diagnosis of secondary anemia; on physical examination his heart and lungs were found to be normal. Eleven days later he had a chill, the temperature rose to 105° F., and lobar pneumonia was found at the base of the right lung, and extended to the upper lobe. On the sixteenth day phlegmasia alba dolens began in the left leg, and on the twenty-eighth day the right was similarly affected. Recovery took place.

Treatment of Lobar Pneumonia.—GLENTWORTH R. BUTLER (Brooklyn, N. Y.) said that in considering the efficacy of any particular form of treatment we must not forget the very considerable natural variations in the duration of the disease. As it is quite impossible to foretell the probable duration of the individual case the claims of certain over-enthusiastic observers who claim to have aborted the disease are "not proved." Dr. Butler insists on abundant ventilation, light bed-clothing, plenty of water by the mouth or by normal saline rectal injection, and liquid diet, to which is added lactose. Calomel is given at the outset and seven or eight grains of quinin on the first and second day by hypodermic method. Dr. Butler uses the carbonate of creasote, believing that it has been useful in 40 cases to which he has employed it in moderating the fever, diminishing the intensity of the toxic symptoms, the delirium, tremor, and cardiac symptoms. He uses occasionally for pain a tight chest bandage and small doses of morphia or Dover's powder. He has not been favorably impressed with heroin. Unless the temperature is continuously at or over 105° F. it is probably not worth while to attempt to lower it. For this the hypodermic use of quinin is useful and the ice-bag may be applied to the head and chest. Dr. Butler does not sympathize with the therapeutic nihilism commonly observed.

Deathrate of Acute Pneumonia.—THOMAS J. MAYS (Philadelphia) said the disease has not been so fatal during the last five or six years as popular accounts would lead one to suppose. Compared with heart diseases as a death menace pneumonia ranks rather low, judging from statistics. Heart disease seems to be progressing at a much more rapid rate. In the composite chart, which was prepared from reports from 14 States and cities, the total increase of pneumonia deaths is not quite 10%, while those from heart diseases increased 85%. Dr. Mays showed that the natural average decrease in the deathrate of tuberculosis is between 2% and 3% a year. It was shown that the deaths from pneumonia are decreasing; that deaths from disease of the heart are increasing, and that deaths from tuberculosis decreased until five years ago, but have markedly increased since that time. Elaborate charts were exhibited, showing the course of these affections during the last 20 or 30 years in various communities in the United States.

Bronchiectasis in the Tuberculous.—S. E. SOLLY (Colorado Springs) states that the presence of marked bronchiectasis in a case of pulmonary tuberculosis indicated an old chronic case of fibroid phthisis, in which the fibrosis is so extensive as to cause dyspnea upon even moderate exertion. The case reported was that of a woman of 48 years, who had a tendency to catch cold in the spring. Dr. Solly saw her in July, 1902. She had lost about ten pounds in weight, and was anemic and had a moderate leukocytosis. She had afternoon fever, and about a month later tubercle bacilli were found in the sputum. A month after this she had a violent eruption of fetid purulent sputum, scarcely ceasing coughing for several hours. The temperature then dropped from 104° F. to 99° F. These eruptions of pus were repeated and varied in quantity from 16 to 5 ounces in 24 hours. After the eruption there was a partial clearing of the consolidation of the middle lobe. There was no evidence of a cavity, but a dilated bronchus was recognized by

the fluoroscope on the right side. This probably began during the recurrent attacks of bronchitis, or it may have ensued in consequence of the pressure of bronchial glands.

The Cyrtoneter; a Neglected Instrument of Pulmonary Diagnosis and Prognosis.—CHARLES L. MINOR (Asheville) strongly advocated the cyrtoneter and a demonstration of its application was made. Minor used a tape of sheet lead 2 feet long $\frac{1}{8}$ of an inch thick and $\frac{1}{8}$ of an inch wide. It was covered with calfskin and applied to the chest just below the scapulas with the aid of anterior and posterior points fixed by the callipers. Charts were shown which added value to the clinical record of cases observed during the past five years.

The following officers were elected: President, James C. Wilson, M.D., 1509 Walnut street, Philadelphia; vice-presidents, Thomas Darlington, Jr., M.D., King's Bridge, New York City, Thomas D. Coleman, M.D., Augusta, Ga.; secretary, Guy Hinsdale, M.D., 3943 Chestnut street, Philadelphia.

AMERICAN MEDICAL ASSOCIATION.

Fifty-fourth Annual Meeting, Held at New Orleans, La.,
May 5 to 8, 1903.

[Specially reported for *American Medicine*.]

Section on Surgery and Anatomy.

SIXTH SESSION.

The Use of Plaster-of-paris in the Treatment of Fracture of the Femur.—SEXTON (New Orleans) strongly advocated the use of plaster-of-paris in the treatment of fracture of the femur, and reported a case in a child in which he had used this method with great success. An adult patient was presented before the meeting in whose case a very good result was obtained by treatment in this way. The femur had been broken about the middle of the shaft by jumping from the cab of a moving locomotive.

Discussion.—LORD (Omaha) was not prepared to advocate this method of treatment for all fractures of the femur. He believes that we cannot depend upon plaster-of-paris alone in the treatment of fractures in muscular men. On the other hand, the treatment by extension has proved successful nearly everywhere. Fractures of the femur in children are simpler and much more readily treated than in adults. GRANT (Denver) referred to Arbuthnot Lane's treatment by operation and wiring the bones, and believes this to be the method of choice in some bad cases. The old method of treatment by Buck's extension has not yet been improved upon for the treatment of the average cases, however. Grant considers potassium silicate preferable to plaster, as the weight of the dressings is very much less. MAURY (New York) referred to Sayre's chair method of treating fractures of the femur, which has the advantage of permitting the patient to be up if very old. He mentioned dextrin, 10% solution by weight, as a substitute for plaster. If a single layer of dextrin bandage be put on over plaster it makes the cast as hard and firm as steel. It is so much stronger that fenestra can be readily cut in it if it seems desirable in any case.

The Closure of Wounds.—MILES F. PORTER (Fort Wayne, Ind.) Priority or originality was not claimed. Porter finds adhesive strips superior to stitches in the closure of skin incisions, though through-and-through sutures should be used in cases where either tension or sepsis coexist. The advantages of adhesive plaster as compared with stitches are that it can be so much more rapidly used, no stitch holes are left, the approximation is better, there is no danger of carrying infection from the surface to deeper parts of the wound. The plaster is easily rendered sterile by formalin. The especial desirability of avoiding scars about the face, as in harelip operations, was mentioned. The usual methods of using nonabsorbable sutures are not always the best. Porter advises inserting the sutures in such a way that the ends of deep subcutaneous sutures are left out, and they can be withdrawn after healing has taken place. Permanent nonabsorbable sutures he does not find necessary, save in intestinal work. There is especial necessity for avoiding sutures if possible in presence of infection. Other substitutes for stitches are inferior to adhesive plaster.

Discussion.—SUMMERS (Omaha) considers Porter's method ideal for the treatment of skin wounds but in deeper wounds he thinks that stitches are desirable. He would hesitate to depend upon plaster alone in closing the abdomen. PEARCE (Kansas City) called attention to those cases in which the skin of an abdominal incision holds perfectly while the deeper part of a wound may be widely separated. These form a large proportion of the cases in which ventral hernia occurs and through-and-through sutures is necessary to avoid this. MORTON (San Francisco) believes that while the adhesive plaster approximates the skin and possibly the muscles, the fascia, which gives the main strength in healing of wounds, retracts and the edges are widely separated. Sutures through the fascia are necessary to prevent such retraction and give strength to the wound. The danger of inserting sutures under tension causing resulting necrosis was emphasized. PERKINS (New Orleans) called attention to the difficulty of checking hemor-

rhage in such cases as scalp wounds by use of adhesive plaster and the maceration of the skin which would surely follow if plaster was used in hot climates as disadvantages of Porter's method. PORTER, in conclusion, stated that he had no intention of advocating closure of wounds by plaster alone, but only as a means of approximating the skin readily without resulting scar.

[To be continued.]

Section on Obstetrics and Diseases of Women.

THIRD SESSION (CONTINUED).

Discussion.—MASSEY (Philadelphia) expressed belief in the necessity of getting rid of infection previous to operation, and of toning up all the parts by electrical treatment. In retroversion he has never failed to get results. He has usually relieved the symptoms of retroflexion. LEWIS (New Orleans) remarked that before displacement is relieved it is necessary to remove other pathologic conditions. Postural treatment and artificial support often relieve inflammation. As to operative measures he prefers ventrosuspension. DORSETT (St. Louis) said that he had never abandoned the pessary and never expected to do so. It is applicable in retrodisplacement without adhesions. In doing ventrosuspension he opposes attachment of the posterior wall of the uterus to the peritoneum. He has seen no harm by attachment of the anterior wall between the round ligaments. MILLIKIN (Dallas, Tex.) believes that all use the pessary, its use being dependent upon the ability to replace the uterus. THEINHAUS (Milwaukee) insisted that the uterus is a pelvic organ, and that ventrosuspension is not in accordance with physiologic principles. He practises vaginal suspension and usually succeeds in substituting it for a pessary. CARSTENS (Detroit) has used Dührssen's method, but if the organs are once dragged down, vaginal operation does not relieve. He emphasized the necessity of applying the operation to the condition. All operations are sometimes good, sometimes bad. MARCY (Boston) believes that opening the abdomen is usually the best procedure. Then only can the pathologic factors be determined. Shortening of the round ligaments and suspension are both believed to accord with physiologic principles. RICKETTS (Cincinnati) favors opening the abdomen for the treatment of this condition. Suspension he regards as a serious procedure. The dangers of pregnancy should be explained to the patient. As to the use of the pessary, it is often impossible to diagnose diseased ovaries except by sight. LAWRENCE (Columbus, Ohio) believes that unless an operation is based upon philosophic principles it is not successful. One factor of success is the restoration of the tension of the broad ligaments and of the support from below. Pelvic massage has its place. HALL (Kansas City) referred to the fact that nothing had been said of nature's way of correcting these cases. He treats them in the puerperal period by postural method. First in the prone position, later by the knee-chest posture, several times daily. The patient is kept in bed for weeks. He has thus cured, by nature's way, many cases. DUDLEY (New York) quoted from his paper. He has had case after case of pregnancy go to term following ventrosuspension. In doing suspension, the central point between the entrance of tubes is attached loosely to the peritoneum; thus a small ligament is formed. Ventrofixation is considered pernicious. DUNNING wished to consider treatment in all its bearings. He would not trust a member of his family in the hands of a man with nothing but operation in his head. He knows of no accident in labor resulting from ventrosuspension. He has had 10 or 12 cases confined, and has repeatedly examined such cases. BOVÉE opposed the putting of sutures through the skin. He pointed out the special uterine support of the uterosacral ligaments and of the uterovesical attachment, and emphasized the necessity of maintaining this diaphragm. He uses postural treatment, but would hesitate to employ the knee-chest posture soon after labor. The methods he suggests are along the line of physiologic repair.

FOURTH SESSION.

Sarcomatous Degeneration of Myomas.—T. S. CULLEN (Baltimore) says that clinically these cases are not easily recognized. If myomas grow rapidly, have a suspicion of sarcomatous degeneration. The disease is more frequent than heretofore suspected. The sarcoma usually develops in one of several myomas, and may be in the subperitoneal, interstitial or submucous nodule. Formerly supposed chiefly in submucous myomas. Gross changes are characteristic, the firm cross-grained myomatous tissue being replaced by a homogeneous yellowish-white growth, devoid of fibrous arrangement, closely resembling raw pork. Frequent degenerations. Histologically, these develop from: 1. Connective tissue. 2. Myomatous muscle. Those of connective tissue origin may consist of: (a) Spindle-shaped cells. (b) Round cells. In those derived from muscle a direct transition from muscle into sarcomatous fibers can be followed. Clinical history is significant: Myomatous uterus dormant for years, then history of rapid enlargement. If the myoma has been submucous, portions have been expelled, and there is a free offensive discharge. Patient becomes cachectic. Operative significance of laboratory investigations: 1. Whenever sarcoma or carcinoma may coexist with myoma, panhysterectomy is imperative—not amputation

through cervix. 2. Bisection of uterus is contraindicated if malignant growth possible. 3. In every hysteromyomectomy, have assistant open uterus immediately. If carcinoma or sarcoma exist, cervix can be removed without delay, and should be done.

[To be continued.]

Section on Sanitary Science and Hygiene.

THIRD SESSION (CONTINUED).

F. J. MOYER (Lafayette, La.) concluded with a paper on the necessity of establishing a national institute of hygiene on the Chautauquan plan of correspondence, lectures, and summer institutes, as contemplated by House bill No. 63, of 1900, and House bill No. 73, of 1902. This institute would cooperate with those States which would provide for such institutes. He offered the following resolution, which was subsequently unanimously passed by the section:

Resolved, That the Section on Hygiene of the American Medical Association recommends the passage of a resolution by the House of Delegates, endorsing the principle of public education in the fundamental principles of hygiene and the true nature, cause and prevention of contagious and infectious diseases, and the establishment of a national institute of hygiene which would cooperate with the States in popularizing such instruction, and that a special committee of five be appointed to carry out the intent of the resolution, to promulgate a plan toward this end, and to report at the next annual convention of the American Medical Association.

Leprosy from a Sanitary Standpoint.—ISADORE DYER (New Orleans), after giving a general review of the disposition of the leper from the ancient times down to the present, spoke of the methods in vogue at the time of the Berlin Conference in 1897, and showed what the world is doing today with especial reference to particular colonies. Leprosy is undoubtedly communicable, but apparently much more so in some sections than in others. Most countries at the present time are taking measures to prevent the spread of the disease. The bacillus is found in the nasal and buccal cavities, in the ground where lepers have been buried, and it invariably spreads through the community if once admitted. There is no doubt of its being communicable and the most common sources of infection are the nasal and buccal secretions and the genitals. The bacillus is not always found, but the disease exists in spite of the failure to find the bacillus, and these patients, if left to themselves invariably develop the characteristic tubercle. In the past 10 years he has noticed cases where the disease has been communicated to the child from the father. There are various opinions as to the measures to be employed in preventing the communication of the disease. The victim of the disease should either be segregated, or if he lives at home he should have his own room, should wash his own dishes, and should live entirely alone. There is no reason why a new infection could not be grafted on the nervous type of leprosy. The victims should bathe frequently and the public should be educated so that the disease can be recognized and the importance of segregation should be insisted upon.

Discussion.—SWARTS (Providence, R. I.) said that leprosy is seldom brought to the attention of the health officer in the East, but occasionally it does appear. An inhabitant of Providence for five years developed leprosy in the city, and the health officer was at a loss to know what to do with him. Dr. Dyer's paper clearly demonstrates what should be done. BRACKEN (Minneapolis, Minn.) stated that the lepers of Minnesota are almost all Scandinavians, and they came to this country with the disease. There was no case of American born leprosy until two years ago, and since then there are many cases. The disease is without doubt communicable. In Minnesota they are not segregated. There are 14 cases in Minnesota, 2 or 3 in Wisconsin, and 2 or 3 in Iowa. T. G. FRENCH (Hawaii) said that in Hawaii leprosy is epidemic rather than endemic. It was not known 50 years ago, and is supposed to have been introduced into the islands by the introduction of Chinese laborers 50 years ago. The native name for the disease is "mai pake," which translated means "Chinese sickness." Twenty years after the introduction of the disease, one native out of every 30 had the disease. Thirty-five years ago all the lepers were isolated upon one island, Molo Kai, and the disease continued to spread for five years until 30 years ago, when it reached the maximum. Since then the number of lepers in Hawaii has remained about the same. There are 12,000 lepers in Molo Kai. The reason why the disease has not subsided, but has remained stationary, is that suspects are allowed to live in their neighborhood, but must present themselves before the judge of that district once a month for inspection, and he is not segregated until the disease is well defined. There is a hospital in Hawaii for girls of leperous parents, and the development of the disease in these inmates is rare. DYER closed the discussion by saying that a case came under his notice which proved beyond doubt the communicability of the disease: A young woman consulted him for a trophic ulcer of the ball of the great toe, but with no other evidence of the disease. His predecessor, the late Dr. Blanc, had recorded the case seven years previously as one of leprosy. Eight years later the father contracted typical tuberculous leprosy. The nerve type can be communicated as well as the tuberculous type.

ORIGINAL ARTICLES

THE RELATION OF NEURALGIC HEADACHES TO STORMS.¹

BY

S. WEIR MITCHELL, M.D.,
of Philadelphia.

It is interesting to call attention to the fact that the only scientific studies of the relation of disease and pain to the weather have been made by Fellows of this college. Among these are my own essays on traumatic neuralgia, aided by Captain Catlin; Morris Lewis' and my own examination of choreas as related to storms; Wharton Sinkler's paper on "The Causal Relation of High Temperatures to Infantile Palsy;" Morris Lewis on "Acute Rheumatism and Storms"—a model paper. I should add Mills on "Choreas," and many minor studies of my own, where efforts were made to determine how far the pain of posterior sclerosis is due to weather.

I desire at present to call attention to the connection between neuralgic headaches and storms. I have many times tried to induce patients to accumulate material for such a study, but so far I have failed.

It is indeed rare to find a sufferer as able and as willing to deal scientifically with his case as was Captain Catlin. His charts now lie on the table to remind you of a study unique in medical research.

The originating causes of hemicrania are as yet unknown. The determining causes of the separate attacks have never yet been made clear enough to enable the victims to avoid them by precautionary measures.

I asserted long ago that eyestrains are rarely the primary trouble, but may add to the number and exaggerate the force of attacks. I have seen no reason to change my belief. Freedom from fatigue, or, rather, from exhaustion of mind and body, is most apt to lessen the number of headaches; hence changes of place and consequent idleness are likely to relieve for a time, and so also is whatever permanently lifts the level of general health. We see this very often when, after a successful rest treatment, the customary headaches vanish or become rare.

Among the influences which produce this form of pain it is very probable that atmospheric conditions have a potent share.

As in traumatic neuralgia, so in headaches, it is only required to come within the outer limits of storm conditions. The sky may be cloudless and the rain or cloud areas two or three hundred miles away, and yet the sufferer be within the area of barometric depression.

I have at different times been able to convince myself that certain migraines were due to storms, but not, as a rule, to the summer electric storms, which, however, in some hysterical women are sure to occasion a general headache, distinct in character from hemicranial attacks.

I shall not trouble you with details of cases, nor do more than observe that in two of them the subjects, who were physicians, became well assured that the months of storm frequency were those in which they suffered most often and most severely.

Mr. H., of Maine, aged 39, manufacturer, when 23 years of age began to have hemicranial pain at intervals, which, at first long, became more and more brief. The pain was preceded by the sense of being unusually well. Commonly for three mornings he awakened with slight transient pain, resulting, at last, in a violent left-side migraine, with vomiting. There were no eye troubles, paresis, or aphasia. The headache was followed by the usual free flow of pale urine; in other words, it was a

typical case of hemicranial neuralgic headache without notable flushes or pallor. It had one rare, but not exceptional, symptom—an ache in the left crural region, with sensations of numbness. There was no ill health; all the organs were sound; all secretions normal.

For seven years this gentleman kept a record of his attacks and of the means used to aid him. As usual, I asked, "What will cause an attack? What will make attacks severe?" To this he answered, "Overwork, fatigue, much worry or anxiety, severe storms, but not electric storms."

The conditions favoring freedom from pain were absence from home and relief from work.

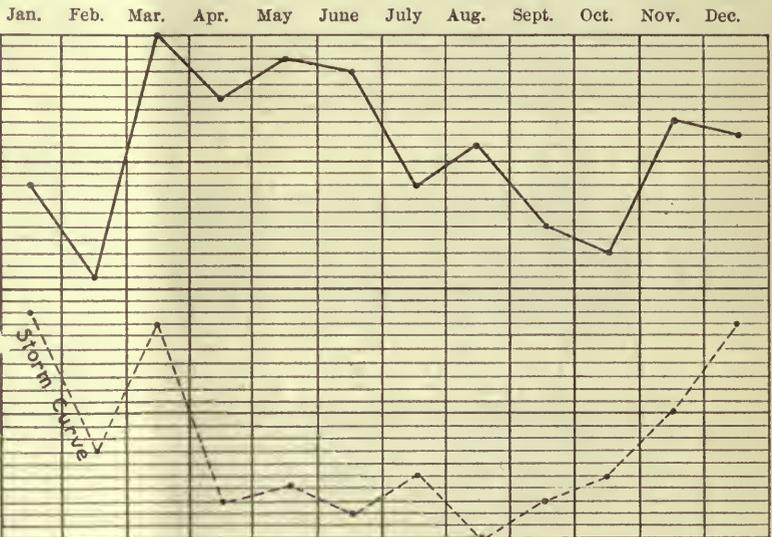
Dr. Alfred R. Allen has been so kind as to make a curve representing the relation of this man's headaches to the time of year.

As the storm curves of the eastern coast vary little from New England to the Chesapeake, I have set below the pain curves the storm curves of our own locality for three years.

As Mr. H. was at times away from home during a month, the pain curves may be thus modified; nor is it possible to be secure of our conclusions until a number of persons shall have kept note of their headaches for two or more years. Nevertheless even the small knowledge we here gain is valuable.

You will see how far the pain curves follow the storm curves; also, how close they are to the chorea curve, which is so clearly related to the storm curve.

March and April are the worst months and October



Monthly average of headaches for seven years (1893-1899). The upper curve is the headache curve.

and February the best. If we could add a curve of business worry and of other causes of anxiety, it would further assist us.

The books have many statements concerning the relation of weather to headaches. It is needless to state them in detail, since, for the scientific study of this matter, the term "headache" is used too vaguely. There is, however, among the later writers a quite general belief that the storm winds favor the production of headaches.

Since, in the books, much is said of barometric pressure as determining headaches, it may be well to state that in Catlin's case low barometer alone had no tendency to bring on his form of neuralgia, and I incline to the belief that the grouped atmospheric conditions which constitute a storm will be found to be in hemicrania, as in traumatic neuralgia, essential to the causation of migraine. It is a question of practical moment and should be readily settled.

Our problem is this: Given a human instrument capable of evolving a group of symptoms, of which pain is the most surely present, what are the agencies which evolve attacks? How far are climatic conditions responsible?

¹ Read May 2, 1903, before the College of Physicians of Philadelphia.

Many of the Fellows must see cases of habitual migraine. If some of their patients could be induced to note on a calendar the dates of headaches during two years, the question of connection between storms and this kind of pain could be surely ascertained. For obvious reasons men should be chosen rather than women.

A CASE OF ENDOTHELIOMA OF THE MAMMARY GLAND.¹

BY

J. CHALMERS DACOSTA, M.D.,
of Philadelphia.

The patient, M. L., was admitted to the Jefferson Hospital, February 2, 1903. She is 31 years of age, resides in Philadelphia, and was sent to me by her family physician, Dr. Kevin. The patient is white, married, a native of this city, and a housewife by occupation. She has had one child, which was born 10 years ago, and there was no trouble whatever with either of her breasts during the period of pregnancy or of lactation.

Both of her parents are dead. The father died of an injury and the mother of pneumonia. Two brothers and two sisters are living and well. There is no family history of tuberculosis or of malignant disease.

Mrs. L. states that she had always been in good health until after the birth of her child. Since that time she has suffered more or less with indigestion. Her menstrual periods are regular, but painful.

Three months ago she detected a nodule the size of a pea in the upper and inner quadrant of the left breast; and this nodule has been progressively enlarging. At first there was no pain connected with it, but during the last month there has been a dull, aching pain in the tumor itself. There has never been a discharge from the nipple. She thinks that she has lost some weight during the past year, but she is not certain.

Examination at the present time discloses a nodular tumor the size of an English walnut, which feels as if it were just beneath the skin. It involves the inner quadrant of the left breast and passes almost under the nipple. The tumor is somewhat irregular in outline, and the center of the mass is distinctly harder than is the periphery; but it is only the central hard mass that attains the degree of density usually encountered in a carcinoma of the breast. The skin is healthy in appearance and freely movable over the growth. There is no dimpling and no pigskin appearance, such as we should expect in a carcinoma of this size so near to the skin. There is an appearance of very slight retraction of the nipple; although it is probable that this is more apparent than real, the growth having raised up about the nipple, rather than the nipple having been pulled in by the fibrous tissue of a growth. No enlarged glands can be palpated in the axilla or about the clavicle. The heart and lungs are normal, and the urine report is negative.

To sum up: A woman of 31, with no record of injury to the breast, or of abscess or inflammation, develops a tumor that in three months has grown to a considerable size; is accompanied with a dull, aching pain; is somewhat irregular in outline, being indistinct at the margins, but having one part at the center that is hard and nodular; the tumor seems to lie directly beneath the skin and the areola.

The form of tumor we are dealing with is a matter of some uncertainty. If there were a history of discharge from the nipple, if the center of the growth fluctuated, or if it were softer than the margins, I should think it probable that we were dealing with a cyst rapidly filling up; but I do not think that this is a cyst. It is not an area of mastitis; the pain is not of the character encountered in that disease, and the tumor lacks the irregularly knobby condition met with in mastitis. It has grown too fast for an innocent tumor. To my mind, it is evidently a malignant growth, but of what character I am uncertain. Thirty-one is an early age for cancer, although it may occur at that age; in fact, I have operated upon one case in a woman of 26. The growth is very rapid for a scirrhus carcinoma, and a carcinoma of this size so near the surface should be adherent to the skin. There should be the evidences of dimpling of the skin or a pigskin appearance, and with a growth right below the nipple it is almost certain that the nipple would be distinctly retracted. The

inability to palpate enlarged glands counts for nothing; they might readily be there, even though we could not palpate them. The rapidity of this growth suggests sarcoma, although in the sarcomas of the breast that I have seen there has been no pain. The immobility of this tumor in the breast tissue and its free mobility under the skin suggest a case of sarcoma.

In view of the uncertainty of the diagnosis before proceeding to operate I make an exploratory incision into the growth. The incision is accompanied by an extraordinary amount of hemorrhage and the growth seems of a sarcomatous nature. I close up with sutures the wound made for exploration, wash the part and my hands, and take a fresh knife for the radical operation, because I am afraid I might transfer embryonal cells into the wound that I intend to make and thus disseminate the disease.

The radical operation of Halsted was performed. The specimen was sent to the laboratory. The report shows that I was not dealing with either a sarcoma or a cancer, but with an endothelioma of the breast of the type known as hemangioendothelioma. The following is the report of Dr. L. H. McKinnie, verified by Professor Coplin:

The specimen consists of a human breast with the adjacent tissues. One surface is covered with apparently normal skin. The nipple is very slightly retracted. The mass is soft, with the exception of a small area near the nipple, where there is a hard nodule 5 cm. in diameter. The specimen cuts with ease, except through the previously mentioned hard nodule. The cut surface of the nodule is greenish-yellow in color, firm in consistency, and markedly granular in appearance. The sections made of this specimen are found to be composed of fibrous tissue cells of various kinds and of muscle. Along one edge of some of the sections are many layers of squamous epithelial cells, the outer ones being stratified and keratinized. The deeper ones are polyhedral, with small nuclei and granular cytoplasm. Beneath this margin is a stratum of connective and elastic tissues, within which are found a few hair follicles and distorted sweat-glands. This edge is practically unaltered skin. The greater portion of the section is composed of a curiously fibrillated connective tissue stroma and nests of endothelial cells. The cells are of various shapes and sizes, but most of them are round or oblong, with smaller deeply staining basophilic nuclei and granular cytoplasm. Within these nests of cells are many sinuses having no distinct walls, but marked by closely packed cells of the type already described. Many of the spaces are empty; some contain blood. Near the center of many of the larger cell collections is found a detritus composed of red blood-corpuscles and fragmented endothelial cells. Within the stroma are quantities of bloodvessels filled with unaltered blood as well as many collections of free blood. The tumor is not encapsuled. The muscle in the sections is of the normal striped variety.

As to whether or not it would have been possible to make a diagnosis of this growth I am not sure. It was reasonably certain that we were not dealing with cancer, and possibly the free hemorrhage on incision, the absence of any history of injury, the presence of pain, and the undefined margin with the hard center should have separated this growth from the distinctly outlined breast sarcoma, which—in its earliest stages at least—is more or less encapsuled.

ERYTHROPLÆUM: A CLINICAL STUDY.¹

BY

REYNOLD WEBB WILCOX, M.D., LL.D.,
of New York.

Professor of Medicine and Therapeutics at the New York Postgraduate Medical School and Hospital; Physician to St. Mark's Hospital.

In 1876 there was brought to France from Africa the bark of a tree which was later recognized as the *Erythroplœum guineense*, one of the *Leguminosæ*. From the red color of the solutions made from the bark the name is seen to be appropriate. This is also known as the gidu, mancona, doom, ordeal, casca, saucy, and sassy bark. It occurs in flat or curved pieces of irregular size, about 6 mm. thick, covered externally with an uneven, warty and fissured corky layer, or deprived of the same, of a

¹ A clinical lecture in the Jefferson Medical College Hospital.

¹ Read before the Medical Society of the State of New York at its ninety-seventh annual meeting, at Albany, 1903.

dull brown color. It is hard, brittle, of a fibrous texture internally, with pale, yellowish spots, inodorous, of an astringent, somewhat bitter, acrid taste, and when powdered excites sneezing. Its active principle is a colorless alkaloid, erythroplein, which is soluble in water and alcohol. The only preparation of the bark is

condition persists until the heart becomes irregular, when it falls. The respiratory movements are at first slower and fuller, but when the heart becomes feeble they are accelerated, and during the period of irregular and feeble heart action they produce the so-called respiratory oscillations and increased blood-pressure. Large doses produce vomiting and increased peristalsis. Moderate amounts increase diuresis; poisonous doses induce convulsions and later marked weakness of all muscles, and finally death.

The mode of action may be summed up as that of a muscle-poison acting upon the heart earlier because it receives a larger quantity of poisoned blood. Upon the vagus its action resembles digitalis. It is a vasoconstrictor by acting on the vessels themselves, the vasomotor nerves or on some vasomotor center not contained in the medulla but probably in or around the vessels themselves. The respiration is influenced through the

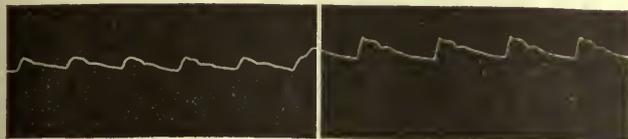


Fig. 1.

Fig. 2.

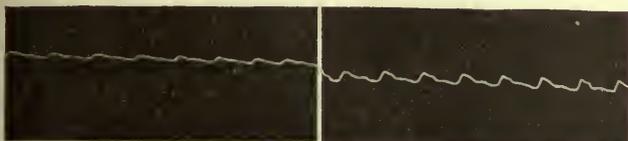


Fig. 3.

Fig. 4.

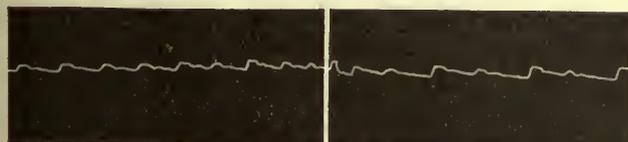


Fig. 5.

Fig. 6.

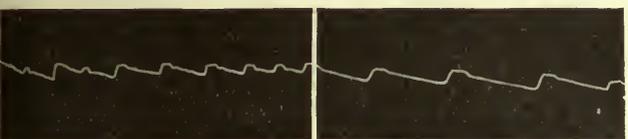


Fig. 7.

Fig. 8.

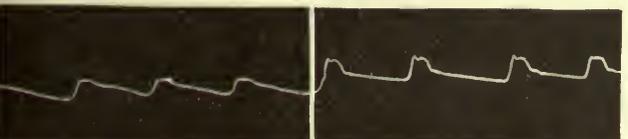


Fig. 9.

Fig. 10.

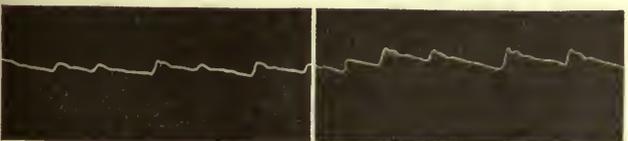


Fig. 11.

Fig. 12.

the 10% tincture adopted by the British Pharmaceutical Conference, of which the dose is 5 to 10 minims.

During the five years after its introduction the chemistry and physiologic action of the drug were investigated in England by Brunton and Pye, and in France by Gallois and Hardy, and by Sée and Bochefontaine. With considerable uniformity in various reports its physiologic action may be stated to be as follows: The heart is slowed at first, later it becomes rapid. The ventricles contract regularly, but after large doses irregularly and stop in systole, while the auricles may continue to beat. This slowing is remarkable (1) from the regularity and energy of the systoles, and (2) from the fact that during this slowing the uniform blood-pressure is not altered by respiratory movements. The blood-pressure rises because (1) of the increased energy of the heart, and (2) of the contraction of the bloodvessels; this



Fig. 13.

Fig. 14.



Fig. 15.

Fig. 16.

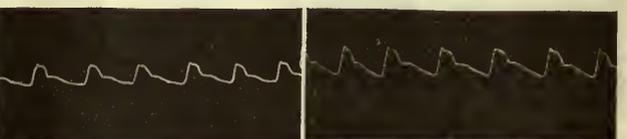


Fig. 17.

Fig. 18.



Fig. 19.

Fig. 20.

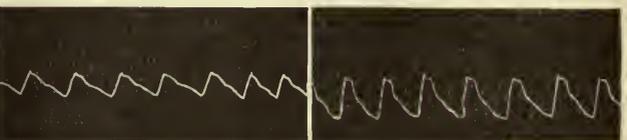


Fig. 21.

Fig. 22.

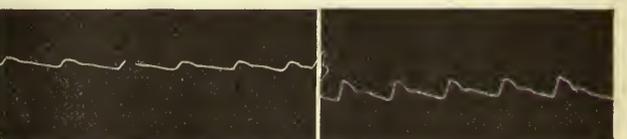


Fig. 23.

Fig. 24.

pulmonary branches of the vagus. It is sternutatory, because the powdered bark is an irritant to the nasal mucous membrane, causes vomiting by reason of its solutions possessing the same property, and is diuretic for the same reason and under the same conditions as is digitalis.

The alkaloid has been investigated by Lewin, Égasse, Liebreich, Theobald, Onodi, Alt, and others. In 1 to 2 per mille solution it is locally anesthetic. This anesthetic condition may last several hours, but practically it is inferior to cocain. It produces myosis, dims the cornea, causes headache, giddiness and even syncope. Its employment for this purpose has been abandoned.

The field of use for erythropleum would seem to be limited to the heart and bloodvessels when cardiac disease is or is not accompanied by dropsy. Its ability to slow the heart is rather greater than that of digitalis, but it is more decidedly a gastric irritant. Its vasoconstrictor properties are practically those of digitalis and ergot combined. It is rather less cumulative than is digitalis, using this term in the same sense that it is applied to digitalis.

My laboratory work done upon this drug in Paris in 1882 left a desire to investigate it clinically, for which no opportunity has presented itself until recently. The following are the cases which illustrate its action:

CASE I.—Mr. B. June 6, slight arterial (interstitial) nephritis, mitral regurgitation, dilated left heart, slight anasarca. (Fig. 1.)

June 21, moderate diuresis was observed, cardiac first sound of better quality. (Fig. 2)

CASE II.—Mr. D. March 14, marked dilatation of left ventricle, mitral regurgitation, renal congestion, confined to bed. (Fig. 3.)

April 25, considerable improvement in heart-sounds, aortic second well defined, some diuresis. (Fig. 4.)

CASE III.—Mr. J. December 12, old fibromyocarditis, dilatation, mitral obstruction and regurgitation, moderate congestion of kidneys, anasarca. (Fig. 5.)

December 17, marked diuresis, murmurs distinct, anasarca lessened. (Fig. 6.)

December 25, considerable improvement; pulse slow and hard. (Fig. 7.)

CASE IV.—Mrs. T. June 1, aortic stenosis and mitral regurgitation, fibromyocarditis. (Fig. 8.)

July 7, but little improvement in subjective symptoms. (Fig. 9.)

July 24, feels much better, and heart-sounds distinct. (Fig. 10.)

CASE V.—Mrs. G. July 9, fatty heart, with some mitral regurgitation, edema of ankles, attacks of syncope. (Fig. 11.)

August 3, cardiac first sound of lower pitch, no edema, some diuresis. (Fig. 12.)

CASE VI.—Mr. E. December 16, aortic stenosis, mitral stenosis, considerable regurgitation and dilatation; no anasarca. (Fig. 13.)

December 26, condition somewhat improved, hands and feet warmer. (Fig. 14.)

January 16, subjective symptoms markedly improved. (Fig. 15.)

CASE VII.—Mrs. M. May 31, aortic stenosis and regurgitation, mitral regurgitation, with marked ventricular dilatation, syncope. (Fig. 16.)

June 16, dilatation lessened, murmurs more distinct. (Fig. 17.)

June 29, no attacks of syncope since last report, marked diuresis. (Fig. 18.)

CASE VIII.—Miss E. March 1, mitral regurgitation, anemia, renal and pulmonary congestion. (Fig. 19.)

March 20, cough has disappeared, cardiac first sound louder. (Fig. 20.)

April 29, much improved, marked diuresis. (Fig. 21.)

June 1, anemia better, no circulatory symptoms. (Fig. 22.)

CASE IX.—Mrs. X. June 5, fatty heart, mitral regurgitation, dilatation, pulmonary congestion. (Fig. 23.)

June 27, all pulmonary symptoms have disappeared. (Fig. 24.)

July 11, still improving, heart-sounds distinct and dilatation now but slight. (Fig. 25.)

The dose employed has generally been 10 drops in a wineglass of water after each meal. The dates given are those upon which the sphygmographic tracings have been made.

The indications for the use of the remedy are those which Withering laid down in the eighteenth century for digitalis, namely, a rapid, low tension pulse with venous congestion. As compared with digitalis it is decidedly more active in slowing the pulse; it also irri-

tates the stomach more, and, therefore, is more likely to cause vomiting, and possesses a more disagreeable taste. As a vasoconstrictor it has greater effect than digitalis; in fact, as great as digitalis and ergot combined. It is less cumulative than digitalis. It seems to act rather upon the inhibitory than on the muscular system. As to constancy of effect in slowing the heart, strengthening the pulse, and promoting diuresis, digitalis is rather more reliable. The use of this remedy, then, should be confined to those cases of fairly competent heart with low vascular tension, in which it will show its effects more rapidly and markedly, and to those cases in which digitalis has lost its usefulness or has utterly failed.

CHRONIC CYANOTIC POLYCYTHEMIA, WITH NOTES UPON TWO CASES.

BY

J. N. HALL, M.D.,
of Denver, Col.

I offer the title as a tentative designation for certain cases recently reported of chronic cyanosis with immense increase in the number of red cells, and without cardiac disease, two cases of which I have observed recently. The first case I studied in Denver, and reported at the Denver Clinical and Pathologic Society, March 13, 1903. The patient was also seen by Drs. S. D. Hopkins, H. R. McGraw, and A. Zederbaum. The second I examined with Turk in Neusser's clinic in July, 1902.

CASE I.—Mrs. M., a Jewess, aged 61, who was born in Germany, has lived in Denver 18 years. She is of a strong family, and has had no serious illness. She has borne six children. Menstruation ceased at 50. She has no history of alcoholism, syphilis, nor tuberculosis.

As a girl and young woman she was very strong, delighting in long walks and other vigorous exercise. Only since the menopause have the dyspnea and palpitation of which she complains manifested themselves. It is because of these symptoms that she applied for treatment. Her condition has changed gradually for the worse for eight or ten years past.

The patient stated that she slept and ate well, suffered no pain, and was always thirsty. There was no constipation. Her lips were tremulous. Her dyspnea was very marked upon the exertion of removing her clothing for examination of the chest.

The most striking feature in her appearance is a cyanosis of such intensity as to be startling, giving her lips and tongue the shade of a ripe Concord grape. It is slightly less marked upon the hands, and still less upon the trunk and lower extremities. Over the face are to be seen tortuous veins which are almost black in appearance, and 2 mm. to 4 mm. in width. Although I noticed no especial change in her color at my examinations, her daughter stated that she showed a dusky flush at certain times, especially after excitement, which was very noticeable. The fingers are not clubbed. Her height is but little over five feet; her weight, 160 pounds.

The respirations were 30 while seated, the pulse beats 84 per minute, the temperature normal. Pulse strong, regular and of increased tension as compared with the normal; arteries moderately atheromatous. The heart was, if anything, slightly larger than the average upon percussion, the sounds all sharp and clear, the aortic second sound moderately accentuated. The examination was less satisfactory than usual because of her obesity, but of the points enumerated there could be no doubt. The lungs were negative excepting for a few crackles in the bases, probably, in the light of the edema of the legs and the condition of the urine, edematous in character. There was no evidence of emphysema.

The thick abdominal walls made the examination of the spleen very difficult. Enlargement was especially sought for, but I could not find it. The organ was certainly not greatly enlarged. The abdominal examination was otherwise negative. No enlarged glands were detected. There was moderate edema of the feet and legs, and had been for years. None elsewhere except as noted in the lungs. Knee-jerks were normal.

The urine amounted to nearly 2,000 cc. in the 24 hours. Specific gravity 1,012, albumin estimated by Dr. McGraw at .5% by weight. A moderate number of epithelial casts were found in the centrifuged sediment, but curiously scarcely any hyalin or granular ones.

The right pupil was slightly dilated, but both reacted normally to light and to accommodation. Dr. Edward Jackson reported that the eyes, beyond their extremely bloodshot condition, showed little but dilation of the retinal veins.

Dr. H. R. McGraw reported upon the blood as follows:

The drop obtained by puncture was extremely dark in color



Fig. 25.

and coagulated so quickly that it could scarcely be removed from the capillary tube for the blood count. Reds, 9,949,600; normal in character. Whites, 6,500; normal in variety and proportion. The hemoglobin was estimated at 170 on the first examination, January 8 (Von Fleischl), and 200 on March 6. Dr. McGraw found it necessary to dilute the blood twice as much as usual before making the estimation.

CASE II.—The brief notes of this case I obtained from Turk. I have not found it reported since my return.

Female, aged about 40. History not obtained, but she was extremely neurotic. She presented a reddish-blue hue of the face, which somewhat resembled the cyanosis of advanced emphysema, but was less slaty in color. This cyanosis was not constant, but became deeper and redder upon eating, upon examination, and upon excitement of any kind. The color was much less noticeable elsewhere, but was fairly marked in the hands. She was well nourished and able to move about actively and without distress. The physical examination showed a greatly enlarged spleen, but no other especial features. The heart was negative.

The blood contained on June 30, 9,935,000 red cells, and on July 1, 8,400,000. On the former date the whites were 22,000, on the latter 6,500. The hemoglobin was estimated at between 160 and 170 by Von Fleischl's instrument. The blood would hardly flow because of its thick consistency. There was no especial departure from normal in the blood cells nor in the relative proportions among the white cells.

There were strikingly large and dark veins upon the face, many being 2 mm. or 3 mm. in width.

Turk stated that these large veins appeared in another patient whom he had seen, upon the chest also. He laid especial emphasis upon three features, the polycythemia, the dilated veins, and the enlarged spleen. He believed the dilation of the veins to be paralytic in nature and intimately connected with the neurotic temperament. He suggested the possibility that the enlargement of the spleen arose from venous stasis. In his experience there was great variability in the number of cells found in the blood from different parts of the body and on different days.

In the report of the autopsy of Cabot's¹ case, which he has kindly furnished me, no enlargement of the spleen is noted—in fact, nothing characteristic, excepting the marked passive congestion of all internal organs. No other reports are accessible to me at present, but we may note that in Turk's case only, of the three mentioned herein, was the enlargement of the spleen a prominent feature. A French author, the reference to whose report I cannot now obtain, reported finding tuberculosis of the spleen in one of these cases postmortem.

The dyspnea and palpitation seem to be more striking symptoms in my own case than in the other two quoted. I can explain them only on the ground of insufficient oxygenation in spite of the increased number of red cells, for notwithstanding this increase, the result to the tissues in this disease seems to be that same paucity of oxygen noticed in many other conditions, as in the anemias. It seems possible that the increase in the reds may be a compensatory process—an attempt to make up the deficiency in oxygen-carrying capacity in individual cells by an increase in the number of cells. I know of no explanation of this deficient capacity of the red cells. Although not especially prominent in my own case, the neurotic manifestations in Turk's and Cabot's cases should lead to careful investigation along this line.

My own case is the only one that I know of in which a well defined chronic nephritis with cardiac manifestations seem to have been present. I am not at all sure that this is anything more than an accidental complication. I associated the high pulse-tension rather with the nephritis than with the disease proper. I have no record of the condition of the urine in Turk's case. In Cabot's the trace of albumin and the few hyaline casts seem nothing more than the results of the passive congestion. I believe the quantity of albumin, the character of the sediment, and especially the increased area of the heart, the increased pulse-tension, and the aortic accentuation in my own case suffice for a diagnosis of a definite nephritis.

I make this imperfect report because all of these cases should be put upon record for collective study, and regret my inability to obtain the reports of other cases at this time for comparison.

A FURTHER STUDY OF THE INFLUENCE OF THE CONTENTS OF THE LARGE INTESTINE UPON STRYCHNIN.

BY

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In a previous communication to this journal¹ "On the Influence of the Contents of the Large Intestine Upon Strychnin," it was reported that small quantities of strychnin (2 mgs.) added to the contents of the cecum and colon of normal rabbits could not be detected when examined according to the method recommended by Haines.²

In a number of control experiments, however, with 1 mg. of strychnin mixed respectively with gastric contents, liver, crushed brains or urine, carried out with the same method, strychnin was easily found. The conclusion was therefore drawn that the contents of cecum and colon of normal rabbits contain something which interferes with the detection of strychnin by the methods at our disposal. Beside the method referred to, other methods, such as those of Draggendorff and Otto Stas, were employed at first, but were abandoned in favor of the Haines' method. I have recently made use also of Blyth's method,³ with similar results.

A study of the physiologic effect of a mixture of strychnin and contents of cecum and colon of normal rabbits was next undertaken. A quantity containing a maximum of $\frac{1}{20}$ mg. of strychnin nitrate and injected into a frog of about 30 gms. induced a typical tetanus shortly after. This certainly proves that strychnin is not destroyed by the contents of the large intestine of normal rabbits. The failure to detect strychnin could be due, therefore, either to its destruction by heat used in the process of separation or to loss during the numerous manipulations involved in the various methods I employed. The first suggestion was put to an experimental test. A mixture of strychnin and contents of large intestines of normal rabbits was heated on the water-bath for four to five hours at a temperature of 75° C. to 80° C., and injected into frogs. The results obtained, although not constant, have shown that this temperature does not destroy strychnin in the presence of the contents of the cecum and colon of normal rabbits. I therefore set out now to simplify the method of obtaining strychnin. This was accomplished as follows:

After adding strychnin to the contents of the cecum and colon of a normal rabbit the mixture was acidified with acetic acid. To this 95% alcohol was added and both were digested on the water-bath for several hours at 75° C. to 80° C. Strong alcohol was now added again, and the whole filtered, the residue washed with alcohol several times. A second extract was made by treating the residue with alcohol and filtering as before. The two filtrates were united and evaporated to about 2 ounces at the same temperature as before. This was now shaken up with chloroform in the separatory funnel and the chloroform drawn off. Chloroform was then added again and the solution made alkaline with KOH. After shaking vigorously the chloroform was drawn off. A second chloroform extract, to insure complete removal of the strychnin, was made, the two extracts united and evaporated. The residue was dissolved with acetic and water and filtered. The filtrate was made alkaline and shaken up with chloroform, which on evaporation gave

¹ Boston Medical and Surgical Journal, December 7, 1899.

a typical strychnin reaction with potassium bichromate and concentrated sulfuric acid. I found, however, that when the original mixture is digested at room temperature for 24 hours and the filtrate evaporated at 30° C. to 40° C. a much purer chloroform extract is obtained. I never failed to detect strychnin, even 2 mgs., in the contents of cecum and colon by the method as outlined when the operations were carried on at a low temperature. It is, therefore, the method that was at fault in the failure in the early experiments to detect strychnin in the contents of the cecum and colon of normal rabbits. Why should a simplified method give different results? This may be explained as follows: If a careful study be made of the various methods I have employed, such as the Otto Stas, Draggendorff, Haines, and Blyth, it may be seen that in all of them the number of manipulations is quite large. The solution is filtered many times and shaken up in the separatory funnel a number of times successively with several reagents before the alkaloid is ready for the final test. As only small quantities of strychnin were experimented with, the loss of even a small portion during any of these processes would be sufficient to prevent its detection. But the same method was successfully employed for the separation of even smaller quantities of strychnin (1 mg.) from gastric contents, liver, brain, urine, etc. This may be explained by the fact that the organic impurities are not so numerous, and filtration much better; hence fewer manipulations with less loss of substance. While the acid solution of the large intestine had to be shaken up many times with amyl alcohol, benzin, etc., one extraction with amyl alcohol was all that was necessary for the purification of gastric content, etc. As amyl alcohol takes up water, it is not at all improbable that some of the strychnin was lost in this way. This would also explain why in many cases of strychnin poisoning the alkaloid has not been found. The large number of manipulations involved in the methods generally employed probably interfered with the detection of strychnin.

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- ¹ *American Medicine*, August 18, 1902.
² Allen McLane Hamilton's *System of Legal Medicine*, Vol. 1, pp. 451-59, 1895.
³ *Poisons: Their Effects and Detection*, third edition, p. 334.

A RAPID AND EASY METHOD FOR THE STERILIZATION OF CATGUT LIGATURE AND SUTURE MATERIAL.

BY

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Since the introduction of catgut as a ligature and suture material by Lister, efforts have been directed to perfect and simplify the method for its sterilization. The delicate structure of the material will not permit of harsh treatment, therefore sterilization must be accomplished with great care, otherwise the tensile strength will be impaired. Usually the technic leading to the desired result is complicated, costly, and time consuming.

The various methods for the sterilization may be summarized under the following heads:

Dry Heat.—The process consists in baking the material at a temperature of about 220° F. Properly the temperature should be raised gradually and be maintained for from one to two hours, depending upon the size of the catgut. The process should be repeated twice at least, allowing an interval for germ development from spores. Even with every care weak spots are likely to develop in the catgut prepared with this method of sterilization.

Moist Heat.—The sterilization in the majority of methods coming under this head depends upon the high boiling points of certain liquids in which the catgut is

immersed. The liquids commonly used are mixtures of the hydrocarbons, such as cumol (cumene), B. P. 152°-153° C.; zylene (xylyl), B. P. 136°-143° C.; benzin and alcohol, B. P. 50°-60° C., and about 78° C., respectively. It may be said, however, that the boiling point of the latter two is far from being high enough to kill even the less resisting spores. All of these liquids are inflammable and require, as a rule, complicated and expensive apparatus to carry out the sterilization safely.

Chemicals.—Those commonly used are: Carbolic acid, chromic acid, creolin, formalin, and mercuric chlorid. The latter heads the list for efficiency, and is found in the majority of formulas. It is known to kill the most resisting spore—that of anthrax—in a few minutes, using a solution 1-1,000. Lately iodine has been used. The theoretic objection to the use of a chemical germicide is its supposed effect in lowering tissue resistance and thus favoring infection. Mercuric chlorid is said to increase wound secretion, thus producing a favorable culture-medium for the growth of pus-forming bacteria.

The object of this article is to give to the profession a rapid and easy method for the sterilization of catgut, which has proved its reliability in practical tests, having been used in some 3,000 operations. Wounds in which catgut so prepared has been used have healed rapidly, and suppurations following have been unusually rare and could not be traced to the material. It has also been tested bacteriologically, always with negative result.

The Technic.—Have ready one two-quart and one one-quart clean fruit jar for each size of the material used. It is well to have an extra one-quart jar for use in preparing a fresh batch when one on hand is nearly used. The jars must be thoroughly cleaned beforehand and sterilized by boiling or dry heat. The various sizes of catgut can be purchased from any reliable firm dealing in surgical supplies. The sizes found most convenient are 00, 0, 1, 2, and 3. The first three sizes are cut into lengths of about ten inches and used for ligatures and sutures; the last two, 20 inches—used for pedicles, etc. For convenience, a piece of wood 10" x 3" x 1/4" is obtained, and both ends cut to a point and notched at intervals of one-quarter of an inch for catching the ends of the strands. After winding lengthwise, cut the smaller sizes at both ends of the board; the larger at one end only. Three strands of a similar size of the short lengths are placed in an envelope of unglazed paper, a convenient size being 3" x 1 1/4". Two strands of a similar size of long lengths are likewise placed in envelope. Seal and mark with an indelible pencil the size number on the outside of the envelope. The number should be made large enough to be plainly seen. It does away with the necessity of putting germ-catchers on the outside of the jar. Envelope and contents of similar size are kept in a two-quart jar until wanted.

Sterilization is accomplished by placing 40 or 50 envelopes and contents in a one-quart jar and completely filling it with the following germicidal solution:

Mercuric chlorid.....	1.	(15 gr.)
Tartaric acid.....	5.5	(75 gr.)
Columbian spirits		
Ether.....	of each	473. (1 pint.)

Put on the cover and screw it down tightly. Allow size 00 to remain in the solution for four hours; size 0, six hours; size 1, eight hours; size 3, twelve hours. After the material has been immersed for the desired time pour off the solution and drain, then cover envelopes and contents with columbian spirits, screw on the cover, and put away in a clean place until wanted. It is essential that columbian spirits be used. Ethyl alcohol cannot take its place, even when the absolute alcohol is used. Columbian spirits is a pure methyl (wood) alcohol practically free from water. It is inexpensive, costing less than the ordinary alcohol. It can be obtained usually at paint stores. It serves to toughen the catgut, acting much the same way as does formalin. In removing the envelopes from the jar use a pair of vulsella forceps kept expressly for this

purpose. Thread the needles, then place in recently distilled water. Catgut prepared by this method possesses all the requisites of a good ligature and suture material—strength, pliability, and most important, asepsis. The technic of sterilization is easy to carry out and it is inexpensive. The very minute quantity of mercuric chlorid remaining in the material overcomes the theoretic objections to its use.

It will not be out of place here to relate an experience with an infected ready-prepared cocain solution. Nearly all of our ordinary operations for the cure of hernia, varicocele, phimosis, removal of skin growths, etc., are done under a local anesthetic—cocain solution. The solution was prepared with distilled water, using every care. It was a rule to fill the hypodermic syringe from a clean glass and never return unused solution to the bottle. Some time ago suppuration followed in four out of five operations. The catgut and cocain solution were at once under suspicion, both were subjected to bacteriologic examinations. The catgut was found sterile. In the cocain solution was found *Staphylococcus pyogenes* with putrefactive bacteria. How the solution became infected is a mystery, but it is not unlikely that it was done in the operation of filling a syringe by inserting the needle into the bottle or that an unused solution was returned.

At the suggestion of Dr. Lee H. Smith the solution is now prepared from dry ingredients. Two dozen clean glass-stoppered one-dram bottles were obtained and sterilized. Into each bottle were placed the following dry ingredients:

Cocain mur.....	.062	(1 gr.)
Morphin.suif.....	.002	($\frac{1}{32}$ gr.)
Nitroglycerin.....	.000162	($\frac{1}{625}$ gr.)

Just before an operation the bottle is filled with boiling decinormal salt solution.

When a bloodless field of operation is desired a 1-10,000 solution of adrenalin chlorid is used in place of decinormal salt solution, the nitroglycerin being omitted. In operations requiring more than one bottle of the solution, one-half of the solution from a full bottle is poured into an empty bottle and both filled with decinormal salt solution; the one-half strength solution works well. Bottles are to be sterilized before each refilling.

The small bottles are kept in a specimen jar tightly covered until wanted.

Since using this solution and the catgut ligature and suture material prepared as above some 200 operations have been performed without a single suppuration.

For Quick Delivery of Milk.—The Chicago Bulletin of the Health Department for the week ended May 31 says: "Referring to Chicago's problem and the inevitable rise of infant mortality as summer temperature obtains, and more quickly 'sours' the 36 to 60 hours' old milk, *American Medicine* urges that 'with the trolley lines now running into every part of the neighboring country the abuse of long-kept milk should be instantly abated. There is no reason why cold and pure milk should not be delivered at the doorstep within a few hours after milking. This is one of the greatest possible blessings of the development of the trolley system. Let our health boards at once set about its utilization.'"

Chicago's Mortality.—The Bulletin of the Chicago Health Department for the week ended June 6, says: "A remarkable and a gratifying feature of the five months' mortality—and one which still obtains, as shown in the above figures of deaths among the young—is developed in a comparison of the deaths under 5 years of age this year and last. In the five months of 1902 there were 3,325 such deaths out of a total of 11,233 deaths at all ages, or 29.5% of the total. In the five months of this year there were 3,644 such deaths out of a total of 13,159 deaths at all ages, or 27.5% of the total. These figures show a decrease of 7.2% in the proportion of under 5 year deaths this year. The greatest decrease—14%—is in the deaths of under 1 year of age. On the other hand, there has been a comparative increase of 3.5% in the deaths between 1 and 60 years and of 0.9% of those over 60 years of age. The "murderous mortality" has been principally among those at the most valuable age-period of life; but it is some satisfaction to know that the better safeguarding of infant life, the growing intelligence of mothers in the care of their young—especially in the poorer districts—shows tangible results."

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

June 20, 1903. [Vol. XL, No. 25.]

1. Indications for Cholecystectomy. BYRON B. DAVIS.
2. The Call for Exploratory Operation in the Gallbladder Region. F. A. DUNSMOOR.
3. Observations on Breast Feeding from an Obstetrician's Point of View, with Report of Cases. EFFA V. DAVIS.
4. Aphthæ and Herpes: Contracted by Children Drinking Milk from Cows Suffering from Foot-and-Mouth Disease. E. F. BRUSH.
5. Prolonged Withdrawal of Food in Certain Cases of Intestinal Disorder. THOMAS D. PARKE.
6. Infant Feeding: Its Relation to the Diarrheal Diseases of Infancy. JAMES G. MASTIN.
7. The Safranin Test for Sugar in the Urine of Children. W. S. CHRISTOPHER.
8. Capillary Bronchitis. PHILIP F. BARBOUR.
9. Management of Catarrhal Pneumonia in Infants. CHARLES GILMORE KERLEY.

- 1, 2.—See *American Medicine*, Vol. V, No. 20, p. 773.
 3, 4, 5.—See *American Medicine*, Vol. V, No. 21, p. 821.
 6.—See *American Medicine*, Vol. V, No. 22, p. 861.
 7.—See *American Medicine*, Vol. V, No. 23, p. 903.
 8.—See *American Medicine*, Vol. V, No. 22, p. 861.
 9.—See *American Medicine*, Vol. V, No. 23, p. 902.

Boston Medical and Surgical Journal.

June 18, 1903. [Vol. CXLVIII, No. 25.]

1. The Need of an Institution for the Education of Nurses Independent of the Hospitals. FRANCIS P. DENNY.
2. Hemostasis by Compression and Heat. JOHN W. KEEFE.
3. Poliencephalomyelitis and Allied Conditions. E. W. TAYLOR.

1.—Education of Nurses Independent of the Hospital.—F. P. Denny points out the disadvantages of the present system, hospitals furnishing the training chiefly for economic reasons. To the small general hospital and the special hospital the didactic instruction required is a real burden, and even in the larger schools it is inadequate and not in the most competent hands. The nurse in the effort to get the routine work done has no time to digest the experience and teaching she is receiving. The changes urgently needed are leisure for study, instruction in the principles of nursing before beginning practical work, instruction by those especially fitted to teach, improved methods of instruction. The apprenticeship system does not develop powers of observation, clear reasoning, and sound judgment. Hospital experience should come at the end as in the medical profession. A single plant could provide for a number of hospitals, and hospitals could require all candidates to furnish a certificate of having taken such a course. [H.M.]

2.—Hemostasis by Compression and Heat.—J. W. Keefe reports 50 cases in which the electrothermic angiotribe was used. Its advantages are exclusion of the ligature, hemostasis *en masse* or of isolated vessels, aseptic gastrectomy, gastroenterostomy, resection of intestine, appendectomy, salpingectomy, extrusion of septic material during operation being rendered impossible; sterile occlusion of the fallopian tube, absence of irritable and painful stumps, less tendency to post-operative adhesions, rapidity of operation, no secondary hemorrhage from slipping of ligatures, nor suppurating sinuses due to ligatures, no puckering nor dragging on the tissues, no danger of inoculation with cancerous material during operation, as the heat destroys the cancer cells beyond the point of application of the clamps. [H.M.]

3.—Poliencephalomyelitis and Allied Conditions.—E. W. Taylor believes that a large group of affections of the central nervous system exists, provisionally to be regarded as inflammatory, in which may be included encephalitis, polienccephalitis (superior and inferior), polienccephalomyelitis, poliomyelitis, encephalomyelitis and, with reservations, Landry's paralysis, and possibly myasthenia gravis, and certain peripheral nerve infections. These should be regarded as essentially identical, differing only in symptomatic expression. The evidence for this lies in the simultaneous involvement in individual cases of various portions of the nervous system, a notable example of which is given in polienccephalomyelitis. We should gain in our understanding of these and other affections if we adopted a classification based on pathologic altera-

tions and on etiology, whenever possible, rather than on clinical symptoms determined by anatomic subdivisions. Admitting a somewhat definite pathologic alteration of the nature of inflammation as a fairly constant factor, we may assume the existence of a common exciting, probably toxic, cause. The nature of this cause is practically unknown, its manifestations are not always uniform, and our final understanding of the distribution and prognosis of these affections must depend, first, upon our knowledge of these exciting causes, and second upon the nature of individual susceptibility and resistance. [H.M.]

Medical Record.

June 20, 1903. [Vol. 63, No. 25.]

1. Infantile Insanity in Its Relation to Moral Perversion and Crime. ALLAN MCLANE HAMILTON.
2. Gastric and Intestinal Crises. C. A. EWALD.
3. Intravenous Infusion in Puerperal Septicemia. EDWARD WAITZFELDER.
4. The Correlation of Alcoholism, Crime, and Insanity. C. A. DREW.
5. The Medical Officer of the United States Navy. GILBERT TOTTEN MCMASTER.

1.—Infantile Insanity, Moral Perversion, and Crime.—A. McL. Hamilton points out the difficulty of determining responsibility in children. Cruelty, theft, incendiarism, and even suicide may not bring with it any suspicion of mental disease. They simply do not understand the significance of these things. Many of their crimes are merely imitative. Certain neurotic children, as early as the third year, may develop peculiarities in which moral defects are constant, thus differing from the occasional acts of sane children. A form of useless lying, with defiance of authority, waywardness, sexual perversion, intolerance of restraint, and cruelty is nearly always present. The children are dull so far as systematic work is concerned, but sharp and precocious in other ways. Many forms of adult insanity are found including paranoia, parietic dementia, and circular insanity. Appreciation of consequences sometimes exists, but there is no dread of the obsession as in adults. There is apparent absence of the moral sense, especially when homicides are committed, the subjects often being flip-pant and boastful. Insane criminal perversion is due to (1) idiocy, imbecility, or an epileptic psychopathic condition; (2) to primary delusional insanity; (3) to a degenerative state, with delusive ideas and obsessions; (4) to parietic dementia and other adult diseases. Correctional institutions are needed where children are not stamped as felons; farms and trades' schools, and removal from malodorous tenements and association with older criminals. There should be government regulation of newspapers and injurious publications, with enforcement of existing laws for the protection of minors. [H.M.]

2.—Gastric and Intestinal Crises.—Gastric crises are only in small degree, if at all, the expression of disease of the stomach itself, but are reflexes from other organs. C. A. Ewald discusses those attacks originating from a lesion or functional disturbance of the central nervous system, leaving aside those due to kidney or gallstones, movable kidney or liver, intoxications, worms, uterine or ovarian troubles. He describes the early manifestations of *tabes dorsalis* necessary for a diagnosis, based on the study of 89 cases. The duration of the disease varies, the average is 2 years and 10 months. The attacks return always at shorter intervals and may last from one-half to 48 hours. Usually the attacks come as quickly as lightning and so disappear. It is surprising how long they precede tabetic symptoms. Sub-acidity prevails over other conditions, Intestinal, especially anal crises are less frequent. There is desire for stool, with constipation and sensation of a knife or hot iron in the rectum. It is difficult sometimes to separate tabetic crises from nervous vomiting due to organic or functional disturbances of the nervous system and from idiopathic vomiting without demonstrable disease. We are in the dark as to the nature of the crises. It is most likely an auto-intoxication by a substance which has no influence on normal nerves, the attacks increasing as degeneration progresses and ceasing when the line of transmission has been destroyed. In grave cases morphin must be given, never allowing the patient to use the syringe himself. Epidural injections of cocain have also been tried by the author.

In idiopathic vomiting tonic treatment will accomplish a great deal. [H.M.]

3.—Puerperal Septicemia.—Ed. Waitzfelder reports two cases treated by intravenous infusion. Case I was a primipara, aged 26, and brought to the hospital three weeks after normal labor, with well-marked puerperal septicemia. After following the usual treatment in such cases for about two weeks, including repeated hypodermoclyses of decinormal saline solution, pneumonia developing in the left lung, she gradually grew worse until her condition seemed hopeless. At this time he used the formalin infusion after the plan of Barrows. The result of the infusion was all that was looked for, but the improvement did not last, and after 48 hours, a second intravenous infusion was given, this time of decinormal salt solution; the result was identical in every way, the temperature-curves being a repetition of the other, the chills and sweating being exactly the same. The second bacteriologic examination of the blood showed a marked decrease in the streptococci present; and a later one, made just before death, showed their entire absence, but there was never any improvement in the condition of the lungs, and the persistent high temperature of the last few days, and the subsequent death were ascribed to pneumonia rather than septicemia. Case II was that of a multipara who had aborted in the fourth month of pregnancy, eight days before admission to the hospital with fully developed symptoms of septicemia, and a temperature of 103½°. She received at once an intravenous infusion of 1,200 cc. of decinormal saline solution at a temperature of 110°. During 12 hours there was a fall of temperature to 99½°, and from this time pulse and temperature remained practically normal until her discharge on the sixth day after her admission. Waitzfelder was impressed by his experience with the idea that the results obtained were due, not to the germicidal properties of the formalin, but to the transudation following the overdistention of the blood vessels. [W.K.]

4.—Alcoholism, Crime, and Insanity.—C. A. Drew finds total absence of moral sense not uncommon in those whose parents were both inebriates, though the patient has never used alcoholics. Moral imbecility or instinctive criminality due to a neuropathic or inebriate heredity is usually incurable. It is difficult to get a history of a mother's intemperance. The writer's observations in the State asylum lead him to believe that the offspring of some temperate parents are less likely to suffer from alcoholic insanity, though heavy drinkers, than the second generation who may not drink half so much. The most highly organized tissues suffer first, so that from alcohol in the blood the normal sense is first affected. [H.M.]

5.—Medical Officer of the Navy.—G. T. McMaster discusses the sort of man required for the position, and gives a summary of the various duties devolving upon him. [H.M.]

New York Medical Journal.

June 13, 1903. [Vol. LXXVII, No. 24.]

1. The Opening Address at the First Annual Conference of State and National Health Authorities Under the Act of July 1, 1902, held in Washington, D. C., June 3, 1903. WALTER WYMAN.
2. The Surgery of the Prostate from the Standpoint of Personal Experience. GRANVILLE MACGOWAN.
3. A Historical Sketch of the Ear Department at the New York Eye and Ear Infirmary. GORHAM BACON.
4. The Need of Combined Action Among the Various Medical Specialties. J. W. PUTNAM.
5. Report of Some Surgical Cases. W. MONROE SMITH.
6. Spermaturia. ARTHUR R. ELLIOTT.
7. Do Our Present Ways of Living Tend to the Increase of Certain Forms of Nervous and Mental Disorder? CHARLES E. ATWOOD.

1.—See *American Medicine*, Vol. V, No. 24, p. 946.

3.—The New York Eye and Ear Infirmary.—Gorham Bacon in this address delivered at the opening exercises of the Schermerhorn Pavilion gives a historical sketch and review of the growth of the aural department of the infirmary from 1864 until the present time. [C.A.O.]

4.—Combined action among the various medical specialties is advocated by J. W. Putnam. He believes that by joining researches and making a united effort in investigating the causes of diseases and new methods of treatment, the helpless condition of those for whom the prognosis has hitherto been unfavorable, may be improved and in other instances that

the deplorable results which are to be found in our homes for the epileptic, the feeble minded and the incurable paralytics, may be diminished. [C.A.O.]

5.—Report of Some Surgical Cases.—The first case reported by W. M. Smith is that of a woman of 59 who was thought to have a malignant tumor of the liver. An exploratory incision revealed a very large, hard and nodular right lobe. A needle was stuck into the mass, which encountered a hardness that was supposed to be a nest of gallstones in the liver tissue. An incision into the liver was then made and 71 stones removed, mostly of large size, with characteristic facets. Uneventful recovery followed. The second case is that of a woman of 63 who had suffered from a series of attacks of gallstone colic. She was very much jaundiced and thoroughly septic. An operation was urged but was promptly refused. Later she had hard septic chills, free sweats and a subnormal temperature for several days. About five weeks from the beginning of the illness the friends consented to an operation. An abscess was found involving the lower part of the gallbladder and including the ducts at their junction. This was incised and found to contain a great quantity of foul-smelling pus. The cavity was drained and recovery followed. The third case reported is that of a woman of 35 who had been suffering for several weeks with colic and transient jaundice. At operating 48 gallstones were removed, the bladder was found very much contracted with thick, brittle walls. Two of the stones were packed into the cystic duct. Recovery followed. Another case proved to be one of hematoma of the ovaries. That of the left ovary was about the size of a fetal head and was ruptured during the operation. The hematoma of the right ovary was small. An interesting feature of the case is that although both ovaries were completely removed the patient continued to menstruate at from two to four weeks' interval for some time thereafter and then stopped for five months, but at the time of reporting she was still menstruating. [C.A.O.]

6.—Spermaturia.—A. R. Elliott has found seminal elements in the urine a frequent confusing element in testing for albumin. In a review of 1,000 recorded analyses of male urines, seminal elements were present in 56 instances, in all of which spermatozooids were features of the microscopic sediment. In 44 of these cases the albuminous reaction was obtained. In 20 of the 44 cases no other morbid elements were present that would account for the albuminuria. As instances of the clinical confusion which may arise from the presence of these bodies the author reports three cases. [C.A.O.]

7.—Ways of Living and Nervous Disorder.—C. E. Atwood says that the tendency of our too rapid mode of living is to bring on neurasthenia or to develop a neurosis or mental disorder in those predisposed, or to jeopardize the future being, by establishing a faulty heredity. Overindulgence in eating and drinking tends to develop arterial sclerosis and may tend to cause apoplexies at an earlier age than formerly, and to conduce to senility and senile conditions. The effects of our rapid mode of living are perhaps greatest in the immigrant. Two-thirds of the insane of the State of New York are either foreign born or of foreign parentage. The causes of insanity and neurasthenia in these immigrants are chiefly faulty heredity, poverty and attendant evils, physical stresses, emotional excitement, intemperance and sexual excesses. [C.A.O.]

Medical News.

June 20, 1903. [Vol. 82, No. 25.]

1. The Need of Public Toilets in American Cities. EDWARD H. WILLIAMS.
2. The Morbid Anatomy and Pathology of Tabes. JOSEPH COLLINS. (Concluded.)
3. The Proper Recognition of Electrotherapeutics. A. R. RAINEAR.
4. A Contribution to the Pathology and Prognosis of the Diseases of the Bladder. ROBERT HOLMES GREENE and HARLOW BROOKS.
5. "Impressions of the Nonheredity of Acquired Characters": A Rejoinder. LAWRENCE IRWELL.

1.—Public Toilets.—E. H. Williams points out the embarrassment to strangers unaccustomed to our ways, as well as to citizens, especially women, from the absence of such places. In order to avoid disfigurement of the city they could be placed underground, as in London. The initial cost would be great, but could be materially lessened by their being constructed in

conjunction with present underground structures now building or projected. The saloonkeepers would find it more profitable for their business not to have them. He discusses and illustrates cheaper structures for outlying districts. [H.M.]

2.—Morbid Anatomy and Pathology of Tabes.—Joseph Collins concludes his interesting article on this subject. His remarks are based on the analysis of 140 cases of tabes and on the microscopic examination of three cords, together with a review of the status of the pathogenesis of tabes and a consideration of the theories which have been adduced to explain its phenomena. The theories that have been advanced to explain the degeneration of the posterior columns and the posterior roots are: 1. The vascular theory. 2. The theory of primitive degeneration of the posterior columns. 3. The theory that the essential lesion is (a) primary, (b) secondary degeneration of the posterior roots. 4. The theory that primary lesion is of the cells of the ganglia of the posterior roots. 5. The neuritic theory: the theory that the peripheral nerves are first attacked and that the lesions that finally overtake the posterior roots and columns in a secondary manner. These theories have been found insufficient to explain the lesions of tabes and have all, save the third, been abandoned. Though none of the hypotheses are adequate, that recently suggested by Marie and Guillain would seem to be most in accord with what we know of the etiology of tabes. Adopting their theory it is probable that the lesions of tabes are the results of the activity of a poison generated by syphilis acting primarily upon the intramedullary distribution of the posterior roots; that the essential lesion of tabes is an elective progressive degeneration, segmentary in type (in contradistinction to Wallerian), of the posterior columns of the spinal cord. [A.B.C.]

3.—Electrotherapeutics.—A. R. Rainear calls attention to the fact that quacks have availed themselves of the application of electricity to disease and are harvesting returns that should belong to the general practitioner. The majority of physicians are ignorant as to its action, forms, and dosage. The curriculum of all high grade medical colleges should have a department of electrotherapeutics. [H.M.]

4.—Diseases of the Urinary Bladder.—R. H. Greene and H. Brooks say that the increased frequency and ability with which medical men now recognize that diseases of the bladder often have their origin in the central nervous system has its hopeful aspect. Late improved methods in cystoscopy have added much to our knowledge in this field. In 500 necropsies in connection with various New York hospitals they found 107 instances of bladder lesion. The most constant lesion was acute dilation, this being present in 64 of the 107 cases. There were 4 instances of rupture of the bladder. Hypertrophy of the prostate may cause thickening of the bladder wall with contraction or thickening with dilation. Whether dilation or contraction takes place depends on the rapidity with which the prostate has enlarged. Extensive pathologic reports are given of a number of different lesions. Their conclusions are as follows: 1. The most frequent cause of diseases of the bladder is: (a) Lesions of the central nervous system, causing dilation; (b) septic processes of various varieties; (c) hypertrophy of the prostate. 2. In all conditions in which the spinal cord or central nervous system is involved frequent and early catheterizations should be resorted to. 3. Conditions of the bladder must greatly modify the prognosis in operative procedures for the relief of obstructions of the urinary flow, therefore the importance of cystoscopic and other examinations. 4. Hypertrophy of the bladder wall is due to four different processes, separate or combined: (a) Inflammatory infiltration; (b) increase of the fibrous connected tissue; (c) smooth muscle hyperplasia; (d) infiltration by new growth; (e) the clinical symptoms in hypertrophy of the bladder depend on which of these factors predominate. [A.B.C.]

5.—Impressions of the Nonheredity of Acquired Characters.—L. Irwell discusses the distinction between congenital conditions and heredity. Neo-Darwinians and neo-Lamarckians agree that congenital characters are hereditary. The alcohol diathesis is a congenital trait, and is undoubtedly transmitted. He has never asserted that acquired characters cannot be transmitted, but merely asserts that there is no reliable evidence that any acquired trait is transmitted. [H.M.]

CLINICAL MEDICINE

DAVID RIESMAN A. O. J. KELLY

REVIEW OF LITERATURE

Bony Changes in Gonorrhoeal Arthritis.—R. Kienbock¹ has observed after injuries and inflammatory processes of extremities, especially after grave gonorrhoeal metastatic arthritis, changes arise in the skeleton, usually spoken of as "inactivity atrophy" of the bones, but more correctly considered as acute osseous atrophy. It also occurs after injuries and acute diseases of the nervous system. Pathogenetically this atrophy is in line with other trophic changes, such as muscular atrophy, synovial changes, etc. It begins four to eight weeks after the onset of the disease, nearest the area of inflammation, radiating from it in different directions. It usually affects only the spongy bone at first, the radiographic picture showing this through lighter shadows, and slight changes in contour; the greater the absorption of limesalts, the lighter the picture. The diaphysis, cartilage and the surrounding soft parts are affected later. The treatment should consist of massage, passive and active movements, faradism and artificial passive congestion. Numerous photographs illustrate the stages of the condition. [E.L.]

Congenital Hypertrophic Stenosis of the Pylorus.—A quaint and interesting clinical and postmortem record is furnished by H. Beardsley,² with the following note by Dr. William Osler: "Cautley and Dent in a recent paper (*Lancet*, December 20, 1902) state that the first record of this disease, which is now exciting a good deal of interest, dates back to 1841. The report here given by Dr. Beardsley of a very clearly and accurately described case is, I think, worth publishing. It appears in the earliest volume of medical transactions issued in this country, entitled 'Cases and Observations by the Medical Society of New Haven County in the State of Connecticut,' New Haven, J. Meigs, 1788." F. W. Shaw³ details three cases, one of them being confirmed by autopsy. The duration of the fatal case was nearly eight years, but the fact that vomiting had persisted practically from birth excluded it from similar cases in adults not of congenital origin. It also shows that stenosis may be partial for a time and then become complete. Shaw gives a general review of the subject. [A.G.E.]

Tuberculosis of the Aorta.—S. v. Simnitsky⁴ reviews the literature on the subject of tuberculosis of the aorta and reports two cases. There are three varieties of aortic tuberculosis: 1. Extension of the tuberculous process from some adjoining organ. 2. Primary infection from the passing blood. 3. Infection by way of the vasovasorum. No case has as yet been reported as occurring in the latter manner. The author's two cases were found at the postmortem examinations of 155 cases of tuberculosis. Both of his patients suffered from acute miliary tuberculosis. Simnitsky considers this variety to be the most common cause of tuberculosis of the aorta. [W.E.R.]

The Innervation of Digestion.—O. Cohnheim⁵ relates entertainingly some of his experiences in Pawlow's laboratory in St. Petersburg. The experiments are performed solely to study the nervous mechanism of digestion and are carried on on a large scale. Dogs with large gastric and esophageal fistulas are used for the purpose. Mechanical irritation of the gastric mucous membrane does not produce secretion of gastric juice, but if the dog is permitted to chew his food the stomach begins to secrete 5½ minutes after the onset of this, although none of the food reaches the stomach. The gastric juice runs from the fistulas into vessels. The odor and the sight of food is sufficient to start up the secretion. Through separation of the stomach into two compartments he has been able to determine the quality of the gastric juice. He finds that depending upon the variety of the food given the stomach secretes varying quantities and different qualities of juice. Other experiments have demonstrated facts concerning the pancreatic and duodenal digestion hitherto unknown. Taken all in all, Pawlow's work, according to Cohnheim, is the most brilliant ever done in this

line of physiologic chemistry and the results are entirely due to Pawlow's genius, brilliancy, exactness, and perfect surgical technic. [E.L.]

Chronic Hydrocephalus Associated with Gigantism.—G. G. Lempe¹ reports a case that presented features not usual in connection with chronic hydrocephalus. The patient died at the age of 18. When 10 years old he complained first of headache. This was followed later by ataxic gait, vomiting, almost total loss of sight and speech and control of the sphincters, and general swelling. Improvement then began and lasted until the age of 15, when the boy was 5 feet 6½ inches tall. Gradual failure followed return of the headache, and death occurred at the age stated. At that time the patient was 6 feet 7 inches tall and weighed 193 pounds. Only the brain was removed at autopsy, the pathologic conditions found being those of chronic hydrocephalus with a small hematoma in the roof of the fourth ventricle. The orbits were not abnormal in size, the frontal sinuses not enlarged, the jaw not prognathous. The feet and hands were small when compared with the height. The pituitary body was virtually normal in size and construction, excepting a slight hyperplasia. Lempe considers the case, in addition to chronic hydrocephalus, as one of gigantism, not acromegaly. It might have formed eventually into a true case of acromegaly with pituitary enlargement, of which the slight hyperplasia was an early indication, if chronic hydrocephalus and its fatal results had not intervened. [A.G.E.]

Gastric Digestion in Chronic Enteritis.—This element of chronic enteritis has not, according to W. P. Bajouff,² met with the attention it deserves, when we consider the frequency of gastric complications in enteritis. He reports five cases in detail, and sums up the result of his studies in these conclusions: 1. The subjective gastric disturbances accompanying enteritis or enterocolitis are due in most instances to an atrophic gastric catarrh. This catarrh is probably the result of extension from the intestines—ascending gastritis. 2. The subjective gastric phenomena do not, as a rule, correspond to the severity of the anatomic lesions. Advanced atrophy of the stomach walls may coexist with mild dyspepsia, especially when the pylorus is weakened. 3. The prognosis depends on the severity of gastric involvement, which serves as an index of the intestinal lesions. 4. Objective gastric data may be utilized in regulating the diet. In the absence of HCl, meat diet is contraindicated. Frequently the patients themselves select the proper food combinations; however, examination of the stomach contents supplies us with a scientific basis for our treatment. [L.J.]

Gelatin by Mouth in Hemophilia.—Hesse³ reports the case of a boy 8 years of age, whom he has known since birth to be weak, pale, and of slender build. He bruised very easily and his feet often showed blue spots. After each fall he had extensive ecchymoses especially if he struck his buttocks. His teeth fell out spontaneously and he had profuse bleeding from his gums; he bled profusely from slight wounds and often had bloody effusions into his joints. Many things were tried but without result. About a year ago gelatin treatment was begun; he was given 200 grams (6½ ounces) daily in a 10% solution mixed with raspberries or lemon juice. The improvement was noticeable from the first day; for months he has not had epistaxis, gum or joint hemorrhage. Blows and knocks produce only slight ecchymoses. His general health is much better. [E.L.]

The Value of Lemon Juice as a Prophylactic for Typhoid Fever.—W. Johnson⁴ gives the results of experiments to determine the effect of lemon juice upon typhoid bacilli. Results from agar and bouillon as test media were about equal, and showed that a strength of lemon juice equal to 50% of the whole solution killed the germ in less than 10 minutes or at least inhibited its growth. In a 9% solution the bacilli were capable of increase after 20 minutes and in a 2% solution after 24 hours. The results were entirely opposed to the newspaper statements of disinfection by a 1% solution in an hour or less, and which are helping establish a false sense of

¹ Wiener klinische Wochenschrift, January 15 and 22, 1903.² Archives of Pediatrics, May, 1903.³ Brooklyn Medical Journal, May, 1903.⁴ Prager medicinsche Wochenschrift, February 12, 1903.⁵ Münchener medicinsche Wochenschrift, December 30, 1902.¹ Albany Medical Annals, May, 1903² Medizinskoje Obosrenie, lix, No. 6.³ Therapie der Gegenwart, September, 1902.⁴ Northwest Medicine, May, 1903.

security. Heat is the only safe method, and water need not be made unpalatable by having the air boiled out, as it can be rendered absolutely safe by merely bringing it to the boiling point or even many degrees below—140° F. [A.G.E.]

Pathogenicity of *Balantidium Coli*.—Altogether 89 cases of persistent diarrhea, due to *Balantidium coli*, have been previously reported. The cachexia caused by this condition often resembles that seen in the last stages of cancer of the stomach. *Bothriocephalus latus* is also found in many of these cases, the catarrh caused by this parasite evidently predisposing the alimentary tract for the invasion of the balantidium. Twelve fatal cases have been reported, the primary cause of death usually being an ulcerative colitis. E. Ehrnrooth¹ reports still another fatal case, occurring in a woman who had digestive disturbances for 20 years, and suffered from vomiting, diarrhea, and abdominal pains for four months before her death. Autopsy showed that the whole gastrointestinal tract was the seat of chronic inflammatory and degenerative processes. Partial atrophy of the mucous membrane was found in the stomach, and an extensive atrophy in the lower part of the ileum. There were no evidences of a general toxemia caused by the parasite, neither degenerative nor inflammatory processes being found elsewhere in the body. [B.K.]

A Case of Fusiform Dilation of the Esophagus.—P. Zinsser² reports the case of a man of 39, who since his twelfth year complained of his food sticking in the esophagus. At first he was able to wash it down with small quantities of liquids but later it required more. Unless he did this he always vomited his food later. He devised a diet for himself, which permitted him to eat with comfort, but each meal had to include 1½ pints of liquid. His death was due to pulmonary tuberculosis. The autopsy revealed a spindle-shaped esophagus, the largest diameter of which was 4 inches; its walls were very much hypertrophied. As the cardiac orifice showed neither organic constriction nor a valvular mechanism the only feasible explanation for the dilation was spasm of the cardiac orifice, which required a definite weight from above to overcome it. There were no signs of hysteria or nervous disease. [E.L.]

Blood Cultures in Lobar Pneumonia.—E. C. Rosenow³ considers (1) the frequency and time of general pneumococcus invasion of the blood stream and the diagnostic and prognostic value of blood cultures in croupous pneumonia, and (2) the agglutinating and bactericidal action of pneumococcal blood-serum. He has studied 83 cases, positive results being obtained in 77, and cultures secured in 74 of these. Positive results were obtained in all stages of the disease. Friedländer's bacillus was never obtained. The conclusions reached by Rosenow are: (1) With improved technic, using for inoculation large quantities of blood, the pneumococcus can be recovered in all cases of pneumonia, and in obscure cases of pneumococcus infection blood cultures may be a diagnostic method of positive value; (2) pneumococemia in pneumonia does not mean a specially unfavorable prognosis; (3) on account of the difficulties involved agglutination of the pneumococcus is at present of scientific rather than practical value; (4) normal and pneumonic blood and serum appear to have no bactericidal influence on the pneumococcus; (5) the interesting question whether lobar pneumonia is the primary result of a direct local infection of the lung, or a secondary localization in the lung of pneumococci in the blood, is as yet hardly ripe for final discussion. [A.G.E.]

Isoagglutination of Human Blood, Especially in Childhood.—J. Langer,⁴ as the result of his investigations, arrives at the following conclusions: 1. In human serum there is a variety of agglutinins, the erythrocytes of one individual being capable of agglutination by several kinds of serum. 2. The serum of the newborn seldom contains isoagglutinins, but the erythrocytes are as capable of agglutination as those of older children. 3. The acquisition of agglutinins occurs in the first months of life. It is still undetermined whether they arise by simple absorption of the isoagglutinins found in colostrum and milk, or whether their formation is incited by other means. 4.

The formation of isoagglutinins is unaffected by the absorption of hemorrhagic effusions (contusions, cephalhematoma, etc.), or by acute or chronic infectious diseases. 5. Isoagglutination is a phenomenon which has nothing in common with isohemolysis. [B.K.]

Agurin, a New Diuretic.—Agurin is a combination of sodium theobromate and sodium acetate. It is neither irritating to the stomach nor poisonous, and as it contains 60% of theobromin, as compared with 50% in diuretin, possesses greater diuretic powers than this drug. Its especial field of usefulness is to be found in cases of lost cardiac compensation, edema disappearing very quickly under its use. While not contraindicated in parenchymatous nephritis the results from it are not nearly so good, as its action is exerted only on healthy renal epithelium. A. Nusch¹ reports the clinical data of four patients, in all of whom the amount of urine was very much increased. He has also tried it in exudative pleurisy with good results. He recommends 15 grains (1 gram) three times daily, as the dose. [E.L.]

The Dangers of an Exclusive Milk Diet in Nephritis.—A. C. Croftan² says if it were not for the pronounced prejudice in favor of an exclusive milk diet in nephritis it would seem almost trite to adduce what he considers self-evident arguments against the use of this method of feeding, which (excepting possibly in very acute cases of nephritis, and then only for a few days) is directly harmful and dangerous. In selecting a dietary for patients having kidney lesions three indications must be met: (1) General nutrition must be maintained; (2) the renal epithelium must receive a minimum of irritation; (3) the functions of other organs must not be overtaxed. Regarding the first point, too little iron and too much albumin is supplied by an exclusive milk diet. As to the second, much water, much urea, and much phosphate, all elements that act as irritants to the renal epithelium, are carried to the kidney in large quantities when nephritics are fed exclusively on milk. Third, the digestive and cardiovascular organs are impaired by this diet when continued for a long time. In the present state of our knowledge we are not able to formulate any fixed rules in regard to the feeding of nephritics. Hence clinical experience and the reaction of the sick *individual* to treatment, not laboratory findings, and the reaction of the kidney function alone, must be our guides. [A.G.E.]

Malaria, Diseases and Conditions on the West Coast of Africa.—A. A. Loeb³ details four cases of malarial fever which he saw while on the west coast of Africa. He also describes various diseases and conditions found among the inhabitants. He would advise any one visiting the west coast of Africa for the purpose of study to provide himself with a mosquito net, an abundance of light clothing, and a large helmet. As fresh food is often scarce, a good supply of the best canned foods should be always on hand. It is advisable to live as far away as possible from the villages. Proper covering will be required for the rainy season. [F.C.H.]

Tremor and Urinary Intoxication.—A. Horn⁴ calls attention to various symptoms of intoxications observed in patients with urinary retention, and which in some cases have so obscured the clinical picture, as to give rise to mistakes in diagnosis and treatment. He reports the case of a man, who was referred to him on account of nocturnal enuresis and a tremor thought to be senile; he complained of great thirst, loss of appetite, constipation and great weakness. The urine which was voided very frequently, and in large amounts, was perfectly normal. Examination revealed a very large prostate and over a pint of residual urine. Under the treatment, which consisted of regular catheterization, and the use of urinary antiseptics the patient improved and the tremor disappeared completely. If at any time he neglected himself, the tremor was among the first symptoms of the autointoxication to return. [E.L.]

Myelogenous Leukemia with Absence of Eosinophilic Leukocytes.—This case is detailed at length by C. E. Simon.⁵ Briefly, the patient, a man of 42, became markedly anemic

¹ Zeit. für klin. Med., Bd. xlix, p. 321.

² Münchener medicinische Wochenschrift, December 30, 1902.

³ Medicine, June, 1903.

⁴ Zeit. für Heilkunde, Bd. xxiv, 1903, Heft v.

¹ Münchener medicinische Wochenschrift, December 23, 1902.

² Medicine, June, 1903.

³ Philadelphia Medical Journal, June 6, 1903.

⁴ Deutsche medicinische Wochenschrift, December 25, 1902.

⁵ American Journal of the Medical Sciences, June, 1903.

without apparent cause, steadily declined and died at the expiration of 17 months after the anemia began. No subjective symptoms appeared until late in the disease and then consisted only of shortness of breath and general weakness. The spleen was markedly enlarged, the glands but slightly. Hyperleukocytosis, absent at first, was marked at last. Neutrophilic myelocytes were present from the first in notable numbers. Eosinophiles were absent. The unusual features of the blood were the low grade of hyperleukocytosis, the absence of eosinophiles, and the decided increase of mononuclear elements devoid of granules which occurred toward the end of the disease. Simon says there is a growing tendency to attach only secondary importance to the actual number of leukocytes in the diagnosis of myelogenous leukemia, the characteristic feature of the disease being the presence in the blood of foreign elements, the myelocytes. Regarding the absence of eosinophiles this seems to be the only case recorded, Ehrlich stating positively that they are increased in every case. Unless the diagnosis be abandoned in this case, and Simon sees no reason for so doing, our conception of the disease must be extended to comprise the type under consideration. The large mononuclear cells present in such numbers are classed by Simon with the lymphoid cells of Michaelis and Wolff. Their true nature is not determined. There seems to be good ground, as suggested by Reed, for the recognition of three forms of leukemia—the myelogenous, the lymphoid, and the mixed-cell varieties. [A.G.E.]

Some Observations on Tuberculous Patients Sent to Colorado.—S. Simon¹ considers that incipient and first stage patients do well as a rule, provided they are placed under favorable environment and receive proper medical advice immediately upon arriving there. Those patients having the earliest symptoms of tuberculosis and the symptoms are rapidly progressive, have their lives shortened by being sent to Colorado. Many of the patients in the second stage of the disease get well, providing they can afford proper care and accommodations. Cases in the third stages or those patients presenting cavities should not, with rare exceptions, be sent west. Many of the patients sent west do badly because they arrive there penniless and are unable to obtain proper food, care, and attention. [F.C.H.]

Subcutaneous Gelatin Injections in Childhood.—Zupinger² considers gelatin injections in the treatment of hemorrhage from any source, one of the greatest boons of modern medicine. Where from 50% to 100% of all cases of internal hemorrhage in children used to die on account of the lack of an efficient hemostasis very few need do so now since the introduction of gelatin. He briefly reports three cases, in which the bleeding was so severe as to leave the patients almost bloodless. Hypodermic injections of from 1% to 5% solutions of gelatin in varying quantities were used and all of them recovered. Two were cases of scurvy, the third of purpura hemorrhagica. He has also tried it in melena neonatorum, epistaxis, pulmonary hemorrhage, etc., and always with the same result. He warns against the use of commercial gelatin, as this was often found to contain tetanus bacilli. If carefully sterilized few unpleasant after-effects will be noted. [E.L.]

A Case of Cyanosis of the Extremities.—The case reported by A. A. Eshner³ was in a man of 72, who was at first treated for myalgia, with relief. Later the heart was found to be arrhythmic and the hands intensely cyanotic, presenting a variegation in hue between deep purplish-red and leaden. The discoloration was more marked in the left hand which was cool. Pulsation of the right radial was distinct, of the left very faint. The feet presented a lesser degree of cyanosis but there was no palpable pulsation of the left dorsal artery. The nose and adjacent portions of the cheek were cyanotic. No eye lesions were present. The case conforms with the clinical description of Raynaud's disease in the symmetrical and local distribution of the cyanosis and in the absence of anesthesia and atrophy. The difference in the intensity on two sides of the body is not unusual. Eshner believes that the cyanosis is dependent upon the vasomotor atonicity and that the case fits best into the parietic type of vasomotor ataxia of Cohen. [A.G.E.]

GENERAL SURGERY

MARTIN B. TINKER
A. B. CRAIG C. A. ORR

EDITORIAL COMMENT

Tetanus and the Fourth of July.—The week following Independence day celebration will doubtless be marked by the usual increase in the number of cases of tetanus. The deaths and suffering will be one item in the cost of celebration. Where records have been kept, as in the larger cities, they show that more than one-third of the annual deaths from tetanus occur during the month of July. This fact has an interesting exception in the city of Washington whose records show that July furnishes no more than its proportional number of cases. Enforcement of the legal requirements in the capital city readily accounts for the practical absence of Fourth of July tetanus, for on that day, in addition to the usual restriction upon the carrying of concealed weapons stringent measures are enforced against the use of blank cartridges, firecrackers, and other explosives within the District of Columbia. How different are the records under such restrictions from those in cities like New York and Chicago, where H. G. Wells¹ has shown that July furnishes 38.7% of the year's mortality from traumatic tetanus. With but few exceptions the Fourth of July cases of tetanus arise from blank cartridge wounds. Numerous and careful examinations of these cartridges prove conclusively that they do not contain the tetanus germs. The child playing in the street has his hands plentifully soiled with dust and dirt, the favorite habitat of the germs, and the powder and wadding from the blank cartridge carries fragments of this soiled skin deep into the lacerated tissues. This forms the almost perfect anaerobic condition necessary for the growth of the tetanus germs. The organisms do not enter the blood, and, in fact, Kitasato has shown experimentally that they disappear from the tissues at the point of inoculation within ten hours. They are supposed to elaborate toxins in the vicinity of the wound, which rapidly enter the circulation and are believed to have a special affinity for certain cells in the spinal cord. The time elapsing before symptoms arise is thought not to represent the period of incubation, but rather the time necessary for chemic union to take place between the toxins and certain substances of the body. The mortality in acute tetanus is variously estimated at from 80% to 95%; whereas in the chronic form, that appearing after 10 days from the time of injury, it is about 30%. The most important feature in the treatment of tetanus is, of course, its prevention, and this can be done only by following the example set by the District of Columbia; until then we shall have the usual Fourth of July increase. One would suppose most of the fatal cases were among those treated by laymen or self-treated, but H. G. Wells¹ says the histories of 35 fatal cases showed that the vast majority of the victims were treated by a physician soon after the injury, and in not a single instance was a reasonable attempt made to secure proper surgical conditions. The case, reported by Bain,² is unique, and it indicates the proper and necessary treatment. The powder-burned and lacerated tissue of a blank cartridge wound was thoroughly and freely excised soon after the injury. The child did not develop tetanus in spite of the finding of numerous tetanus bacilli in cultures made from the removed tissues and wadding. Every wound of a suspicious nature, especially if made by a blank cartridge, should be promptly treated by thoroughly excising all the lacerated tissue, opening it widely, and using the cautery. This should be supplemented by the hypodermic or spinal intermedullary injection of not less than 5 cc. of tetanus antitoxin, as discovered by Tizzoni and

¹ Philadelphia Medical Journal, June 6, 1903.

² Wiener klinische Wochenschrift, December 25, 1902.

³ Medicine, June, 1903.

¹ American Medicine, June 13, 1903.

² Annals of Surgery, March, 1903.

Cattani. The prophylactic use of the antitoxin has been attended by most encouraging results, whereas if it is used after the development of the symptoms the toxins of tetanus are already far advanced in their deadly work and the prognosis is exceedingly grave. In the treatment of cases in which symptoms have developed mention should be made of the method of Baccelli, who injects 10 cc. to 20 cc. of a 2% carbolic solution hypodermically three or more times daily. According to Italian reports, this has been attended by most remarkable results. We may with some shadow of excuse neglect the tetanus antitoxin and the carbolic solution, but certainly no physician who deserves the name should neglect the proper surgical treatment of the wound, for herein lies comparative safety—open, cleanse, cauterize, and drain.

REVIEW OF LITERATURE

Operative Treatment of Enlarged Prostate.—William Thompson¹ gives a historical review of the literature on the subject and the various operations which have been introduced. The method practised and advocated by the writer is essentially that of Freyer. The bladder is opened in the suprapubic region, after first being thoroughly washed out and distended with boric solution. The catheter is allowed to remain in as a guide to identify the urethra. Reaching the prostate the mucous membrane is snipped or scraped through. Two fingers in the rectum raise and fix the prostate, the forefinger of the other hand shells out the structure in two or more masses. This is sometimes difficult but can be accomplished. Bleeding is controlled by hot boric solution. A large drainage tube remains in for 48 hours. The bladder is frequently washed out. The wound usually closes in about four or five weeks. He objects to the perineal route from the fact that it is impossible to thoroughly explore the bladder by this route and even for successful removal of the prostate it requires a surgeon with a forefinger whose working length is three inches or over, and even then only two-thirds of the cases can be dealt with through this route. The combined perineal and suprapubic route is unnecessary since the suprapubic will give all the necessary working room. He reports a number of cases in all of which he successfully enucleated the prostate. [A.B.C.]

Surgical Intervention in Stenosis of the Esophagus.—H. Lindner² discusses the surgical treatment of esophageal strictures, which he divides into malignant and benign. The treatment for the former consists in feeding the patient as long as possible through the natural passageway. When the constriction becomes too tight for food to pass a gastrostomy should be performed; he prefers Witzel's method. It is only a palliative measure, but is the best that can be done; it prolongs life for from six months to two years. Removal of the tumor is almost impossible, especially so if the thoracic part of the tube is involved. It may be attempted if the cancer seems circumscribed to the neck, but even here the results are not encouraging. Benign strictures yield better surgical statistics. Foreign bodies producing stenoses may be removed by esophagoscopy and extraction; many other stenoses are overcome by gradual dilation; if this is impossible and the nutrition of the patient is suffering a gastrostomy followed by retrograde catheterization is often successful. If diverticula are diagnosed and the patient's life is in danger gastrostomy or resection of the diverticula, if they are high, may be resorted to. [E.L.]

Bilateral Fracture of Heads of Fibulas.—This unique fracture is reported by W. W. Sender.³ It occurred in a working man, who was caught in a machine and dragged along by a revolving wheel. When the machine stopped he struck the floor with his heels. He was conscious, but could not rise to his feet, and was therefore taken to a hospital where during four weeks the treatment consisted in baths and massage. On admission to the clinic the fractures were discovered. The severed fibular heads could be felt on the femoral condyles; the right fragment had the size of a hazelnut, the left was somewhat

smaller; the fragments were but slightly movable in a lateral direction. The distance of the fragments from the shaft of the fibula measured two fingerbreadths on the right and one on the left leg. On flexing the knees the broken parts were approximated. Pain and crepitus present. Motor and sensory disturbances corresponding to paralysis of the perineal nerves are also present. These findings were largely confirmed by a radiogram. An operation was performed and the fragments united with aluminum bronze wire sutures. Six weeks later the man could walk, though his feet continued to hang in the equinovarus position. A later radiogram showed that the sutures had cut through and the fragments were again separated. Orthopedic appliances will therefore become necessary. The nervous disturbances also remain unchanged. [L.J.]

On Syphilis.—According to J. Hutchinson¹ there is no such thing as a pure culture in syphilis. It is introduced in a mixed state and it is owing to the mixture of pus and other secretions that there is the multiplicity of appearances in the primary sores. He warns every one not to tell a patient a sore which may possibly have been contracted from a venereal source is not syphilitic until a month has elapsed; the syphilis may be absolutely latent, or may be concealed by something else. Multiplicity is one of the features by which the nonindurated sore differs from the indurated. The secretion of pus is another. But an indurated sore may also be multiple and non-indurating sores single. Syphilitic virus produces nothing until at least three weeks have elapsed. If you find hard glands in the groin the inference is there has been a chancre on the anus, perineum or genitals; if in the armpit that the hand has been infected. There is such a thing as syphilis without any obvious chancre, but in most such cases some trivial sore has been overlooked. If the sore is inflamed and ulcerated the bubo is inflamed and tends to suppurate. While a primary chancre may never ulcerate it is sometimes nothing but an ulceration. The secondary stage will often begin while the primary one is still existent. Generally two months elapse before secondary symptoms begin. Fruit and green vegetables should be forbidden while taking mercury to prevent diarrhea. [H.M.]

Syphilitic Fibrous Stricture of the Stomach and Intestines.—H. Gross² describes syphilitic fibrous intestinal strictures as the product of an infection, which characterizes itself mainly through the formation of pure connective tissue. The intactness of the mucous membrane and the cylindrical form of the stricture speak for the syphilitic process causing them as belonging to the simple, irritative, and not to the gummatous form. He relates the details of two cases, in which the diagnosis of pyloric stenosis was made and operations performed. The first patient died suddenly 10 days after the operation, and at the autopsy multiple strictures of the intestines were found. The second patient died several months after the performance of a gastroenterostomy. It presented the same picture as the first case. Microscopic examination in both cases showed the process limited to the submucosa, and composed of inflammatory tissue, rich in cells, and not neoplastic. Scars and syphilitic infiltrations were to be found in the peritoneum surrounding the various abdominal organs. [E.L.]

Giant-cell Sarcoma of Bone.—The case reported by J. C. Bloodgood³ is that of a man of 29 who had a giant-cell medullary sarcoma of the upper end of the tibia, probably dating from trauma received nine years previous. The upper end of the tibia was greatly expanded, containing a bony cavity 7 cm. by 4 cm. (3 by 1½ inches), which was occupied by the new-growth. The knee-joint was not involved. The tumor was removed and the entire bone cavity cureted, swabbed with pure carbolic acid, followed by alcohol, and then irrigated with 1:1,000 bichlorid solution, followed by normal salt solution. The bone was found to be perforated by 25 or 30 vessels as large as the temporal artery, each of which had to be plugged with Horsely wax. Three months after operation the cavity is filling with granulation tissue and no sign of recurrence is present. Bloodgood says he felt justified in attempting a cure by cureting instead of amputation because of the facts brought

¹ British Medical Journal, April 18, 1903.

² Münchener medizinische Wochenschrift, February 3, 1903.

³ Russki Vrach, February 22, 1903.

¹ Medical Press and Circular, January 7, 1903.

² Münchener medizinische Wochenschrift, January 27, 1903.

³ Johns Hopkins Hospital Bulletin, May, 1903.

out in a recent study of bone sarcoma. Among 42 cases of bone sarcoma in Professor Halsted's clinic, 7 were giant-celled, 4 medullary, and 3 periosteal. These cases are detailed, and the facts regarding them are believed to justify the removal of these tumors without destroying the continuity of the bone. [A.G.E.]

Early Diagnosis in Cancer of the Stomach.—Mayo Robson¹ reports in detail a number of cases, and says that removal of even a considerable portion of the stomach may be at times more than a mere palliative operation, and though early diagnosis is very important we may not conclude with some surgeons that a manifest tumor shows the condition too late for surgical interference. His conclusions are: That it is desirable to make an early diagnosis of cancer of the stomach in order that a radical operation may be performed at the earliest possible moment; that it may be needful to perform an exploratory operation in order to complete or confirm the diagnosis; that such an exploration may be done with little or no risk in the early stages of the disease; that even when the disease is more advanced and a tumor perceptible, an exploratory operation is as a rule still advisable in order to carry out radical or palliative treatment; that when the disease is too extensive for any radical operation the palliative operation of gastroenterostomy, which can be done with small risk, may prolong life and make it more comfortable; that some cases thought at the time to be cancer, too extensive for removal, may after gastroenterostomy get well; that in cases of disease of the cardiac end of the stomach too extensive for removal, the operation of gastrostomy may considerably prolong life and prove of great comfort; that even when the disease is too extensive either for removal or for a gastroenterostomy being performed with a fair chance of success, the operation of jejunostomy may occasionally prove of service to the patient; that when a radical operation can be performed the thorough removal of the disease may bring about as much relief to the patient as does the operation for the removal of cancer in the breast, uterus, and other organs of the body, and that in some cases a complete cure may follow. [A.B.C.]

Enterocystoma as a Cause of Intestinal Obstruction.—Enterocystoma is the name given to a retention cyst arising in the intestinal end of the omphalomesenteric duct. Eighteen cases have been reported, in four of which the cyst has caused symptoms of intestinal obstruction during life. A. Krogus² adds to the latter still another case in which a six weeks' infant showed a steadily increasing degree of constipation, vomiting, later fecal in character, and all the signs of intestinal obstruction. Operation revealed a cystic tumor enclosed between the longitudinal and circular muscle coats of the ileum at the ileocecal junction. The cyst was lined with intestinal mucous membrane. The operation was done in two stages to avoid too severe a shock to the already weakened infant, who, however, died of an unfortunate secondary hemorrhage from a mesenteric artery. [B.K.]

Provisional Hemostasis in Operations upon the Head and Neck.—George R. Fowler³ comments upon the various methods of securing provisional hemostasis, and reports three cases of temporary carotid occlusion—one in a case of gunshot wound of the neck, the other two being intracranial neurectomies. In the first case the common carotid artery was occluded by the twisting of a ligature at the same site on two occasions during the control of hemorrhage. The common carotid was finally ligated at the second operation, but no disturbance followed the first occlusion. In one case of neurectomy hemostasis was practically complete. Slight sensory aphasia followed, but there is doubt as to whether this was due to an embolus or to injury inflicted by the elevator in lifting the central mass of the brain. Circular constriction was used in occluding the artery, but a flat clamp as used by Crile is believed to be a better means, especially in atheromatous vessels. The second case of intracranial neurectomy was accompanied by considerable venous oozing, this probably being due to compression of the internal jugular vein by a compress placed within the loop of the tape to prevent injury to the artery. [A.G.E.]

¹ British Medical Journal, April 25, 1903.

² Zeitschrift für klin. Med., Bd. xlix, p. 53.

³ Buffalo Medical Journal, June, 1903.

GYNECOLOGY AND OBSTETRICS

WILMER KRUSEN

FRANK C. HAMMOND

REVIEW OF LITERATURE

Accidental Perforation of the Uterus.—A. Brothers¹ divides these cases into three classes. The first class includes those in which during the passage of the sound or curet the uterus is perforated, and the accident is revealed by the fact that the instrument passes to a depth beyond the length of the uterus. The prognosis is good if the field of operation is aseptic. Internal manipulation should cease at once, and no intrauterine irrigation should be made. If the curetage or sounding was preliminary to an intraperitoneal operation, this may be proceeded with and the injury repaired with several catgut sutures. No drainage is necessary. Otherwise the patient ordinarily can be safely put to bed with an ice-bag over the hypogastrum and given morphin or opiates. 2. If the uterus has been injured and the operator has irrigated the uterine interior, three sets of conditions may arise. In the first a mild peritonitis may call for nothing more than the same line of treatment. In the second set an acute septic peritonitis may call for an immediate hysterectomy (usually vaginal) with drainage per vaginam. The third set of cases may be less virulent and more chronic, are apt to terminate in local abscesses and rarely require hysterectomy. 3. In those cases in which the uterus has been injured and the intestine has been dragged through the wound and become strangulated, laparotomy must be done as soon as possible. If the strangulation has been fatal to the vitality of the bowel, this must be excised. The uterus may then, according to the judgment of the operator, be repaired or removed. Bovée believes that hysterometry and curetage should be resorted to far less frequently than at present is the case. [W.K.]

Hepatoptosis.—N. Saweljew² gives a comprehensive description of movable liver in regard to etiology, symptoms, diagnosis and treatment. Whatever leads to a relaxation of the abdominal ligaments, and whatever lowers the intraabdominal pressure may be a direct or indirect etiologic factor. Hepatoptosis occurs much more frequently in women, owing to the relaxing influence of pregnancy and labor. Tight lacing can hardly be considered as an important accessory factor. The displacement of the liver may be sudden, following trauma for instance, or its development is gradual. The symptoms will be acute or chronic, accordingly. Generally speaking, the elements entering into the clinical picture are dragging and fullness of the abdomen, pains, nausea, vomiting, dizziness, constipation or diarrhea, ascites, a peculiar "hepatic" cough, and other allied disturbances. The combination of symptoms are numerous and give a varying picture. The diagnosis rests on palpation and percussion in conjunction with the subjective phenomena. The liver dullness is found to change in different positions, and the organ may be felt in its new location. Movable kidney is excluded without difficulty when its smaller size, different contour, etc., are kept in mind. Hepatoptosis gives a tolerably good outlook *quod vitam*, especially under appropriate treatment and regimen. The patient must be instructed to avoid exertion, succussion and the like; his diet should be regulated with a view toward increasing the fat of the body. The direct treatment consists in replacing the displaced organ by manipulations, and retaining it in the proper situation with the aid of a broad abdominal bandage. These mechanical devices generally afford the sufferer great relief. In the event of their complete failure, however, operative interference may become inevitable, and consists in attaching the liver to the abdominal wall. Hepatopexy has been performed no less than 39 times since its introduction in 1887, and the results justify future resort to the operation. [L.J.]

Fetal Retention After Rupture of Pregnant Uterus.—Lajos Goth³ gives the history of a case in which the fetus was retained two months after uterine rupture. The woman, aged 29, in the latter part of her sixth pregnancy received from a calf a thrust in the abdominal region, resulting in her keeping

¹ American Gynecology, April, 1903.

² Medizinskoje Obosrevie, Hx, No. 1.

³ Zentralblatt für Gynäkologie, April 4, 1903.

her bed for three days, though without any alarming or severe symptoms; but no fetal movements were felt afterward. She then returned to her household duties, but six weeks later, at about term, abdominal pains set in, though without the intermittent character of labor pains or other indication of labor, and ceasing in a few days. A week later there was a hemorrhage of seven days, followed by return of pain with rise of temperature, and the patient was sent to a hospital. Examination showed that the uterine cavity contained pieces of bones, evidently parts of a decomposed fetus. In emptying the uterus there was found a gaping laceration in the anterior cervical wall, which contained the greater part of the fetal remains. No placenta or place of placental insertion could be found. The bones were in size those of a seven months' fetus. Goth believes that this was an instance of interstitial pregnancy, and that the rupture occurred at the time when the patient suffered the blow from the calf, and that because of this rupture the uterus became incapable of labor activity, and acted simply as an ectopic fetal sac, holding the fetal parts without any effort at expulsion. The patient 50 days after the operation was able to leave the hospital. [W.K.]

The Recognition of Fetal Syphilis.—Hecker¹ has made thorough examinations of 62 still-born children, and has found 33 (53%) syphilitic, and 6 (9.7%) doubtful. Many of the cases (15 of the 33) could not be definitely considered syphilitic immediately at autopsy, but had to be examined histologically before the diagnosis could be made certain. A macroscopic diagnosis was made only when at least two organs showed undoubted signs of syphilis. The spleen was the organ oftenest affected; then the bones, liver, kidney, etc. For histologic examination the kidneys are the most suitable organs, as they are the last to show signs of maceration, and are found more frequently diseased microscopically than any other organ. They were found involved in 90% of cases—spleen, 61%; thymus, 50%; pancreas, 46%; bones, 43%; liver, 23%; lung, 17%; navel, 16%. The so-called macroscopic syphilitic bone lesions were often found microscopically to be only irregularities due to maceration. He discusses at length the macroscopic and microscopic syphilitic lesions, dividing the former into pathognomonic, probable, and uncertain signs, and considering the latter from the standpoint of the bloodvessels, the connective tissue, the epithelium, and the disturbances of development. He concludes his valuable article with the dictum: Does the autopsy of a mature or immature fetus leave the presence or absence of syphilis in doubt, a microscopic examination should be resorted to. If frozen sections cannot be stained, small pieces of kidney spleen, thymus, pancreas, lung and liver should be hardened. The kidney should be examined first, and in case of negative results, the other organs in the order named. The round cell infiltration about the renal bloodvessels will usually make the latter superfluous. Congenital syphilis may with certainty be said to be absent, only when microscopic examination of all the organs mentioned has shown that none of the pathologic lesions of syphilis were present. [E.L.]

Labor After Symphysiotomy.—Otto Ihl² contends in opposition to some writers that symphyseotomy usually has a favorable influence upon later deliveries; in many cases indeed the birth passage is permanently enlarged, and in others it is more readily distensible during labor. This is especially true in those cases in which after symphyseotomy there is not a primary union of the parts and a loose joint is formed. He gives the history of a patient who after this operation had three normal deliveries. Whether this advantage in such cases outweighs the disadvantage in walking which results from such a loose reunion of the parts, may be questioned, but Ihl is of the opinion that in many instances such women learn to adapt themselves to changed conditions and regain their power of locomotion, while with others some support, as with a cane, is always necessary. [W.K.]

Hour-glass Contraction of the Uterus in Breech Presentations.—According to R. de Bovis³ but 14 such cases have been reported, to which he adds a fifteenth. The complication, however, has been more frequent with vertex presentations.

The author's case was that of a healthy multipara of 38, who had been in labor 24 hours without apparent progress. Examination under chloroform revealed a left sacroanterior breech presentation partly engaged in the superior strait. The thighs of the fetus were firmly grasped by the contracting ring of Bandl which presented a cartilaginous consistence. In some cases the whole fetus lies above the ring and in others the infant's neck has been caught in the constricting band. The condition is usually accompanied by violent pain. The chief function of the ring of Bandl is to afford a point of insertion for the longitudinal muscle fibers of the uterus. If the circular fibers composing the ring are subjected to excessive strain, as from too frequent or prolonged labor pains, a degree of contraction results varying from simple spasm to tetanization. In the latter condition the elasticity and contractility of the muscle are lost. The contractions of the ring of Bandl may or may not be accompanied by a corresponding contraction of the uterine fundus. Treatment should consist in employing moderate forces to dilate the uterus, bringing down a foot, if possible, to aid in traction on the fetus. If these measures fail, the question of cesarean section should be considered. [B.K.]

Degenerations and Complications of Fibroid Tumors.—C. P. Noble,¹ after making a statistical study of 258 cases of fibroid tumors in his own experience, with their degenerations and complications, and reviewing the reports of C. J. Cullingworth, C. C. Frederick, and A. Martin, upon a series of numerous cases, concludes that it is a conservative statement that upward of one-third of women having fibroid tumors will die if not subjected to operation. The contrast with the results which can be secured by operation is very striking. It probably will not be disputed that the mortality of myomectomy and hysterectomy is between 2% and 10%, depending upon the gravity of the case, upon the operator, and upon the environment in which the operations are done. It seems a fair conclusion that the resort to early operation will effect a saving of from 25% to 30% in mortality, in addition to the perhaps greater saving in the morbidity which follows operation, as compared with that which is incident to the history of fibroid tumors. Early operation in the case of young women having one fibroid or a few small fibroids affords the truest opportunity for conservatism by curing these women of their disease and at the same time retaining their organs of reproduction. It seems to him that the attitude of the textbooks should be reversed, and that the rule of practice should be to remove all fibroids which come under observation, unless in a particular case there seems to be some good reason for temporizing, due either to the small size of the tumor, or to the advanced age, or to the general health of the patient. [W.K.]

Phleboliths in the Female Genitalia.—K. Czerwenka² reports the case of a woman of 40, suffering from metrorrhagia. The walls of the vagina contained numerous dense nodes as far up as the center of the cervix. Upon excision they were found to be phleboliths composed of calcium phosphate and carbonate. They, as well as the uterine hemorrhage, were probably due to stasis in the pelvic veins the result of a previous pregnancy. [E.L.]

Comparative Examination of Maternal and Fetal Blood and Liquor Amnii and of Fetal Urine.—W. Zange-meister and Th. Mussl³ having made a study of this subject conclude that the number of red corpuscles is mostly greater in fetal than in maternal blood; that the white ones are somewhat less, and the red corpuscles of the infant blood are richer in hemoglobin. The maternal blood coagulates more rapidly and more completely, the blood-clot being firmer and the serum of a lighter color. The serum of the mother's blood contains more albumin, hence its specific gravity is greater; also the amount of nitrogen is greater. The chlorids in both kinds of blood are about the same and also the point of coagulation. The liquor amnii has a somewhat less specific gravity and less albumin and chlorids, but the amount of nitrogen is larger than that of either maternal or fetal serum and the point of coagulation is somewhat lower. The molecular concentration of the urine of the newborn is scarcely half as great as that of the blood, and

¹ Deutsche medicinische Wochenschrift, November 6 and 13, 1902.

² Münchener medicinische Wochenschrift, April 21, 1903.

³ La Semaine Médicale, May 20, 1903.

¹ American Gynecology, April, 1903.

² Wiener klinische Wochenschrift, January 8, 1903.

³ Münchener medicinische Wochenschrift, April 21, 1903.

the writers conclude from their extended investigations that the comparatively small molecular concentration of the liquor amnii is caused by the inflow of fetal urine, and that the fetus, at least during the last four months of pregnancy, discharges urine regularly into the liquor amnii. [W.K.]

Prognosis and Treatment of Puerperal Eclampsia.—According to W. E. Fothergill¹ when the condition is threatened the prognosis depends on the result of prophylactic treatment. Edema is frequently absent in serious cases. Too much importance must not be attached to the number and severity of the fits which depend not only on the quantity and nature of the poison but on the nervous equilibrium of the patient. The poison may be so virulent as to destroy the irritability of the nervous system. Morphin and other sedatives may mark the true condition. Convulsions after labor is over, point to a grave condition. The most favorable cases are those in which the convulsions are initiated by obstetric manipulations. The quantity of albumin is a false guide, that of urea is much more reliable. If anuria is complete things cannot be much worse. Only 1% of urea points to serious disorganization of metabolism; with 1½% or 2% the prognosis is favorable. During pregnancy signs of toxemia indicate active treatment including rest in bed and eliminatives. Thyroid extract to increase metabolism and promote diuresis is worthy of trial. Should the patient fail to respond to treatment the pregnancy should be terminated. With convulsions and coma saline transfusion and bleeding should be added to the other measures. There is a reaction against active obstetric treatment during eclamptic seizures. Slow induction of labor before any attack has occurred, or after one attack has been tided over is daily becoming more popular. [H.M.]

The Use of Bossi's Dilator.—Jentzer², trained in the fear of rapid dilation in accouchement forcé, was so influenced by the warm recommendation of Bossi's dilator that he decided to test its value on the first favorable case. The history of the case is fully given, being that of a primipara brought to the hospital after two attacks of eclamptic convulsions. Others followed and the prognosis for the mother being very bad, he made a rapid dilation by means of Bossi's instrument and with forceps delivered a living child. The uterus contracted well; the placenta was manually delivered and two small lacerations were sutured. The patient, however, died the next day, death being ascribed to the eclamptic poisoning and not to the rapid dilation which at least saved the life of the child. Jentzer concludes that the dilators may be of great service in cases of incomplete abortion. [W.K.]

The Prevention of Puerperal Eclampsia.—J. T. Wheeler³ speaks of the difficulty confronting the physician in general practice if he attempts to give a thorough supervision of the renal condition of his pregnant patients. To obviate this he would teach the laity the insidious nature of the kidney disease of pregnancy and as an object lesson teach the women to examine their own urine at stated intervals for albumen. They should make the test twice a week from the sixth month onward. That this might make the woman nervous or that she might become careless are not considered to be valid objections. Among the poorer classes it would help extend the benefits of prevention to those otherwise utterly deprived of it. Wheeler speaks from an experience of 20 years with this method. [A.G.E.]

Prolapse of Ureter.—E. V. Hibler⁴ reports that a child 6 months old was brought to the clinic by its mother because of frequent urination. Examination showed in the vulva what appeared to be a thin-walled cyst about the size of a hen's egg attached to a pedicle protruding from the urethra. The cyst collapsed upon being emptied of the fluid and the necrosed part hanging from the urethra was cut off and preserved for examination. The condition of the child, good at first, soon became feverish and uremic and death quickly followed. The autopsy showed that the apparent cyst was a portion of the ureter, which had prolapsed through the bladder and urethra into the vulva. [W.K.]

TREATMENT

SOLOMON SOLIS COHEN

H. C. WOOD, JR.

L. F. APPELMAN

REVIEW OF LITERATURE

Treatment of Local Tuberculosis.—Ed. Desesquelle¹ has obtained good results in the treatment of suppurating wounds and particularly in tuberculous cervical adenitis by means of injections of iodoform dissolved in camphorated betanaphthol. The quantity of liquid employed depended upon the size of the ganglion, but he never injected more than eight drops. Desesquelle believes that the good results obtained by this treatment were in a great measure due to the hardening action of the naphthol. [L.F.A.]

Mesotan, a Preparation of Salicylic Acid for External Use.—Mesotan, the methoxymethylester of salicylic acid, is a light yellow fluid of aromatic odor, soluble in ether and in aryl fluids, and mixable with oil; it is nonirritant for the skin, and after absorption is excreted in the urine as salicylic acid. Roeder² has used it 54 times in 150 patients; in cases of subacute rheumatism the results were excellent; they were almost as good in acute polyarticular rheumatism, but less so in rheumatoid arthritis. In peripheral neuritis, especially of gouty origin, no benefit was noticed, and several times dermatitis followed its use, probably due to the action of salicylic acid on inflamed nerves. His method of application consists in painting equal parts of mesotan and olive oil over the affected area, and covering it with cotton or silk. He warns against rubbing it in. [E.L.]

Pustular Acne of the Face.—Leredde³ points out that in the treatment of acne it is necessary not to confound an acne developed on a sensitive skin, as in women, with an acne which appears on a hard skin which is but slightly sensitive. Sulfur is the remedy usually employed; but its action depends not so much on any special property of its own as upon the excipient with which it is incorporated. To this end two sorts of excipients are distinguished; first, agents which congest the skin, obliterate the glands and prevent cutaneous perspiration; the fats; second, the agents which decongest the skin and facilitate cutaneous perspiration: powders and pastes. Pastes are employed when the skin is sensitive. The following paste may be used in profound acne:

Precipitated sulfur	20 grams. (5 drams)
Black soap	10 grams. (2½ drams)
Pyrogallic acid	5 grams. (1 dram)
Zinc oxid	30 grams. (1 ounce)
Vaselin enough to make	100 grams. (3½ ounces)

The application should be preceded by washing the skin carefully with salicylated soap. The paste should be applied in the evening and left in contact all night when the skin is hard; in women it should be removed at the end of one or two hours. Large quantities of sulfur are borne better when prescribed in this form than when prescribed in ointment in smaller quantities. The following ointment may be used when the skin is not sensitive:

Precipitated sulfur	5 grams. (1 dram)
Calomel	2.5 grams. (½ dram)
Lanolin	20 grams. (5 drams)
Vaselin	75 grams. (2½ ounces)

General treatment should be instituted at the same time to correct any gastric disturbance which may be present. [L.F.A.]

The Influence of Digitalis on Blood-pressure.—In an interesting dissertation P. I. Tsiplajew⁴ details his observations on the action of digitalis in cardiac disease with loss of compensation. He summarizes his conclusions as follows: (1) Digitalis at first increases arterial pressure in uncompensated heart affections; (2) this increased pressure, after having reached its maximum, gradually falls in favorable cases independently of further administration of digitalis; (3) the fall of arterial pressure is preceded by an increased difference between capillary and venous pressure and by slightly marked diuresis; (4) the increase of the difference between venous and capillary

¹ Medical Chronicle, March, 1903.

² Zentralblatt für Gynäkologie, May 9, 1903.

³ Albany Medical Annals, June, 1903.

⁴ Wiener klinische Wochenschrift, April 23, 1903.

¹ Bulletin Général de Thérapeutique, Vol. cxlv, No. 8, 1903, page 299

² Münchener medicinische Wochenschrift, December 16, 1902.

³ Journal des Praticiens, Vol. xvii, No. 11, 1903, page 168.

⁴ Dissertation, St. Petersburg, 1903.

pressure corresponds closely to an increased daily quantity of urine; a diminution in the pressure difference is accompanied by diminished urine excretion; (5) in unfavorable cases neither the increased difference of pressure nor the diuresis nor the arterial pressure fall have been noted; (6) in favorable instances arterial pressure falls secondarily below its original level; this pressure is originally increased above normal during loss of compensation, while the difference between venous and capillary pressure is diminished in these cases; (7) during attacks of dyspnea blood-pressure rises; (8) digitalis shows its effects in the first 24 hours of treatment; (9) the drug exerted its best influence in organic mitral lesions, which also presented the least difference between venous and capillary pressure; (10) the beneficial action of digitalis cannot be attributed to its stimulating effect on arterial blood-pressure; (11) palpation of the pulse gives no reliable account of the blood-pressure. Under digitalis administration the pulse-curve shows higher excursions. [L.J.]

Treatment of Ozena.—Vaquier¹ recommends copious douches of hot water containing sodium chlorid, sodium bicarbonate, lysol, gomenol or naphтол in solution in order to detach the crusts. A small quantity of one of the following ointments may then be introduced:

- Menthol 0.3 gram (4½ grains)
 - Boric acid 2 grams (30 grains)
 - Vaselin 30 grams (1 ounce)
- or,
- Gomenol 5.0 grams (1 dram)
 - Resorcin 1 gram (15 grains)
 - Vaselin 30 grams (1 ounce)
- or,
- Diiodoform 5 grams (1 dram)
 - Vaselin 20 grams (5 drams)

The injection of antidiphtheric serum has been used to aid the catarrhal secretion which eliminates the crusts. Local application of iodine or the iodids after cocain anesthesia has given excellent results. The following may be used twice a week by means of a cotton applicator:

- Iodin,
- Potassium iodid of each 1 gram (15 grains)
- Distilled water 6 grams (1½ drams)

The internal administration of from 1 gram to 2 grams (15 grains to 30 grains) of potassium iodid daily for 15 days causes an increase in secretion and acts as a stimulant to the nasal mucous membrane. [L.F.A.]

Theocin, a New Diuretic.—Theocin, a new synthetic caffeine compound, is twice as effective in increasing the flow of urine as theobromin is. It is easily soluble, less poisonous than theobromin, and is used in powder form in doses of ½-1½ grams (7½-18 grains) daily. It acts much quicker than theobromin, but as its effect is lost quickly it cannot entirely displace this remedy. It cannot displace caffeine, as it has no stimulating action for the heart; it also does not influence blood-pressure. It is indicated in cases where a large edema must be removed quickly. C. Doering² reports his results in seven cases, which were uniformly favorable. [E.L.]

The Action of Methylene-blue on Tuberculous Ulcerations.—Louis Rénon and E. Geraudel³ have treated five tuberculous patients suffering from ulcerations of the tongue and of the soft palate by daily local applications of powdered methylene-blue. These patients were nearing the last stage of pulmonary tuberculosis and the results of the treatment were remarkable. In all the cases there was a very marked diminution in the pain which had rendered eating almost impossible, and the local condition was much improved. The ulcerations became clean; they diminished in depth and extent, and cicatrized from the bottom and from the sides, the yellow points disappeared. In three cases cicatrization was complete and remained so until death. [L.F.A.]

Action of Electric Baths.—A. P. Rosen⁴ has studied the action of electric light and light-heat baths on healthy men. He publishes a few preliminary conclusions, of which we shall

only note the marked improvement of appetite and sleep that followed a series of 12 baths. A gain in bodily weight was also recorded after the light-heat baths. These favorable changes seemed to be lasting. The manner in which the blood reacted to the baths, showing now a numerical increase, now a diminution of the cells, is also mentioned by the author. The subject will receive a more thorough future exposition at his hands. [L.J.]

Anesthesin in Rhinology.—A Courtade¹ reports his results from the use of anesthesin in rhinology. This substance is a paraamidobenzoic ether which is slightly soluble in cold water, and readily soluble in chloroform, acetone, oils and fats. It is also soluble in hot glycerin but precipitates when the temperature is lowered. A mixture of anesthesin and pure carbolic acid when heated forms a very limpid liquid which solidifies upon cooling; if, when the mixture is still liquid, hot water is added, there is a separation of a powdery product which consists of anesthesin, if, on the contrary, glycerin is added, the solution remains liquid and clear, even at the ordinary temperature. Courtade employed the powdery product in his clinical work. Its local application by means of a cotton probe produces anesthesia of the area to which it is applied. Several cases are reported in which anesthesin was successfully employed in the removal of enlarged tonsils, for the relief of the pain and dysphagia accompanying tuberculous laryngitis, and in syphilitic ulceration of the larynx. In laryngitis accompanied by painful dysphagia Kessel employs anesthesin in solution in olive oil, as follows:

- Anesthesin 20 grams (5 drams)
- Menthol 10 to 20 grams (2 to 5 grains)
- Olive oil 100 grams (3½ ounces)

The menthol may be omitted if it is badly tolerated or is useless. In these cases, Courtade prefers to use the drug by insufflation or by means of a cotton applicator. No symptoms of irritation or intolerance have followed its use. Anesthesin may also be used internally for the relief of pain due to gastric ulcer. [L.F.A.]

Death Following Benzine Poisoning.—Racine² reports the case. A child of 2 years, who shortly after drinking between 10 and 15 grams (2½-4 drams) of benzine lost consciousness. Her pupils dilated and became fixed, she became cyanosed, and the skin was cold to the touch; her respirations became more and more rapid and shallow, her pulse small and galloping; clonic cramps set in later and death followed within two hours of drinking the benzine. Ether injections produced no results; lavage was not attempted. The autopsy performed two days later revealed an almost identical picture with carbon monoxid poisoning. The cadaveric lividity was of a marked light red, the blood very fluid and cherry red, and almost all the red blood-corpuscles were broken up. Petechia and hemorrhagic extravasations were found in all the internal organs; there was follicular gastroenteritis and hyperemia of the brain and its membranes. [E.L.]

Collargol in Therapeutics.—Netter³ reports good results from the use of collargol in the treatment of endocarditis, bronchopneumonia and diphtheria. In two cases of rheumatic endocarditis in which a mitral murmur was heard, two intravenous injections of 5 cc. (80 minims) of a 1% solution of collargol caused this to disappear in a few days. In bronchopneumonia, the injection of collargol produced marked improvement in the general condition of the patient and at the same time lowered temperature. Its employment in diphtheria, associated with serum therapy has greatly lessened the mortality in grave cases of this disease. No dangerous symptoms have followed the intravenous injection of collargol in doses of from 4 cc. to 9 cc. (1 dram to 2½ drams) of a 1% solution. In using collargol externally, Netter insists on previous careful cleansing and antiseptic of the skin as in preparation for an operation. An ointment containing 15% of collargol in benzoinated lard with 10% of wax is applied daily or twice daily accompanied with active friction for 10 minutes. The area is then covered with gauze and oiled silk. [L.F.A.]

¹ Journal des Praticiens, Vol. xvii, No. 6, 1903, page 89.
² Münchener medicinische Wochenschrift, March 3, 1903.
³ Bulletin Général de Thérapeutique, Vol. cxiv, No. 6, 1903, p. 220.
⁴ Russki Vrach, March 29, 1903

¹ Bulletin Général de Thérapeutique, Vol. cxiv, No. 8, 1903, page 301.
² Vierteljahrsschrift für Gerichtliche Medicin, Vol. xxii, p. 63.
³ Journal des Praticiens, Vol. xvii, No. 6, 1903, page 87.

THE PUBLIC SERVICE

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended June 20, 1903:

SMALLPOX—UNITED STATES.

		Cases	Deaths
California:	Los Angeles..... May 30-June 6 ...	1	
	San Francisco..... May 31-June 7.....	1	
	Denver..... May 2-23	70	
Colorado:	Baker County..... June 6-13	1	
	Duval County..... June 6-13	3	
Florida:	Escambia County..... June 6-13	1	
	Levy County..... June 6-13	10	
Illinois:	Belleville..... June 6-13	3	1
	Evansville..... June 6-13	2	
Indiana:	New Orleans..... June 6-13	1	
	Holyoke..... May 31-June 6.....	2	
Massachusetts:	Detroit..... June 6-13	11	
	Flint..... June 6-13	1	
Michigan:	Grand Rapids..... June 6-13	3	
	Port Huron..... June 6-13	1	
Minnesota:	Winona..... May 30-June 13.....	2	1
	Nashua..... June 6-13	7	
New Hampshire:	Cincinnati..... June 5-12	3	
	Dayton..... June 6-13	6	
Ohio:	Hamilton..... June 6-13	1	
	McKeesport..... June 6-13	2	
Pennsylvania:	Warwick..... June 5-6	4	
	Charleston..... June 6-13	2	
South Carolina:	Nashville..... May 23-30.....	1	
	Salt Lake City..... May 31-June 6.....	23	
Tennessee:	Milwaukee..... June 6-13	16	

SMALLPOX—FOREIGN.

Brazil:	Rio de Janeiro..... May 3-10.....	5	
	Amherst, N. S..... June 12.....	3	
Canada:	Fredericton, N. B..... June 12.....	5	
	Las Palmas..... May 9-16.....	18	
Canary Islands:	Barranquilla..... May 24-31.....	1	
	Bocas del Toro..... June 2.....	1	Epidemic.
Colombia:	Paris..... May 8-30.....	2	
	Birmingham..... May 23-30.....	7	
France:	Bradford..... Mar. 30-May 23.....	100	5
	Bristol..... May 23-30.....	1	
Great Britain:	Dublin..... May 23-30.....	14	
	Dundee..... May 23-30	5	
Leeds..... May 23-30.....		21	3
	Liverpool..... May 23-30.....	33	4
London..... May 23-30.....		10	
	Newcastle-on-Tyne..... May 23-30.....	1	1
Nottingham..... May 16-23.....		2	
	Sheffield..... May 23-30	1	
South Shields..... May 23-30.....		1	
	Sunderland..... May 23-30.....	1	
India:	Bombay..... May 5-19.....	111	
	Calcutta..... May 2-16.....	3	
Japan:	Kobe..... Apr. 25-May 2.....	6	
	City of Mexico..... May 17-31.....	31	13
Mexico:	Moscow..... May 16-23	4	
	Odessa..... May 16-30.....	4	1
Russia:	St. Petersburg..... May 16-30.....	71	14
	Warsaw..... May 2-16.....	5	
Straits Settlements:	Singapore..... Apr. 18-May 2.....	1	

YELLOW FEVER.

Brazil:	Rio de Janeiro..... May 3-10.....	8	
	Limon..... May 28-June 4.....	4	1
Costa Rica:	Tampico..... June 1-8	15	9
	Vera Cruz..... May 31-June 6.....	26	8

PLAGUE—UNITED STATES.

California:	San Francisco..... June 5.....	1	
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PLAGUE—FOREIGN.

Africa:	East London..... Apr. 12-25.....	2	
	King William's Town..... Apr. 12-23.....	5	
China:	Post Elizabeth..... Apr. 12-25.....	15	
	Hongkong..... May 1-8.....	95	83
India:	Bombay..... May 5-19.....	740	
	Calcutta..... May 2-16.....	171	
Karachi..... May 3-17.....		332	292
	Yokohama..... May 8-16.....	2	
Japan:	Callao..... May 3-10.....	2	

CHOLERA.

China:	Canton..... May 8.....	50	
	Hongkong..... May 1-8.....	2	
India:	Bombay..... May 5-19.....	1	
	Calcutta..... May 2-16.....	125	
Turkey:	Damascus..... To May 15.....	94	84

Changes in the Medical Corps of the U. S. Army for the week ended June 20, 1903:

BARRON, First Lieutenant NOEL I., assistant surgeon, now at Fort Wright, will remain at that post until the departure of Cos. K and M, 17th infantry, for San Francisco, Cal., which organizations he will accompany to San Francisco, Cal., where upon arrival he will report to the commanding officer 17th infantry, to accompany that regiment to the Philippine Islands.

HUNTINGTON, First Lieutenant PHILIP W., assistant surgeon, now at Vancouver Barracks, will proceed to Boise Barracks in time to report to the commanding officer of that post June 20 to accompany Co. I, 17th infantry, to San Francisco, Cal., where he will report to the commanding officer 17th infantry to accompany that regiment to the Philippine Islands.

BAILEY, Contract Surgeon EDWARD, now at Vancouver Barracks, will proceed to Fort Canby for duty to relieve Contract Surgeon James E. Miller, whose contract is annulled to take effect June 2.

PARKMAN, Contract Surgeon WALLACE E., is granted leave for one month, from about June 30, with permission to apply for an extension of one month.

BROOKS, Contract Surgeon JOHN D., is granted leave for one month from about June 10.

FIELD, First Lieutenant PETER C., assistant surgeon, leave granted April 9, is extended 15 days.

SHORTLIDGE, First Lieutenant EDMUND D., assistant surgeon, having completed the duty for which he was ordered to Washington, D. C., June 3, will rejoin his proper station at the United States general hospital, Presidio.

So much of orders of December 29 as direct Captain PAUL F. STRAUB, assistant surgeon, to proceed to San Francisco, Cal., for duty to accompany troops to the Philippine Islands is so amended as to direct Captain Straub upon the expiration of his present leave to proceed to Camp Monterey, Cal., for duty.

WATKINS, V. E., contract surgeon, is granted leave for one month, from return to Fort Huachuca of Contract Surgeon I. W. Brewer from duty at Whipple Barracks.

APPEL, Major DANIEL M., surgeon, is placed on waiting orders at headquarters department of the Colorado for the convenience of the government.

HOLMES, THOMAS G., contract surgeon, is granted leave for one month, from about June 15.

SHORTLIDGE, First Lieutenant EDMUND D., assistant surgeon, is granted leave for one month.

WILSON, ROY A., contract surgeon, is granted leave for two months.

SMITH, First Lieutenant R. M. KIRBY, assistant surgeon, is granted leave for 20 days, from about June 20.

BOSLEY, JOHN R., contract surgeon, will proceed from Washington, D. C., to Governors Island, N. Y., and report to the commanding general, department of the East, for assignment to duty.

Changes in the Medical Corps of the U. S. Navy for the week ended June 20, 1903:

PARKER, J. B., medical director, retired from active service, from June 20, 1903, under provisions of section 1454, R. S.—June 13.

ANDERSON, F., medical inspector, commissioned medical inspector, from January 31, 1903—June 13.

TAYLOR, J. S., passed assistant surgeon, commissioned a passed assistant surgeon, from November 8, 1902—June 13.

MANCHESTER, J. D., DESSEZ, P. T., and WOODWARD, J. S., appointed assistant surgeons, from June 10, 1903—June 15.

DICKSON, S. H., medical inspector, ordered home and to wait orders—June 18.

MORRIS, L., passed assistant surgeon, detached from the Puritan and ordered to the Florida—June 18.

KEENE, W. P., acting assistant surgeon, detached from the Truxtun and ordered to duty with the second torpedo flotilla—June 18.

Changes in the Public Health and Marine-Hospital Service for the week ended June 18, 1903:

GLENNAN, A. H., assistant surgeon-general, detailed as assistant surgeon-general in charge of the domestic quarantine division in the Bureau of Public Health and Marine-Hospital Service—June 10, 1903.

STONER, J. B., surgeon, granted leave of absence for one month from June 30—June 18, 1903.

ROSENAU, M. J., passed assistant surgeon, to proceed to Greenpoint, N. Y., for special temporary duty—June 18, 1903.

NYDEGGER, J. A., passed assistant surgeon, relieved from duty at Cincinnati, Ohio, and directed to proceed to Sault Ste. Marie, Mich., as inspector of immigrants—June 13, 1903.

SPRAGUE, E. K., passed assistant surgeon, granted leave of absence for seven days from June 4, 1903, under paragraph 191 of the regulations.

GRUBBS, S. B., passed assistant surgeon, bureau telegram of May 13, 1903, granting leave of absence for one month, amended so that said leave shall be for one month from May 23—June 13, 1903.

DECKER, C. E., assistant surgeon, granted extension of leave of absence, on account of sickness, for twenty-two days from June 9—June 17, 1903.

LORD, C. E. D., assistant surgeon, relieved from duty at Galveston, Texas, and directed to report to medical officer in command at San Francisco Quarantine for assignment to special duty—June 18, 1903.

SIBREE, H. C., acting assistant surgeon, granted leave of absence for six days from June 16—June 15, 1903.

CARLTON, C. G., pharmacist, granted leave of absence for thirty days from June 1—June 6, 1903.

Boards Convened.

Board convened for the examination of Assistant Surgeon M. K. Gwyn to determine his fitness for promotion to the grade of passed assistant surgeon. Detail for the Board—Assistant Surgeon-General L. L. Williams, chairman; Assistant Surgeon-General W. J. Pettus, and Assistant Surgeon V. G. Helser, recorder.

Board convened for the examination of Assistant Surgeon W. C. Hobby to determine his fitness for promotion to the grade of passed assistant surgeon. Detail for the Board—Assistant Surgeon-General L. L. Williams, chairman; Assistant Surgeon-General W. J. Pettus, and Passed Assistant Surgeon L. E. Cofer, recorder.

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